EDITORIAL

Specialization in Plastic Surgery in Czechoslovakia

In Czechoslovakia, plastic surgery was officially recognized as a specialized branch of surgery as early as 1932 when Academician Burian, the founder of Czechoslovak plastic surgery, was successful in convincing the leading health and education authorities, who were at that time under the influence of the Chamber of Medical Practitioners, that it was an independent branch of surgery on a level with orthopaedics and urology, which had already attained specialized status. The prescribed three years specialist training in a specialized department, which were valid for these two branches, were introduced for plastic surgery. In this way it acquired a position equal to that of otolaryngology and ophthalmology where a similar period of training was required. For many years during the First Republic, Academician Burian remained the only specialist. Later, his two assistants obtained the title of specialist in plastic surgery. At that time basic training in general surgery was not required and six months work in another branch was counted as part of the prescribed three year's training. Academician Burian became the first Professor of Plastic Surgery in 1937 but he was the director of a department in a general hospital and not of a university department.

After the end of the Second World War, the training required in all branches of medicine was systematized, including the training of plastic surgeons. The right to grant titles was transferred from medical organizations to the health authorities. All postgraduate training was entrusted to the State Postgraduate Medical Institute which today has the status of a university college. The required duration of training was then established by decree of the Ministry of Health. It consists of a basic training course in general surgery which lasts for three years. This is followed by an examination of basic grade specialization according to a prescribed syllabus. The study of a super-specialist branch can only be started after the completion of the three years training in general surgery. Today, plastic surgery, paediatric surgery, neurosurgery, thoracic surgery, urology and orthopaedic surgery are recognized as surgical super-specializations. A further five

years period of training instead of the three year period at present will be prescribed in the near future to enable a candidate to become a specialist in one of the higher branches of surgery.

This means, therefore, that in Czechoslovakia today all specialists in plastic surgery have three years of basic surgical training, ending in an examination and at least three years specialist training in a department of plastic surgery under the guidance of a specialist in plastic surgery. At the end of period of training there is a higher level examination for which the Postgraduate Medical Institute has an exactly specified syllabus.

During training great emphasis is placed on program organisation and duration and not on the number of operations performed. Up to the present candidates have presented a record of at least five hundred independent operations performed under the supervision of an instructor in a specialized department. Recently, a control of the entire training period has been introduced by means of a system of registration in a so-called specialization index. This records work done throughout training, including the quality and range of each year of training. The keeping of an index also allows training in a specialized department on the basis of previous practice. This is also valid for candidates who have acquired special knowledge in some neighbouring branch, e.g. stomatology, otorhinolaryngology or paediatric surgery. In these branches one year is counted on to basic training in general surgery and specialized training in plastic surgery must be taken completely.

The examination is composed of four parts. The first part is a general test of the general medical and political knowledge of the candidate placing special emphasis on his ideological development. The second part is a practical test, consisting of an analysis of defects with planning of treatment and performance of the operation. It is usually held at the department where the candidate is working. The third part is a theoretical examination on the entire field of general and specialized plastic surgery. The fourth part is a test of knowledge of the contemporary literature associated with a test in two congress languages. The examination is evaluated according to the candidate's knowledge. According to the result the examination board recommends further work of the candidate.

The Chair of Surgery of the Postgraduate Medical Institute decides whether a candidate can be allowed to take the examination. The examination takes place before board whose president is the President of the Chair of Plastic Surgery, further members of the commission are a specialist in plastic surgery, usually from a different workplace from the candidate, a representative of the Health Authorities, who is the main examiner in health and political questions and a representative from the Postgraduate Medical Institute.

In Czechoslovakia today, there are six departments (three university departments, two hospital departments and one hospital subdepartment) directed by a plastic surgeon and empowered to train specialists in plastic surgery. Up to the present time Czechoslovakia has 10 senior specialists who acquired their specialization in plastic surgery according to the old regulations. During the past 10 years 24 young surgeons attained their specialization according to the new regulations. A qualified specialist has the right to become an independent director or assistant director of an inpatient or of an outpatient department in plastic surgery. Most of those qualified hitherto, however, have remained in their old departments. Independent ordinates, i.e. a specialist attached to a surgical department, are held by five specialists in plastic surgery. In addition, we have two independent burns units, acting as specialized departments in plastic surgery and directed by plastic surgeons.

It is assumed that in the future an independent department of plastic surgery will be set up in each of the 10 regions and in each of the 8 medical faculties.

The basic program of plastic surgery in Czechoslovakia corresponds to that of the first department, i.e. the University Department of Plastic Surgery of Charles University in Prague, founded by Academician Burian. The establishing of more narrowly specialized departments, such as for the surgery of the hand, are being considered for the future.

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QUESTIONNAIRE FOR RESEARCH ON THE ETIOLOGY OF CLEFT-LIP AND CLEFT PALATE AND OTHER CONGENITAL MALFORMATIONS

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INTRODUCTION (F. Burian)

From the twenties of this century I have been in continuous contact with hare-lip and cleft deformities. During these more than 40 years many problems have arisen around these fatal malformations and new problems are continually arising.

From the first pride about the immediate results of the operations I suffered bitter disappointment when, in the course of time nearly all the results deteriorated. The causes were patiently sought and the complex components of these malformations were slowly recognized. The basic biological insufficiency of the forming tissue drag during further development up to adult life. Part of the tissue at the site of the deformity is absent altogether; that which is present does not develop normally with increasing age. The patient enters the world worse equipped and less able to adapt himself to the new environment full of danger. In the continuous struggle to preserve this individual and improve his fate, the factors have been recognized which influence his condition and his future. Methods of treatment were improved and modified to be at least partly capable of righting the unfavourable anatomical and developmental situation.

As compared with the beginning of the century, this finally resulted in the last twenty years, in more than six times the number of patients suffering from total unilateral or bilateral cleft deformities, surviving into adult life without repulsive deformity of the face and with almost normal speech (80% have completely normal speech).

Although these results do not fully correspond with the hopes we had in those days when we were overjoyed by the good appearance of the infants after the first operation on the lip, they do represent very great progress. Our joy from this was very soon spoilt, however, when children from the second and third generation of our original patients started to come for treatment. This pointed to the importance of heredity in the etiology of cleft deformities and at the same time to the importance of paying attention to the growing problem of the prevention of these deformities.

When I first appealed for international cooperation in these tasks no interest was shown whatsoever. In a short time, however, English and American workers devoted to the study of these problems, became aware of the increase in these deformities and of the necessity for taking some measures of prevention, especially since mankind must be prepared for further increases in other congenital deformities where surgery is attaining wonderful results, such as congenital deformities of the heart and blood vessels and developmental anomalies of the brain.

It is, of course, also necessary to work on simplifying and improving the methods of operation and on lowering the moral and social suffering caused by clefts. Finally, it is necessary to prepare a large series of cases treated by given methods in order to evaluate and compare methods used and to chose the best so that they can be recommended for universal use.

This requires an exact assessment of cleft deformities in relation to the extent of the tissue defect and damage to the physiological qualities. For this evaluation a complete examination of the family circumstances is essential, i.e. parents, grandparents and their descendants and the recording of data obtained by personal examination of the members of the family on the incidence of other congenital malformations than clefts and the incidence of diseases in general, on family relationship, economic and social conditions, living conditions, etc.

With the child itself it is necessary to record the length of the gestation period, birth weight, length, development and morbidity in the first weeks of life, constitution, general state of health, etc. Anthropological indexes can be used for the characterization of changes in the face and palate. These findings, together with data in the family questionnaire serve the drawing up of a case history which will permit an objective assessment of the deformity and at the same time help in making the life, functional and aestethic prognosis of the infant.

The final condition of the patient, established according to the same principles when adult life is reached, will facilitate an objective evaluation of the results and a comparison of the different methods.

The questionnaire will, at the same time, be a basic factor in research into the etiology of cleft deformities, for establishing the part played by heredity and environmental factors and their mutual relationship. This questionnaire will also be the main working method for research in regions where there is an abnormally high incidence of congenital malformations.

Workers of the Laboratory for Congenital Malformations of the Czechoslovak Academy of Sciences and of the Clinic for Plastic Surgery of Charles University, Prague, have prepared this questionnaire in the course of a number of years in consultation with a large number of specialists and now present it to the scientific world for assessment. The statistical case history with the code will be presented later.

We repeat the appeal for international cooperation in solving the problems of congenital deformities and in preparing measures for actual prevention, a question of immense importance for the future of mankind.

During the past three years a questionnaire for research into the etiology of hare-lip and cleft palate has been drawn up jointly by the medical staff of the Clinics of Plastic Surgery in Prague and Brno. The questionnaire has been modified and amplified a number of times and the one we now present was drawn up after elaborating experience on a series of 435 patients. The diagnosis code for cleft deformities was taken over from the Brno Clinic of Plastic Surgery. The questionnaire is quite long, since it must include the largest possible number of data on factors which might be acting in the family and on the mother and foetus. It is designed for computer analysis. It is to be filled in by code, i.e. most replies are recorded directly as a number into the corresponding square in the questionnaire and the sequence of the questions facilitates direct transfer onto punched cards. This form was chosen after consultation with specialists for punching machines and analysers and with statisticians. The use of analysers facilitates the making of many different correlations among the data and the evaluating of different associations, which is particularly important in abnormalities of the cleft type where the question of etiology is very complicated since a combination of genetic factors and the action of external factors on the mother or directily on the foetus, are involved.

The questionnaire is composed of a number of parts: data on the propositus, personal, geographical, medical and social data about the mother and father and their families, with careful recording of the circumstances affecting the mother of the propositus in the period before conception and during and especially in the first three months of pregnancy, particularly relating to occupation, diet and morbidity. Data on previous and later pregnancies are also recorded, including the use of contraceptives, medicines, irradiation, habits, etc. The questionnaire is completed by questions relating to genetic history and family pedigree.

The questionnaire is filled in by the doctor during an interview with the parents of the propositus and checked up and if necessary supplemented in the course of regular follow-up.

We are of the opinion that it would be possible to draw up a questionnaire for use in different departments for research on other congenital abnormalities is a similar manner. A certain part of the questionnaire would be in common and could be summarized on one or two punched cards. Thereby much important basic data of significance for all congenital abnormalities could be obtained.

The questionnaire is divided into 10 parts. The first part concerns the propositus with the congenital malformation.

The second part concerns the mother of the propositus and the circumstances during the pregnancy.

The third part concerns the siblings of the propositus. It establishes the birth order, records the number of siblings and possible congenital malformations among them.

The fourth part provides data on other pregnancies prior to the one resulting in the propositus with the cleft deformity.

The fifth part records facts about the mother and father of the propositus shortly before conception.

The sixth part records personal data on the parents of the propositus from childhood to maturity.

The seventh part records the place of residence of the parents from childhood up to conception (provides data for geological research).

The eighth part briefly summarizes some genetic data of the parents of the propositus.

The ninth part is a history of genetic and other data of the family.

The tenth part is family pedigree.

INSTRUCTIONS FOR FILLING IN THE QUESTIONNAIRE

1. The replies to the individual questions are filled in by code numbers into the squares in the questionnaire according to the code and in the same order as the sequence of questions.

2. The code questionnaire is numbered on the left side from 1—81. The questions in each line have the same number (e.g. anomaly of dentition, sex, have number 4 in common). The numbered line serves for orientation on transfering the numbers in the squares to the punched card.

3. Method of filling in the squares of the code questionnaire: The code number which corresponds to the answer obtained to the given question is written in the corresponding squares on the code questionnaire. All squares must be filled in without exception. If the answer to a question is not ascertained or not registered 9 is written into the corresponding square (so long as 9 is not reserved for other data, e.g. associated malformations — lower limb — 9 denotes other congenital malformations). O is written in for negative findings (according to the number of squares).

4. The highest possible number for this questionnaire is 9999, i.e. for determining defects in 9999 proposituses. For a larger number the number of squares for the number of the questionnaire would have to be increased.

5. Replies occupying more than one square are filled in from right to left. For example, on numbering the questionnaire it is necessary to fill in all squares — thus the first questionnaire will be filled in as 0 0 0 1, the 105th 0 1 0 5, etc. Similarly, for the number of children (two places), 2 children are denoted by |0|2,| 11 children by |1|1,| etc. Similarly, in the code number for occupation which has two places, an X-ray laboratory assistant is denoted 0 3. If the occupation is not ascertained the squares are filled in by 9 9.

The consistent adherence to the instructions for filling in the code questionnaire is necessary so that the data can be elaborated on analysers. The number written into the squares according to the code must therefore be absolutely clear and in capital letters so that it cannot be read in two ways. For example, a badly written six could be read as 0, one as seven etc.

THE CODE

I. PROPOSITUS

2. *Date of birth*

Into left two squares write only month of birth denoted by numerals 1—12. Into the two right frames write last 2 figures of year of birth, assuming that our propositus was born after 1900.

3. *District*

Write district No. denoted in key (according to where propositus was born). Districts numbered by doctor himself according to area where research is undertaken. This data is for geological research.

3. *Diagnosis of cleft*

Lip	Degree
11 — left-side cleft-lip (Ls)	1st^0
12 — left-side cleft-lip	2nd^0
13 — left-side cleft-lip	3rd^0
21 — right-side cleft-lip (Rs)	1st^0
22 — right-side cleft-lip	2nd^0
23 — right-side cleft-lip	3rd^0
31 — bilateral cleft-lip	Ls 1^0 Rs 1^0
32 — bilateral cleft-lip	Ls 1^0 Rs 2^0
33 — bilateral cleft-lip	Ls 1^0 Rs 3^0
41 — bilateral cleft-lip	Ls 2^0 Rs 1^0
42 — bilateral cleft-lip	Ls 2^0 Rs 2^0
43 — bilateral cleft-lip	Ls 2^0 Rs 3^0
51 — bilateral cleft-lip	Ls 3^0 Rs 1^0
52 — bilateral cleft-lip	Ls 3^0 Rs 2^0
53 — bilateral cleft-lip	Ls 3^0 Rs 3^0

Alveolar process and anterior part of palate into foramen incisivum (osseous part of primary palate)

11 — left side — intensity	Ls 1^0
12 — left side — intensity	Ls 2^0
13 — left side — intensity	Ls 3^0
21 — right side — intensity	Rs 1^0
22 — right side — intensity	Rs 2^0
23 — right side — intensity	Rs 3^0

Annotation ad 3, Diagnosis of cleft
There are 6 squares for coding all types of cleft:

Into the first two squares from the left write code number of type of cleft-lip (11—53).

Into middle 2 squares write degree of cleft of alveolar process and anterior part of palate up to foramen incisivum (primary palate) (11—53).

Into last 2 squares write code number for degree of cleft of palate (secondary palate) (71—84).
All three components together give complete diagnosis.

A. *Degree of cleft-lip*

1. Notch in vermilion, "scar"
2. Cleft half height of lip
3. Complete cleft-lip

B. *Degree of cleft in alveolar process and anterior part of palate*

1. notch in alveolus
2. cleft of whole height of alveolar arch
3. complete cleft reaching into foramen incisivum

31 — bilateral cleft Ls 1^0 Rs 1^0
32 — bilateral cleft Ls 1^0 Rs 2^0
33 — bilateral cleft Ls 1^0 Rs 3^0
41 — bilateral cleft Ls 2^0 Rs 1^0
42 — bilateral cleft Ls 2^0 Rs 2^0
43 — bilateral cleft Ls 2^0 Rs 3^0
51 — bilateral cleft Ls 3^0 Rs 1^0
52 — bilateral cleft Ls 3^0 Rs 2^0
53 — bilateral cleft Ls 3^0 Rs 3^0

Palate

71 — cleft palate 1^0
72 — cleft palate 2^0
73 — cleft palate 3^0
74 — cleft palate 4^0
81 — submucous cleft palate 1^0
82 — submucous cleft palate 2^0
83 — submucous cleft palate 3^0
84 — submucous cleft palate 4^0

00 write in squares when no cleft is found
99 write in squares when the degree of cleft has not been registered

C. *Degree of cleft of palate (secondary palate)*

1. bifid uvula
2. cleft of soft palate
3. reaching into the vault of palate (half of hard palate)
4. complete cleft (in isolated cleft of palate, reaching into foramen incisivum)

Note: Code for diagnosis of other anomalies is not given

4. *Anomaly of dentition*

0 — no
1 — yes
9 — not registered

4. *Sex*

1. Male
2. Female

5. *Blood group*

A — Groups

1 — O Rh+
2 — O Rh—
3 — A Rh+
4 — A Rh—
5 — B Rh+
6 — B Rh—
7 — AB Rh+
8 — AB Rh—
9 — not ascertained

Into the left square write group according to A

Into right square possible incompatibility B

B — incompatibility

1 — ABO serological
2 — ABO clinically anaemia
3 — ABO clinically icterus gravis
4 — ABO clinically hydrops
5 — Rh serological without antibodies
6 — Rh clinically anaemia
7 — Rh clinically icterus gravis
8 — Rh clinically hydrops
9 — not registered

5. *Associated congenital malformation*

1. *CNS (central nervous system)*

1. mongolism (Down's disease)
2. hydrocephalus

Into left square write group number of other congenital malformation (1—9).
Into right square write code number of congenital malformation

3. oligophrenia
4. meningocoele
5. idiopathic epilepsy
6. undetermined mental disorder

2. *Eye, lids and orbit*

1. strabismus
2. visual defect
3. congenital blindness
4. coloboma of the lids
5. ptosis of the lids
6. palpebroorbital syndrome (Burian)
7. unilateral microphthalmus
8. other defects

3. *Hearing apparatus*

1. prominent auricle
2. malformation of auricle
3. aplasia and hypoplasia of auricle
4. severe deafness
5. other defects

4. *Respiratory and cardiovascular system*

1. congenital malformation of the respiratory apparatus
2. congenital heart disease
3. congenital malformation of the vessels
4. dextrocardia
5. other malformations

5. *Gastrointestinal system*

1. fistula of lower lip
2. tongue-tie
3. pancreatofibrosis
4. atresia ani
5. other malformations
6. cleft-lip
7. cleft palate
8. cleft-lip and cleft palate
9. other malformations

6. *Upper extremity*

1. polydactyly
2. syndactyly
3. amniotic strangulation

Denotation of microform: infront of disease (malformation) write "0" (both must be in right square, e. g. 02)

4. agenesis
5. cleft hand (lobster-claw hand)
6. congenital contractures
7. combination of 2+3
8. combination of 2+4
9. other malformations

7. *Lower extremity*

1. polydactyly
2. syndactyly
3. amniotic strangulation
4. agenesis
5. cleft foot (lobster-claw foot)
6. pes-valgus, varus, equinus
7. congenital contractures
8. congenital dislocation of the hip
9. other malformations

8. *Urogenital system*

1. phimosis
2. hypospadias
3. epispadias
4. undescended testicle
5. extrophia of the bladder
6. agenesis of the kidney
7. intersexualism
8. other malformations

9. *Bone and skin structure*

1. spina bifida
2. scoliosis
3. congenital skin defect
4. epidermolysis
5. dermoids
6. naevi, haemangiomas, lymphangiomas
7. other defects

10. *Defects of other organs (e. g. hernia)*

90. *Atypical clefts of the face*
99. *Not registered*
00. *none*

5. *Birth weight and length*

A — *weight in grams*

1 — 1000
2 — 1,001—2,500
3 — 2,501—3,000
4 — 3,001—3,500
5 — 3,501—4,000
6 — 4,001—4,500
7 — 4,501 and more
9 — not registered

Into left square write data on weight A
Into right square data on length B

B — length in centimetres

1 30—35
2 36—40
3 41—45
4 46—47
5 48—49
6 50—51
7 52—53
8 54 and more
9 not registered

6. *Combined with two or more associated congenital malformations*

(including microforms)

0. none
1. congenital malformation of head
2. congenital malformation of trunk and spine
3. congenital malformation of upper extremity
4. congenital malformation of the lower extremity

Denotation of microforms: before corresponding code number write "O". Both code numbers must be placed in one square.

5. congenital malformation of an internal organ
6. mental disorder
7. other congenital malformation
9. not registered

7. *Refraction of eyes of newborn*

Code not given

II. INVESTIGATED GRAVIDITY

8. *Pregnancy*

1. welcomed
2. not wanted
3. accidental
4. planned
9. not registered

8. *State of health*

A. *Ist trimester* — early gestosis

1. good without gestosis
2. good with gestosis but without effect on general condition
3. poor with gestosis with loss of weight
4. poor with gestosis requiring admission to hospital
5. poor without gestosis
9. not registered

B. *IInd and IIIrd trimesters* — late gestosis

1. good without gestosis
2. good with gestosis but without effect on general condition
3. poor with gestosis with loss of weight
4. poor with gestosis requiring admission to hospital
5. poor without gestosis
6. hypertension, oedema, albuminuria
9. not registered

8. *Nutrition*

1. adequate
2. inadequate
3. unusually high intake of vitamins
4. mostly tinned food
5. vitamin D deficiency (clinical evidence of pelvopathy)
9. not registered

9. *Mental stress*

0. none

1. temporary — microtrauma
2. temporary — macrotrauma
3. longterm — microtrauma
4. longterm — macrotrauma
9. not registered

9. *Infections*

000. none

A. 1. in Ist trimester
2. in IInd and IIIrd trimester
3. in Ist, IInd and IIIrd trimester

B. 1. rubella
2. parotitis
3. influenza
4. encephalitis

Write time data into left square (A)
Disease into right square (B)
With 2 diseases fill both squares of part B in order of disease. With one disease fill only right-sided square and write O in middle square.

5. epidemic hepatitis
6. toxoplasmosis
7. febrile disease (unspecified)
9. not registered

10. *Contact with infection*

0. none

1. yes
9. not registered

10. *Other diseases*

000. none

A. 1. in Ist trimester
2. in IInd and IIIrd trimester
3. in Ist, IInd and IIIrd trimester

Filled in as for infections

B. 1. anaemia
2. allergy
3. other skin disease
4. rheumatism
5. disease of respiratory tract
6. disease of gastrointestinal tract
7. disease of urinary tract and kidneys
8. cardiovascular disease
9. not registered

10. *Endocrine disorders*

000. none

With 2 diseases fill in both squares of part B in order in which diseases occurred. With one disease fill in right square, into left square write "O"

A. time data as with other diseases
1. in Ist trimester
2. in IInd and IIIrd trimester
3. in Ist, IInd and IIIrd trimester

B. 1. thyroid gland
2. diabetes
3. adrenals
4. other diseases
9. not registered

11. *Therapy*

0. none
1. hormonal in Ist trimester
2. antibiotics in Ist trimester
3. drugs in Ist trimester
4. hormonal and drugs in Ist trimester
5. hormonal in IInd and IIIrd trimester
6. antibiotics in IInd and IIIrd trimester
7. drugs in IInd and IIIrd trimester
9. not registered

12. *Non-prescribed medicines*

0. no
1. yes
9. not registered

13. *Gynaecological disorders*

0. none
1. disturbances in menstrual cycle
2. adnexitis
3. developmental malformation of uterus
4. other defect
9. not registered

13. *Operations*

0. none
1. abdominal (appendectomy etc.)
2. gynaecological
3. others (head, chest, extremities)
9. not registered

13. *Transfusion and immunization*

0. none
1. transfusion
2. immunization
3. transfusion and immunization
9. not registered

14. *Irradiation*

0. none
1. diagnostic pelvis, once
2. diagnostic pelvis, repeated
3. diagnostic repeatedly lungs and elsewhere
4. therapeutic pelvis, once
5. therapeutic pelvis, repeatedly
6. therapeutic lungs or elsewhere, once
7. therapeutic lungs or elsewhere, repeatedly
9. not registered

15. *Occupation of mother during pregnancy, occupation of father, occupation of grandparents*

Radiation

1. uranium mines
2. atom worker
3. X-rays (health worker and in industry
4. radium
5. clock and watch makers (painting numbers)
6. other

Health Services

7. health personnel
8. infectious disease department
9. laboratory dealing with infectious material
10. other

Contamination from animals

11. breeders, attendants (in agriculture)
12. butchers
13. others (tanners and furriers)

Chemical industry

14. workers with heavy metals (Hg, Pb, Ba)
15. paints and enamels
16. protoindustry
17. food industry (pastry cooks, bakers etc.)
18. printing
19. workers with oil and its derivatives benzine, benzol, tar)
20. artificial resins, rubber
21. workers with acids and bases (soap, vinegar etc.)
22. refrigerator repairers (methylchloride)
23. asphalters and workers with asphalt

Mines and Quarries

24. surface mines, quarries, sandpits
25. deep mines

Contact with people

26. office workers
27. army etc.
28. teachers
29. shop assistants
30. waiters, cooks and their assistants
31. hairdressers
32. actors, artists etc.
33. other

Communications

34. drivers
35. pilots
36. tractor drivers
37. conductors
38. other

Production

39. trades, handicraft
40. clothes and shoe industry
41. hot workshops (foundries, iron works, glassworks, stokers, bakers at oven, boiler workers, ceramics workers)
42. noisy workshops (boiler-makers, carriage-makers, textile industry, spinning shops, forges, smithies)
43. dusty workplaces (cement works, quarries, manufacture of cellulose, glass-cutting shops, millers, stone grinders, polishers, tunnellers, dustmen, stone masons)
44. heavy manual work (navvies, lumberers)
45. welders, vapours from electrodes, CO

Agriculture and building industry

46. forestry excluding lumberers
47. market gardening
48. agriculture excluding animal production
49. tilers, bricklayers, concrete mixers
50. production of prefabricated parts (jolting during production)
51. road makers (excluding asphalters)
52. housewife (hard work with large family)
53. housewife (less work)
54. on pension due to illness
55. on pension due to injury
99. not registered

15. *Transport to work*

0. no transport
1. tiring, exhausting
2. not tiring
9. not registered

16. *Working conditions*

1. at this time not working
2. day shifts
3. night shifts
4. day shifts standing
5. day shifts sitting
6. night shifts standing
7. night shifts sitting
9. not registered

16. *Excessive physical strain*

0. none
1. recreational — excessive sport
2. working
3. 1+2
9. not registered

17. *Injury*

0. none
1. abdomen
2. pelvis
3. head
4. extremities
9. not registered

17. *Contact with domestic animals*

0. none
1. yes
9. not registered

18. *Early vaginal bleeding*

0. none
1. admitted to hospital
9. not registered

18. *Termination of pregnancy*

1. at term
2. premature
3. postmature with induction (provocation)
4. postmature without induction (provocation)
9. not registered

18. *Course of delivery* (where exact data are not available from hospital records)

1. spontaneous
2. surgical
3. protracted
9. not registered

19. *Abortion attempted*

1. not
2. mechanical
3. drugs
4. mechanical + drugs
9. not registered

19. *Some data from hospital records*

A. 1. protracted Ist stage
2. protracted IInd stage
9. not registered

B. 3. oligohydramnion
4. polyhydramnion
9. not registered

C. 5. lower number of arteries in umbilical cord. (1 artery)
6. normal number (2) of arteries in umbilical cord
9. not registered

D. 7. calcification, infarction of placenta
9. not registered

19. *Maturity of infant* (clinical not according to weight)

1. clinically mature
2. clinically immature
3. undeterminable
9. not determined

III. PROPOSITUS AND SIBLINGS

20. *Propositus — birth order*

1. first
2. second
3. third
4. fourth
5. fifth
6. sixth
7. seventh
8. eighth
9. ninth
0. tenth

21. *Normal infants prior to propositus*

0. none
1. one
2. two
3. three
4. four
5. five
6. six
7. seven
8. eight
9. nine

22. *Normal infants after propositus*

0. none
1. one
2. two
3. three
4. four
5. five
6. six
7. seven
8. eight
9. nine

23. *Incidence of investigated malformation in siblings prior to propositus (only number and type of cleft is coded)*

0. none
1. cleft of Ist genet. group in 1 sibling
2. cleft of Ist genet. group in 2 siblings
3. cleft of IInd genet. group in 1 sibling
4. cleft of IInd genet. group in 2 siblings
5. cleft of Ist and IInd genet. group in 2 siblings
9. not registered

23 A. *Type and incidence of associated congenital (and investigated) malformations in siblings before propositus*

A. — one sibling with cleft
B. — second sibling with cleft

Fill in according to code, line 5 (combination with other congenital malformation)

24. *Incidence of investigated malformation in siblings after propositus*

see line 23

24 A. *Type and incidence of associated congenital (and investigated) malformations in siblings after propositus*

see line 23 A

25. *Incidence of other congenital malformations in siblings before and after propositus (number and order)*

0. none
1. 1 sibling before propositus
2. 2 siblings before propositus
3. 3 and more siblings before propositus
4. 1 sibling after propositus
5. 2 siblings after propositus
6. 3 and more siblings after propositus
7. 1 sibling before and 1 sibling after propositus
8. 2 siblings before and 2 siblings after propositus

01. 3 siblings before and 3 siblings after propositus
02. 1 sibling before and 2 after propositus
03. 2 siblings before and 1 after propositus
04. 3 siblings before and 1 after propositus
05. 1 sibling before and 3 after propositus
06. 2 siblings before and 3 after propositus
07. 3 siblings before and 2 after propositus
9. not determined

25 A. *Type of other congenital malformation of siblings prior to and after propositus according to site affected*

Part A of square fill in using code of line 6 (other associated congenital malformations) of siblings before propositus
Part B after propositus

26. *Incidence of multiple congenital malformations in siblings prior to and after propositus (number and order)*

see line 25

26 A. *Type of multiple associated malformations of siblings according to site affected*

0. none
1. congenital malformation of head and neck
2. congenital malformation of trunk and spine
3. congenital malformation of extremities
4. congenital malformation of internal organs
5. cong. malf. urogenital tract
6. cong. mental disorder
9. not determined

In microforms write "01, 02, 03" etc. into corresponding square
This line only provides information about the qualitative grouping of malformations in all siblings

27. *Stillbirths before and after propositus (order and number)*

see line 25

28. *Death of sibling in first year of life before and after propositus (order and number)*

see line 25

28 A. *Cause of death of siblings before and after propositus*

0. none
1. cause undeterminable
2. illness
3. congenital malformation
4. illnes and cong. mal.
9. not registered

A: write causes before propositus
B: write causes after propositus
(a total of 2 causes can be given before and after propositus)

IV. OTHER PREGNANCIES

29. *Extrauterine pregnancy*

0. none
1. one before propositus
2. two before propositus
3. one after propositus
4. two after propositus
9. not registered

29. *Miscarriages and abortions*

00. none
1. one miscarriage before propositus
2. 2—4 miscarriages before propositus
3. 5 and more miscarriages before propositus
4. one miscarriage after propositus
5. 2—4 miscarriages after propositus
6. 5 and more miscarriages after propositus
7. one abortion before propositus
8. 2—5 abortions before propositus
9. 5 and more abortions before propositus
10. one abortion after propositus
11. 2 and more abortions after propositus
12. one miscarriage and one abortion before propositus
13. more miscarriages and more abortions before propositus
14. one miscarriage and one abortion after propositus
15. more miscarriages and more abortions after propositus

99. not registered

30. *Vaginal bleeding (during previous pregnancies)*

0. none
1. admitted to hospital
2. not admitted to hospital
9. not determined

30. *Premature births*

0, none, 1. one, 2. two, 3. three, etc. up to 8, 9. not registered

31. *Course of puerperium*

0. none (first gravidity)
1. normal, apyretic
2. with bleeding
3. fever
4. phlebitis
5. other abnormalities (psychosis)
9. not registered

31. *Contraception*

0. none
1. chemical
2. mechanical
3. mechanical + chemical
9. not registered

V. CIRCUMSTANCES BEFORE CONCEPTION (in mother and father)

33. *Radiation*

00. none

Write A into left square
Write B into right square

A. 1. in childhood
2. at puberty
3. as adult (before propositus)
4. shortly before conception
9. not registered

B. 1. diagnostic pelvis once
2. diagnostic pelvis repeated
3. diagnostic lungs and elsewhere repeated
4. therapeutic pelvis once
5. therapeutic pelvis repeated
6. therapeutic lungs and elsewhere once
7. therapeutic lungs and elsewhere repeated
9. not registered

34. *Infectious diseases*

00. none

A. 1. in childhood
2. at puberty
3. when adult (before propositus)
4. in year of conception
9. not ascertained

B. 1. rubella
2. parotitis
3. epidemical hepatitis
4. febrile diseases and others
9. not registered

35. *Contact with infection*

0. none 1. yes 9. not registered

36. *Other diseases*

00. none

A. 1. in childhood
2. at puberty
3. when adult (before propositus)
4. in year before conception
9. not registered

B. 1. anaemia
2. allergy
3. other skin disease
4. rheumatism
5. disease of the respiratory tract
6. disease of the gastrointestinal tract
7. disease of the urinary tract and kidneys
8. disease of the heart and vessels
9. not registered

37. *Endocrine disorders*

00. none

A. 1. in childhood
2. at puberty
3. when adult (before propositus)
4. at puberty and when adult
5. in year before conception
9. not ascertained

B. see line 10, Endocrine disturbances

38. *Gynaecological diseases*

0. none

A. see Endocrine disorders, line 37

B. 1. irregular bleeding
2. adnexitis
3. sterility in mother
4. congenital malformation of uterus
5. infertility
6. other disorders
9. not registered

38. *Genital diseases of father*

00. none

A. 1. at puberty
2. when adult (before propositus)
3. shortly before conception of propositus
9. not determined

B. 1. tumour of testicle
2. specific disease of testicle
3. other disorders
9. not registered

39. *Treatment (at time of conception)*

0. none
1. hormonal
2. antibiotics
3. drugs
4. hormonal + drugs
5. antibiotics + drugs
9. not registered

40. *Drugs used without prescription*

0. no 1. yes 9. not registered

41. *Operations in mother*

00. none

A. 1. at puberty and when adult (before propositus)
2. shortly before conception
9. not registered

B. 1. abdominal
2. gynaecological (exploratory excision etc.)
3. other (head, extremities, trunk)
9. not registered

41. *Operations in father*

00. none

A. as in mother

B. 1. operation of testicle
2. operation for undescended testicle
3. hypospadias and epispadias
4. inguinal hernia
5. scrotal hernia
6. other hernias
7. others
9. not registered

43. *Extramaritial conception*

0. no 1. yes 9. not registered

44. *Attempt to induce abortion during the year prior to conception*

0. no 1. yes 9. not registered

45. *Miscarriage during year prior to conception*

0. no 1. yes 9. not registered

VI. PERSONAL DATA OF PARENTS OF PROPOSITUS

47. *District*

fill in by code number

48. *Maritial state*

1. single
2. married
3. unmarried wife
4. not registered

50. *Main occupation before conception of propositus*

see line 15

51. *Housing conditions*

1. in childhood bad, then good
2. in childhood good then bad
3. always good
4. always bad
9. not registered

52. *Contact with domestic animals*

0. none
1. only in childhood and adolescence
2. only when married and before conception
3. always
9. not registered

53. *Habits*

0. without
1. 10 cigarettes and more
2. alcohol regularly
3. coffee daily
4. cigarettes + alcohol
5. coffee + alcohol
6. cigarettes + coffee
7. cigarettes + coffee + alcohol
8. narcotics
9. not registered

54. *Nutrition*

A. 1. in childhood
2. at puberty
3. always
4. not registered

B. 1. adequate in calories
2. rich in vitamins and adequate in calories
3. inadequate in calories and poor in vitamins
4. high intake of vitamins
5. not registered

55. *Constitution*

1. asthenic
2. pyknic
3. normosom
9. not registered

56. *Treatment for sterility*

0. no
1. yes
9. not registered

57. *Menstrual disorders*

A. 0. none
1. at puberty
2. when adult
3. before conception of propositus
9. not registered

B. 1. irregular bleeding
2. frequent or — and strong bleeding
3. rare or — and scanty bleeding
9. not registered

57. *Spermiogram*

1. not made
2. suitable for fertilization
3. unsuitable for fertilization
9. not registered

VII. GEOGRAPHICAL DATA

Fill in lines **58, 59, 60** *according to code number of district*

VIII. CONGENITAL MALFORMATIONS OF PARENTS

61. *Diagnosis of investigated malformation of mother and father*
see line 3

62. *Other congenital malformation in mother and father*
see line 5

63. *Two or more associated malformations in mother and father*
see line 6

64. *Microforms*

0. none
1. auricle
2. orbits
3. extremities
4. other defects
9. not registered

65. *Anomalies of dentition and jaws*

00. none
1. rotation of lateral upper incisors
2. rotation of upper canines
3. missing incisors, canines or premolars
4. vestibular or palatine eruption of lateral incisors, canines or premolars
5. roof-like position of central upper incisors
6. atypical form of upper frontal teeth
7. retrusion or protrusion of upper teeth
8. compression of maxilla
9. open bite
10. compression of lower jaw
11. progenia (ventral position of lower jaw)
12. dorsal position of lower jaw (sagittal open bite)
13. prognathia (upper teeth point outwards
14. gothic palate
99. not registered

66. *Speech defect*

0. none
1. yes
9. not registered

67. *Test on toxoplasmosis*

0. not done
1. positive
2. negative
9. not registered

IX. HEREDITY TAINT IN FAMILY OF PROPOSITUS

68. *Investigated malformation in family of mother and father*

fill in number of individuals with cleft deformity

69. *Type of investigated malformation in relatives in family of mother and father*

(only code for clefts is given)

0. none
1. only 1st gen. group
2. only 2nd gen. group
3. mostly 1st gen. group (mixed forms)
4. mostly 2nd gen. group (mixed forms)
5. impossible to determine
9. not registered

70. *Other congenital malformation in family of mother and father*

fill in number of individuals, describe the malformation

71. *Two or more associated malformations in family of mother and father*

fill in number of individuals, describe the malformation

72. *Microforms*

number, describe the malformation

73. *Twins in family of mother and father*

0. none
1. mother one of twins — father one of twins
2. twins in siblings of mother — in siblings of father
3. twins in siblings of mother's parents — in siblings of father's parents
4. mother's parents from twins, father's parents from twins
5. mother from twins and mother's siblings from twins — father from twins and father's siblings from twins
6. mother from twins and siblings of mother's parents from twins — father from twins and siblings of father from twins
7. mother from twins and siblings of mother twins and siblings of mother's parents twins — father from twins, siblings of father twins and siblings of father's parents twins
8. twins in distant relatives of mother — twins in distant relatives of father
9. not registered

74. *Deaths in first year of life*

0. none
1. siblings of parents
2. siblings of grandparents
3. distant relatives
4. combination of 1 + 2
5. combination of 1 + 2 + 3
6. combination of 2 + 3
7. combination of 1 + 3
9. not registered

75. *Cause of death*

0. none
1. impossible to determine
2. disease
3. congenital malformation
4. disease and congenital malformation
9. not registered

76. *Stillbirths — number*

77. *Other diseases and malformations*

A. 0. none
1. in siblings of parents
2. in siblings of grandparents
3. in distant relatives
4. combination of 1 + 2
5. combination of 1 + 2 + 3
6. combination of 1 + 3
7. grandparents
9. not registered

B. 1. speech defect
2. alcoholism
3. venereal disease
4. TB
5. endocrine disorder
6. TB and alcoholism
9. not registered

78. *Consanguinity*

00. none
11. parents of propos. first cousins (grandparents siblings)
12. parents of mother of propos. cousins (great-grand parents siblings)
13. parents of father of propos. cousins (great-grand parents siblings)
14. consanguinity not exactly specified
99. not registered

79. *Occupation of paternal grandmother*

see line 15

79. *Occupation of paternal grandfather*

see line 15

80. *Occupation of maternal grandmother*

see line 15

80. *Occupation of maternal grandfather*

see line 15

81. *Psychic disturbances in family of mother — father*

A. see line 77, part A

B. 1. major psychic disease (schizophrenia, maniodepressive)
2. neurosis and similar conditions
3. psychopathy (psychiatric abnormality, character defects and peculiarities)
4. combination of 1+3 in family
5. criminal manifestations
6. suicide
7. diagnosis not known
9. not registered

SUMMARY

The aetiopathological questionnaire for investigation of congenital malformations, constructed on the experience gained in a series of 435 cleft lip and palate patients is designed for computer analysis. With a correspondingly adjusted code it can be used for research of other congenital malformations. Data gained are of importance for the construction of a coded case history of the patient.

We ask workers in this speciality for their opinion and collaboration.

RÉSUMÉ

Questionnaire servant aux recherches sur l'étiologie du bec-de-lièvre total et d'autres malformations congénitales

F. Burian, Membre de l'Académie, O. Klásková, L. G. Farkaš, J. Červenka

Ce questionnaire étio-pathologique a été élaboré à base des expériences faites avec l'évaluation statistique, à l'aide de machines à cartes perforées, d'une série d'essai de 435 questionnaires au sujet des becs-de-lièvre. Il est destiné à l'évaluation statistique à l'aide de cartes perforées. En utilisant un code approprié, il peut servir également à des recherches relatives à d'autres malformations congénitales diverses.

Nous nous adressons aux spécialistes du domaine des chéiloschisis en leur demandant leurs critiques et leur collaboration.

ZUSAMMENFASSUNG

Fragebogen für Forschungszwecke hinsichtlich der Aetiologie von Lippen- und Gaumenspalten und anderen kongenitalen Störungen

F. Burian, Mitglied der Akademie, O. Klásková, L. G. Farkaš, J. Červenka

Der ätiopathologische Fragebogen wurde auf Grund der Erfahrungen bei der maschinellen Bearbeitung einer Versuchsserie von 435 Fragebögen über Spaltenbildungen zusammengestellt. Er ist für die maschinelle Verarbeitung von Lochkarten bestimmt. Bei entsprechend eingestelltem Schlüssel kann er für Forschungszwecke bezüglich verschiedener kongenitaler Defekte verwendet werden.

Fachmänner auf dem Gebiete der Spaltenbildungen werden um ihr Urteil und Mitarbeit ersucht.

RESUMEN

Questionario ara la investigación de la etiología de la fisura de labio y paladar y de otros defectos congénitos

Académico F. Burian, O. Klásková, L. G. Farkaš, J. Červenka

El questionario etiopatológico fue redactado a base de lás experiencias adquiridas por el procedimiento mecánico de la ferie experimental de 435 questionarios de fisuras. Está asignado para el proceso mecánico afectuado en lás fichas de perforación. Con una llave adequadamente adaptada se puede usar para la investigación de varios defectos congénitos.

Rogamos a los trabajadores que se ocupan de los defectos de fisuras de darnos su juicio y prestarnos su colaboración.

(Dr. O. Klásková): Šrobárova 50, Prague 10, Czechoslovakia

Aetiopahtological questionnaire on Congenital Malformations

(Fill up in block letters)

Date of filling in form: No. of case history:

0. Questionnaire used for research of:
1. Cleft lip and palate
2. Congenital malformation of eye, lids and orbit
3. Congenital malformation of extremities
4. Congenital malformation of ear
5. Other congenital malformations

I. PROPOSITUS

1. Quest. No.
2. Name .....
3. Birth-place ..... District
4. Anomaly of dentition
5. Blood group — A B
6. Two or more associated malformations
7. Refraction of eyes

Date of birth (month, year)
Sex
Associated malformation
Diag. of exam. def.
Birth weight and length — A B

II. COURSE OF EXAMINED PREGNANCY

8. Pregnancy
9. Mental stress
10. Contact with infection
11. Therapy

Medicines prescribed .....

12. Non-prescribed medicines
13. Gynaecological disorders
14. Exposure to irradiation
15. Occupation during pregnancy
16. Working conditions
17. Injury
18. Early vaginal bleeding
19. Abortion attempted

State of health (gestosis) — A B
Other diseases — A B
Operations
Termination of pregnancy
Data from hospital records — A B C D

Nutrition
Infections — A B
Endocrine disorders — A B
Transfusion Immunization
Transport to and from work
Excessive physical strain
Contact with domestic animals
Course of delivery
Maturity of infant

Age of mother, pregnancies, birth order

1. Birth order	1.	2.	3.	4.	5.	6.	7.	8.	9.	10.	11.	12.
2. Age of mother												
3. Normal birth												
4. Stillborn												
5. Miscarriage												
6. Abortion												
7. Extrauterine gravidity												

III. PROPOSITUS AND SIBLINGS

20. Number of pregnancies

Propositus birth order

21. Normal infants prior to propositus (No)

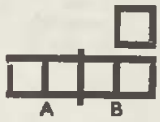
22. Normal infants after propositus (No)

23. Incidence of investigated malformation in sibling prior to propositus (No and type)

23A. Type and incidence of associated malformation (and investigated malformation) in these siblings

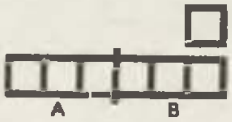
24. Incidence of investigated malformation of siblings after propositus (No and type)

24A. Type and incidence of associated malformation (and investigated malformation) of these siblings



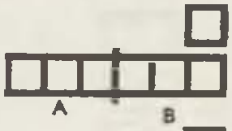
25. Incidence of other malformation in siblings prior to and after propositus (No and order)

25A. Type of other malformation of siblings according to site affected prior to and after propositus



26. Incidence of multiple congenital malformations of siblings prior to and after propositus (No and order)

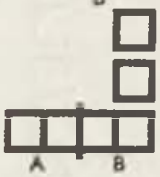
26A. Type of multiple congenital malformations of siblings according to site affected



27. Stillbirths prior to and after propositus (order, No)

28. Died during first year of life prior to and after propositus

28A. Cause of death prior to and after propositus



IV. OTHER PREGNANCIES

29. Extrauterine pregnancy

Miscarriage and abortion

30. Vaginal bleeding

Premature births (number)

31. Course of puerperium

Contraceptives used, if any

V. CIRCUMSTANCES BEFORE CONCEPTION (IN MOTHER AND FATHER)

	Mother		Father
32.		Age at time of conception	
33.		Exposure to radiation	
34.		Infectious diseases	
35.		Contact with infection	
36.		Other diseases	
37.		Endocrine disorders	
38.		Gynaecological diseases Disorders of genitals	
39.		Prescribed drugs taken	
40.		Drugs not prescribed taken	
41.		Operations	
42.		Probable month of conception	
43.		Extramatrimonial conception	
44.		Attempt to induce abortion during the year prior to conception	
45.		Miscarriage during year prior to conception	

VI. PERSONAL DATA OF PARENTS

Mother		Father
	Family name	
46.	Year of birth	
	Birth place	
47.	District	
	Address	
48.	Maritial state	
	Date of marriage	
	Nationality	
	Present occupation	
49.	Age on starting work	
50.	Main occupation before conception of propositus	
51.	Housing conditions	
52.	Domestic animals	
53.	Habits	
54.	Nutrition	
55.	Constitution	
56.	Treatment for sterility	
57.	Menstrual disorders Spermiogram	
	Menarche	

Chronological table of diseases

Time	morbilli		varicela		rubella		scarlatina		parotitis		pertussis		hepatitis epidemica		tonsillitis		rheumatism		febrile diseases		intestinal diseases	
	M	F	M	F	M	F	M	F	M	F	M	F	M	F	M	F	M	F	M	F	M	F
Up to puberty																						
From 16 years																						

M = mother, F = father

VII. GEOGRAPHICAL DATA

Mother		Father
58.	Districts of domicile to 16 years of age	
59.	District of domicile after 16 years	
60.	District of domicile at time of conception and first trimester	

VIII. CONGENITAL MALFORMATIONS OF PARENTS

	Mother		Father
61.		Diagnosis of examined malformation	
62.		Other malformation	
63.		Multiple malformations	
64.		Microforms of congenital malformations (type)	
65.		Anomalies of dentition	
66.		Speech defect	
67.		Test on toxoplasmosis	

IX. HEREDITARY TAINT IN FAMILY

	Mother		Father
68.		Examined malformation (No)	
69.		Type of examined malformation	
70.		Other cong. malformation (No)	
	Type:	.....	
71.		Multiple malformations (No)	
	Types:	.....	
72.		Microforms of cong. malformations (No)	
	Type:	.....	
73.		Twins (No)	
74.		Death in first year of life (No)	
75.		Cause of death	
76.		Stillbirths (No)	
77.	A B	Other diseases and defects	A B
78.		Consanguinity	
79.		Occupation of grandmothers	
80.		Occupation of grandfathers	
81.	A B	Psychic disturbances	A B

X. PEDIGREE

NIITO, Novosibirsk (U.S.S.R.)
Director: Doc. D. P. Metelkin

MIGRANT MUSCLE-SKIN PEDICLE FLAP FOR RESIDUAL CAVITY IN PLASTY OF THE TIBIA

R. M. RYVKINA-FOORMAN

The surgical treatment of infected bone cavities consists basically in radical surgical toilet, resection of the wall affected by the destructive process, and filling up of the cavity with tissue of good blood supply. Such tissue is formed in the first place by muscle tissue, as represented by a muscle pedicle flap.

Although surgeons use muscle plasty widely in the treatment of bone cavities of the femur and humerus, they meet with great difficulties in the treatment of

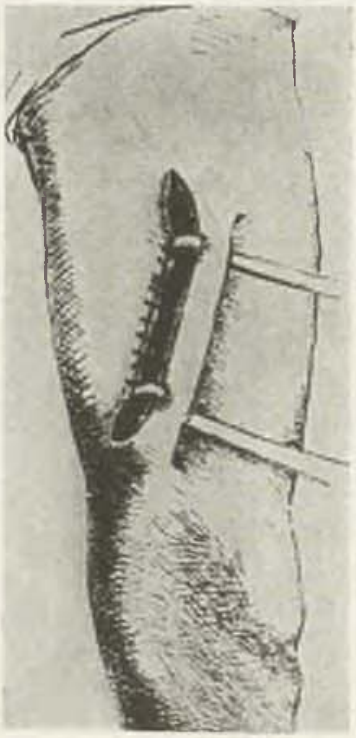
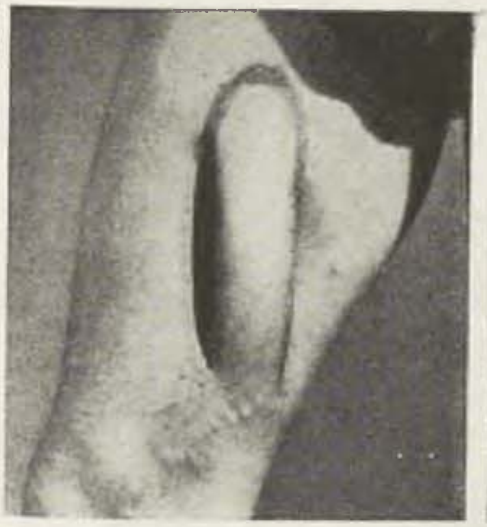


Fig. 1a.

Fig. 1b.

Fig. 1a. First stage of formation of muscle-skin pedicle flap. Excision of skin band with two pedicles and lifting sartorius muscle onto the surface of thigh. Donor site completely closed by primary suture. — Fig. 1b. Second stage of formation of muscle-skin pedicle flap. Free skin graft covering the muscle at the back of flap being sutured to the skin band in front.

residual cavities in the tibia, particularly when situated in the middle or distal third. This is due to the skin cover of the lower third of the leg being little mobile and to the absence of a bulk of muscles in this region. These anatomical features rule out the possibility of filling a residual cavity in the tibia with local tissue of good blood supply.



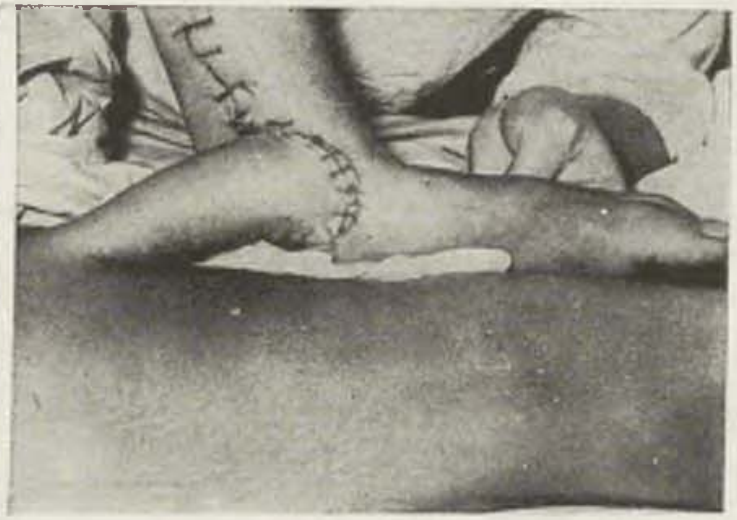


Fig. 2. Fig. 3.

Fig. 2. Patient M. Appearance of muscle-skin pedicle flap prior to the start of bone cavity plasty. At upper end the line of separation of proximal pedicle, to be used for bone cavity plasty of osteomyelitic focus in tibia, is marked with a dye. — Fig. 3. Patient K. Filling osteomyelitic bone cavity in tibia with muscle-skin flap from the contralateral extremity on a proximal pedicle.

This, in 1951, induced Aryev and Nikitin to elaborate their method of filling cavities in the distal part of the tibia with a muscle pedicle flap from the contralateral leg. They mainly used the sartorius, less frequently the calf muscles. A similar operation was once performed by the French surgeon, Charles Nélaton, in 1910.

Doodin, in 1960, and Lindenbaum, also in 1960, who used a muscle flap from the other leg in the treatment of chronic osteomyelitis of the tibia, urgently recommended taking the flap from the calf muscles.

However, if there are fistulae and the skin is of poor quality due to scars, employment of muscle only, requires supplementary skin plasty and thus greatly increases the number of stages of the surgical treatment as a whole. If both the muscle plasty and the skin plasty are performed in one stage, "the operation is made more complicated by the necessity of having to calculate the size of the muscle flap and that of the skin flap differently" (Aryev, Nikitin 1955).

In such a situation the task is greatly facilitated by using a muscle-skin pedicle flap, the method of which we elaborated in 1961 and which we have since employed successfully, in the treatment of infected residual cavities of the tibia, in 16 patients.

The muscle-skin pedicle flap consists of the sartorius muscle which, after being lifted out of its bed onto the surface of the thigh with a skin on two pedicles covering its anterior aspect, is covered with a free skin graft on the remaining raw surface on the back (Fig. 1a, b). After the operation wound has healed, the muscle-skin flap is transplanted in the same way as a Filatov flap.

Fig. 4.

Fig. 5.

Fig. 4. First stage of bone cavity plasty. Muscle core of flap layed bare and fixed to bone cavity. — Fig. 5. Last stage of bone cavity plasty. Skin of flap covering the muscle is sutured to wound edges on leg.

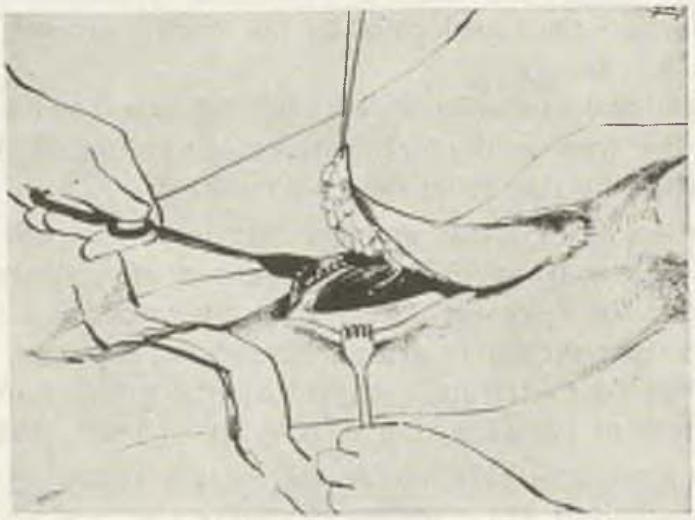


Fig. 6. Final stage of bone cavity plasty with muscle-skin pedicle flap. Muscle stump is placed into cavity; the skin has not yet been sutured.

Thus the flap, covered with skin on all sides, remains unaffected by the deleterious influence of the milieu externe, particularly by infection, which is the danger to the exposed muscle of a flap directly transplanted from the other calf. Apart from this, the muscle-skin flap, consisting not only of muscle but also of first rate skin, permits immediate plastic coverage of the wound defect

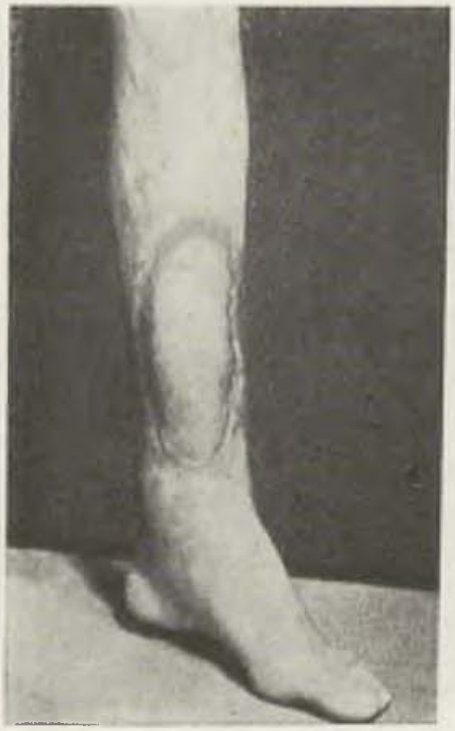


Fig. 7. Patient Sh. Appearance of leg after plasty of osteomyelitic bone cavity with muscle-skin pedicle flap from contralateral extremity.

left after the excision of the fistulae, the scars and the skin of inferior quality on the osteomyelitic leg.

The operation of filling up a residual bone cavity with a muscle-skin flap transplanted from the contralateral extremity consists of three stages.

In our schedule the first stage is that of *formation of the muscle-skin pedicle flap.* In the middle third of the thigh, following the course of the sartorius muscle, two parallel incisions are made through skin, subcutaneous tissue and fascia, 18, 20 or 22 cm. long, depending on the required length of the flap; the two incisions are 5 to 6 cm. apart. The sartorius sheath is thus opened on two sides permitting the muscle to be lifted out of its bed. By doing this two or three vascular bundles — their number depending on the length of the flap to be formed and its situation, i.e. whether higher up or lower down on the thigh — entering the muscle from the main vessels supplying the extremity, have to be ligated and severed. Then the wound defect in the thigh is completely closed by primary suture. The bare, posterior surface of the thus formed two-pedicle flap is then covered with a free skin graft taken with a dermatome and the edges sutured with cotton stitches to the edges of the band of

autochthonous skin covering the anterior aspect of the flap. In this way a pedicle flap is formed whose core is made up of the sartorius muscle connected with the thigh by two nutritive pedicles, but covered all round with skin (Fig. 2).

The second stage is that of *radical sequestrectomy and the first stage of filling up the residual bone cavity with the muscle-skin pedicle flap,* which is performed 25 to 27 days later. This space of time is, in our opinion, quite

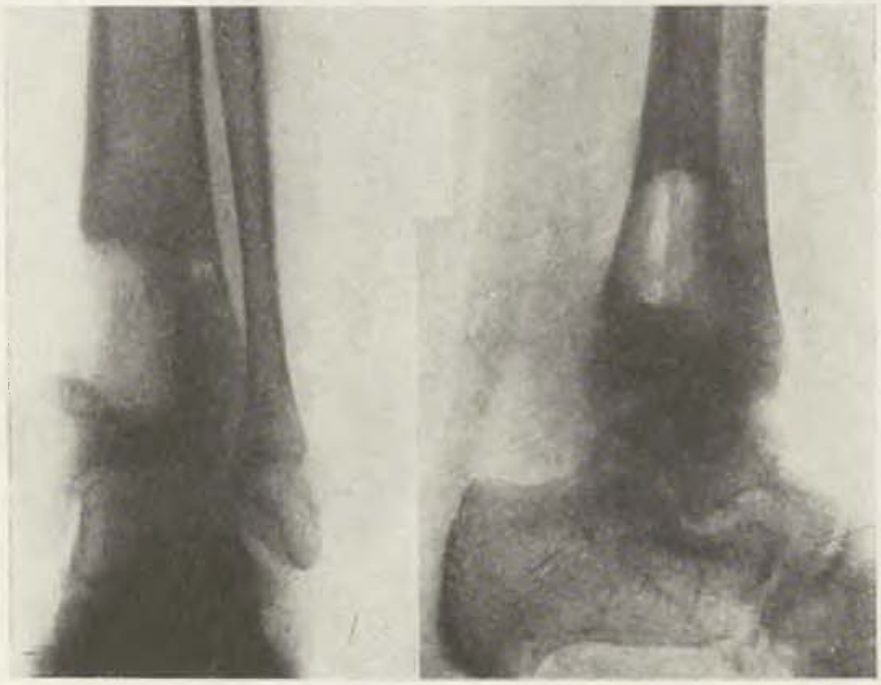


Fig. 8. Patient K., case paper 340. Condition after bone cavity plasty with muscle-skin pedicle flap from contralateral extremity. X-ray shows postoperative bone cavity of considerable dimensions.

sufficient for the consolidation of the flap on the thigh. The operation starts with radical sequestrectomy in the tibia. The cicatrized skin is excised together with the fistulae. One wall of the bone cavity is then removed completely. From the thus widely opened bone cavity the inner bone lining, affected by the destructive inflammatory process, is resected. After this part of the operation has been completed, a trough-shaped bone defect lies open with, if possible, the bone marrow exposed. Then, in dependence on the location of the bone cavity, one or the other pedicle of the muscle-skin flaps is separated. If the focus of the osteomyelitic process lies in the distal metaphysis of the tibia, the distal pedicle is severed and after filling up the bone cavity with the tissue of the flap, the latter remains connected with the donor site on its proximal nutritive pedicle (Fig. 3).

If the bone cavity is situated in the middle third of the tibia, the flap is transplanted on its distal pedicle. When separating the pedicle from the donor site, the muscle is severed further up than the skin and this protruding end of muscle tissue is then placed into the bone cavity and fixed there with catgut stitches led through bore holes in the cavity wall and anchored to the soft tissue

lying close to the outer surface of the tibial diaphysis (Fig. 4). Afterwards, the skin of the flap is sutured to the skin edges of the wound thus completely covering the muscle and filling the wound defect left after the excision of the inferior quality skin of the recipient site (Fig. 3).

It is obvious that this stage of the operation requires a forced position of the extremities. The leg affected with osteomyelitis is bent in the knee and hip

Fig. 9.

Fig. 10.

Fig. 9. Patient D. Condition after the first stage of plasty of osteomyelitic bone cavity in proximal metaphysis of rigth tibia filled with muscle-skin flap from contralateral extremity on a distal pedicle. Plaster cast for immobilization of extremities in forced position. — Fig. 10. Patient M. Appearance of leg one year after plasty of osteomyelitic bone cavity in tibia with muscle-skin pedicle flap from contralateral extremity. The graft shows normal colour and is circled by a thin, linear scar.

joint brought to the other leg bearing the pedicle flap. This position is maintained by a plaster cast (Fig. 9).

In a more extensive osteomyelitis process radical toilet of the bone cavity is divided into two stages. Half, or the larger part of the cavity, is excochleated in the second stage, i.e. the first stage of the plasty proper, and the remaining part in the final stage.

After another 25 to 27 days, the third, *final stage of the muscle-skin flap plasty* is performed. The second pedicle of the muscle-skin flap is separated from its donor site. After removal of the free skin graft, the muscle stump is placed into the prepared remaining part of the bone cavity (Fig. 6) and the

autochthonous skin of the flap, left on top of the muscle, is sutured to the edges of the skin wound on the leg.

In both, the second and final stages of the operation, antibiotics (penicillin and streptomycin) are applied locally.

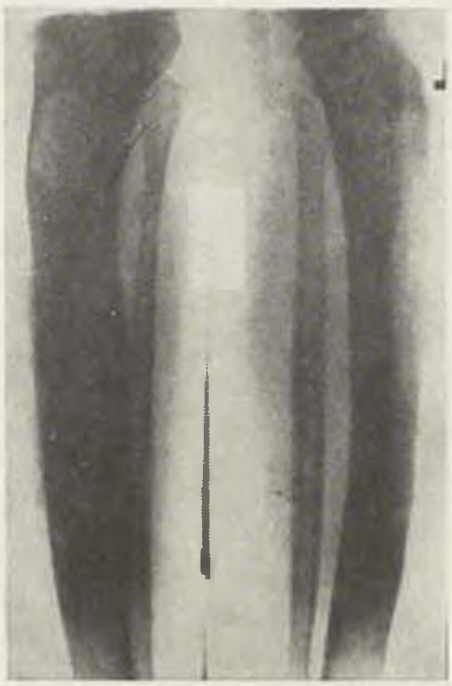


Fig. 11. Patient M. X-ray after plasty of osteomyelitic bone cavity in tibia with muscle-skin pedicle flap shows cavity extending over $^2/_3$ of tibia and marked off by a thin and straight border line.

Formation of the muscle-skin pedicle flap is performed under local anaesthesia, radical sequestrectomy and the first stage of the plasty proper under general anaesthesia, the final stage either under general or local anaesthesia, depending on what has to be done at this stage of the operation, i.e. whether or not radical toilet of the remaining part of the bone cavity is required.

Of the 16 patients treated by this method, 13 suffered from haematogenic osteomyelitis of the tibia of one to 25 years' duration; three patients had osteomyelitis of the same localization resulting from gunshot wounds and persisting over a period of 19 to 20 years. In 12 patients the bone cavity was situated in the distal metaphysis, in three in the proximal metaphysis and in one in the diaphysis of the tibia. The dimensions of the different cavities were quite incomparable; the length varied between 5 and 24 cm., the width between 3.5 and 4.5 cm. and the depth between 3 and 4 cm. The age of the patients varied between 14 (one) and 45 years; the majority, however, was between 20 and 40.

Good early results were achieved in 15 patients; in the 16th the treatment had not been completed at the time of writing this report. The postoperative period was usually uneventful, unless one regards small and superficial marginal skin necrosis, which occurred in two patients and healed with adequately fast

epithelization, to be complications. The patients complained of no pain. At the site where radical sequestrectomy and subsequent muscle-skin plasty was performed, a well healed in skin transplant of normal colour was found; circled by a thin, linear scar (Fig. 7). Neither inflammatory or any other pathological

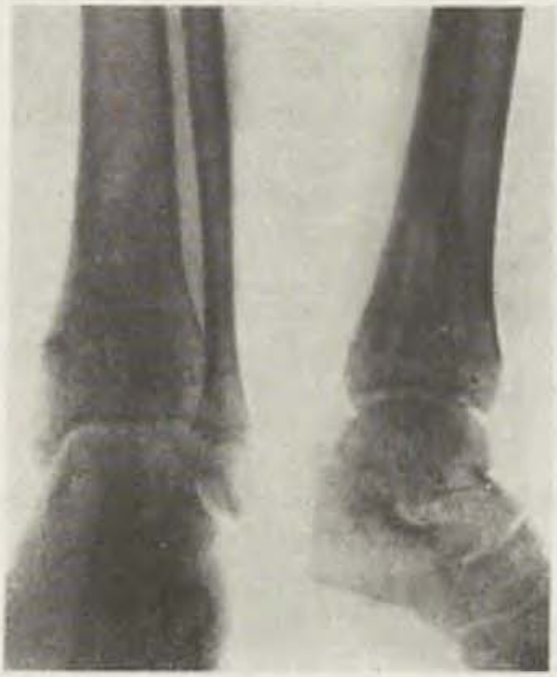


Fig. 12. Patient K., case paper 340. Seven months after operation. Cavity in tibia is almost completely filled with bone tissue.

changes could be detected in its surroundings. In some patients the transplant bulged a little at first, but later it grew smaller. The function of the extremity fully recovered.

On X-ray, the postoperative bone cavity showed straight and clear contours without any foci of destruction (Fig. 11).

On check-up, 12 to 18 months after operation, the X-ray findings of eight patients showed markedly diminished dimensions of the bone defect which appeared to be lined with a thin bone plate. In the patient K. (case paper 340), the former bone defect was almost indiscernible seven months after operation; it appeared to be filled up with bone tissue (Fig. 8, 12). All patients walk a lot and are engaged in physical labour. None of them showed exacerbation of the inflammatory process. At the site of operation there was a mobile, painless skin graft (Fig. 10).

The early as well as the late results of the treatment of osteomyelitic bone cavities in the tibia with a muscle-skin pedicle flap formed from the contralateral extremity justify us in recommending this method for the given localization. In our opinion, it ought to be placed in the category of highly efficacious plastic methods of treatment of infected bone cavities in the tibia.

SUMMARY

1. For the successful treatment of residual bone cavities, plastic material with a good blood supply, such as muscle or skin, is required.

2. Treatment of residual cavities in the tibia is the most difficult. The absence of muscles and sufficiently mobile skin in the leg, and infrequently the presence of a wound defect resulting from excision of cicatrized skin, exclude the possibility of using local tissue, well supplied with blood.

3. The muscle-skin pedicle flap transplanted, as recommended by the above author, from contralateral extremity, permits both filling the bone cavity with muscle of good blood supply and covering the skin defect with skin of full value. The flap can be transferred both on its proximal or distal pedicle.

4. The described method of plastic obliteration of an infected cavity in the tibia was employed in 16 patients.

5. The early as well as late results of using a muscle-skin pedicle flap for the plastic treatment of residual bone cavities in this surgically rather difficult localization, were good in all our cases.

RÉSUMÉ

L'utilisation du lambeau pédiculé musculaire-cutané migrant pour les plasties de la cavité résiduelle du tibia

R. M. Ryvkina-Foorman

1. Pour traiter avec succès une cavité osseuse résiduelle, il faut utiliser pour la greffe un matériel bien approvisionné en sang, tel que le muscle ou la peau.

2. Le traitement d'une cavité résiduelle du tibia se heurte à des difficultés considérables. L'absence, dans la jambe, de muscles et de la peau suffisamment mobile et, dans certains cas, la présence d'une défectuosité de la plaie qui s'est developpée à la suite d'une excision de la peau cicatricielle, excluent toute possibilité d'utiliser du tissu local, bien approvisionné en sang.

3. La greffe d'un lambeau pédiculé musculaire-cutané, prélevé de l'extrémité collatérale, tel que le recommande l'auteur, sert également bien à remplir la cavité osseuse avec du tissu musculaire bien approvisionné en sang qu'à couvrir la défectuosité cutanée par de la peau de bonne qualité. Le lambeau peut être transféré ou bien par son pédicule proximal, ou bien par son pédicule distal.

4. La méthode décrite de l'oblitération plastique d'une cavité infectée du tibia a été employée sur 16 malades.

5. Les résultats précoces et tardifs, après utilisation d'un lambeau pédiculé musculaire-cutané pour le traitement plastique d'une cavité osseuse résiduelle, dont la localisation était plutôt défavorable du point de vue chirurgique, ont été satisfaisants pour tous nos malades.

ZUSAMMENFASSUNG

Ein übertragbarer gestielter Haut-Muskel-Lappen für die Plastik von Resthöhlen des Schienbeins

R. M. Rywkina-Furman

1. Die erfolgreiche Behandlung von Resthöhlen der Knochen erfordert eine plastische Deckung mit Geweben, deren Blutversorgung hinreichend ist (Muskel, Haut).

2. Die schwierigste therapeutische Aufgabe ist die Behandlung von Resthöhlen des Schienbeins. Das Fehlen von Muskeln und einer hinreichend mobilen Hautdecke, zu dem

noch häufig ein Hautdefekt nach Exzision der veränderten Haut tritt, gestattet in diesen Fällen keine Plastik der Knochenhöhlen mit lokalen, gut durchbluteten Geweben.

3. Die Verfasserin schlägt die Behandlung mit einem gestielten Haut-Muskel-Lappen vor, der an der oberen Extremität entnommen wird, die Knochenhöhle mit gut durchblutetem Muskel ausfüllt und den Hautdefekt durch vollwertige Haut ersetzt. Der gestielte Haut-Muskel-Lappen kann sowohl an seinem proximalen, als auch am distalen Ende übertragen werden.

4. So eine plastische Deckung infizierter Knochenhöhlen des Schienbeins wurde bei 16 Patienten vorgenommen.

5. Bei der Plastik von Resthöhlen in dieser für die Behandlung äusserst unvorteilhaften Lokalisierung mit Hilfe des gestielten Haut-Muskel-Lappens wurden günstige klinische Ergebnisse erzielt; sowohl die unmittelbaren als auch die Spätresultate waren zufriedenstellend.

RESUMEN

El colgajo pediculado de la piel muscular migratoria para la plastia de cavidad en tibia

R. M. Ryvkina-Foorman

1. Para un tratamiento útil de las cavidades óseas residuales, hace falta usar el material plástico con un buen abastecimiento de la sangre, como por ejemplo el músculo o la piel.

2. El tratamiento de las cavidades residuales en la tibia es el más difícil de todos. La ausencia de los músculos y la piel suficientemente móvil de la pierna y de vez en cuando la presencia de un defecto lesivo que resulta de una excisión de la piel cicatrizada excluyen la posibilidad del empleo de un tejido local, bien abastecido por la sangre.

3. El colgajo pediculado de la piel muscular transplantado, como recomienda el autor, de la extremidad contralateral, permite hacer el relleno de la cavidad ósea con el músculo de buen abastecimiento de la sangre tanto como la cubierta del defecto de la piel con la piel de valor. El colgajo puede ser transferido por sus pedículos proximales y distales.

4. El método descrito de la obliteración plástica de una cavidad infecciosa de la tibia se usaba en 16 enfermos.

5. Los resultados iniciales tanto como los tardíos en el empleo del colgajo pedicular de la piel muscular para el tratamiento plástico de las cavidades óseas residuales en esta localización, bastante difícil desde el punto de vista quirúrgico, fueron buenos en todos los casos.

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CONTRIBUTION TO SURGICAL TECHNIQUE IN OPERATIONS ON THE SEPTUM NASI IN OUTER NOSE DISFIGUREMENT

L. A. KRICKOON

Traumatic disfigurement of the outer nose is often accompanied by disorders of nasal respiration caused by deformation of the cartilaginous part of the septum nasi. The surgical methods of treating these deformations have, to a great extent, already been established both by Soviet (Voyatchek 1921, 1959, Proskuryakov 1947) and foreign (Converse 1950, Cottle 1953, Goldman 1956) authors. Nevertheless, even up to this time, a number of problems concerning the surgical technique, have not yet been solved. Whereas one group of authors (Seltzer 1949, Converse 1950, Salinger 1955), while advocating the utmost sparing of the quadrangular cartilage, does not refrain from resecting it and even, if indicated, removing it completely, others (Millar 1954) recommend only modelling, division and minute resection of the cartilage in any type of disfigurement of the cartilaginous part of the septum nasi.

In view of the above, we undertook to elaborate special indications for some types of operation on the cartilaginous part of the septum nasi in deformations of the outer nose with regard to the nature of the deformity.

It ought to be pointed out that the surgical methods of operating on the septum nasi differ considerably from those widely used in otorhinolaryngology for the re-establishment of nasal respiration only. Thus, in a crooked nose due to a deformity of the upper or anterior part of the quadrangular cartilage, the very widely used methods, such as submucous resection of the septum according to Killian providing for preservation of these parts, do not repair the deformation of the outer nose.

However, distortion of the outer nose is frequently caused by deformation of the cartilaginous parts of the septum nasi, when not corrected by the given methods.

In order to repair the deformation of the septum accompanying disfigurement of the outer nose, we employ basically three variations of the operation in dependence on the type of deformation.

In a shift of the cartilaginous septum to one side, the operation, which American authors (Seltzer 1944, etc.) call "the operation with the formation of a leaf flap", is recommendable. The procedure consists in the following: under

combined anaesthesia by first painting the nasal mucosa with 1.0 ml. of a 5% cocaine solution and the injecting 5.0 ml. of a 1% novocaine solution under the perichondrium of the septum, an incision is made through mucous membrane and perichondrium along the free margin of the quadrangular cartilage.

The incision along the free margin of the cartilage has proved more convenient than the one employed usually and running from the free margin, because

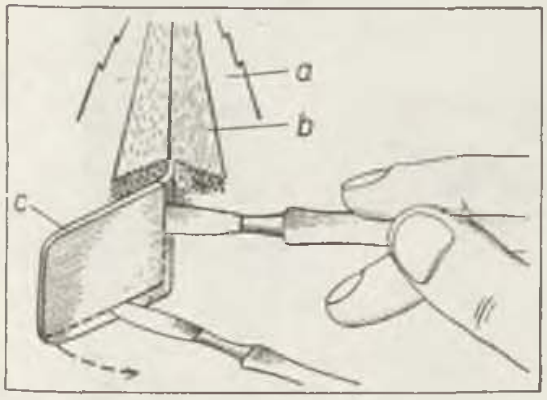

Fig. 1.

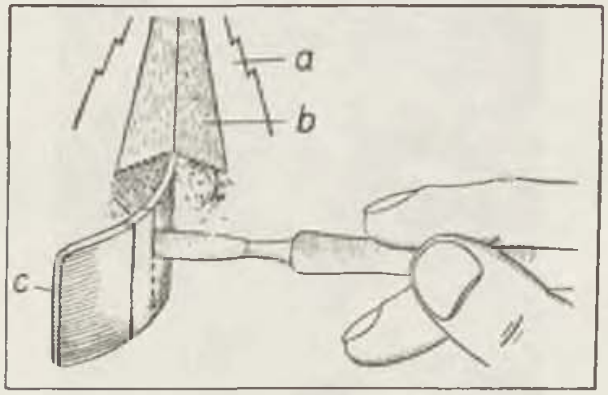

Fig. 2.

Fig. 1. Diagram of mobilization of cartilaginous septum nasi for transposition: a — frontal process of maxilla, b — nasal bone, c — quadrangular cartilage; dotted line indicates site of incision in quadrangular cartilage. — Fig. 2. Diagram of operation: Incision through cartilaginous septum nasi in sickle-shaped deviation: a — frontal process of maxilla, b — nasal bone, c — quadrangular cartilage.

it is often necessary to have access to the region of the anterior margin of the cartilaginous septum whose displacement out of the groove of the anterior nasal spine is typical in disfigurement of the outer nose.

Then the mucous membrane together with the perichondrium is peeled off the cartilage with a flat and blunt raspatory and the cartilage separated from its posterior and inferior attachment to the bony septum but leaving the perichondrium on the other side intact (Fig. 1). The separated and mobilized cartilaginous septum is now centred into the median plane and its free margin fixed with catgut mattress stitches between the two exposed and separated septal processes of the alar cartilages. This will retain the quadrangular cartilage in its median position. The wound in the mucous membrane is closed with two or three catgut stitches.

It is better to peel off the mucous membrane and perichondrium of the septum nasi on the convex side of the deviation, because the scars between perichondrium and cartilage, developing after operation, will prevent displacement of the septum to its previous faulty position. The advantages of this operation are quite evident. It is technically quite simple and, although it mobilizes the quadrangular cartilage adequately, it is still the most physiological since it provides for the preservation of the entire cartilaginous part of the septum while, at the same time, sparing the mucous membrane to the utmost.

In a C-shaped deviation of the cartilaginous part of the outer nose, after having incised and peeled off the mucous membrane together with the perichondrium of the septum nasi by the method described above, a few verticle incisions are made through the entire layer of cartilage across its deviated part extending from the dorsum of the nose to the nasal floor but taking care to

Fig. 3a.

Fig. 3b.

Fig. 3a. Photograph of patient with sickle shaped deviation of cartilaginous septum nasi. — Fig. 3b. Same after operation (division of quadrangular cartilage).

leave the mucous membrane and perichondrium on the other side intact (Fig. 2). Thus the deviated part of the quadrangular cartilage becomes pliable and can be straightened out and placed into the proper position (Fig. 3). If the cartilage tends to spring back into faulty position, a narrow 2 to 3 mm. broad strip is excised from its curvature.

In cases where deformation of the cartilaginous part of the nose is accompanied by deformation of the triangular cartilages, the operation on the quadrangular cartilage must be supplemented by correction of the triangular cartilages. For this purpose an incision is made in the mucous membrane between the triangular and alar cartilages and a pair of blunt-pointed scissors are introduced into the wound separating the triangular cartilage from the overlying skin and the underlying mucous membrane. Then a number of incisions are made in the triangular cartilage at the site of its deformation.

The surgical method described above, i.e. mobilization, division and partial resection of the quadrangular cartilage, if used in gross and extensive disfigure-

ment of the cartilaginous part of the septum nasi, as is particularly often found in complicated and combined deformations of the outer nose, invariably leads — according to our experience and contrary to the opinion of Millar, 1954 — to recurrence of the deformity. In these cases we are forced to remove the entire quadrangular cartilage at the first-stage operation and replace it in the region

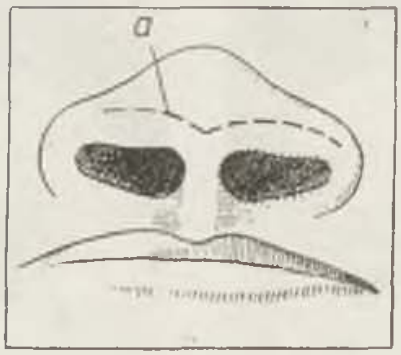

Fig. 4a.

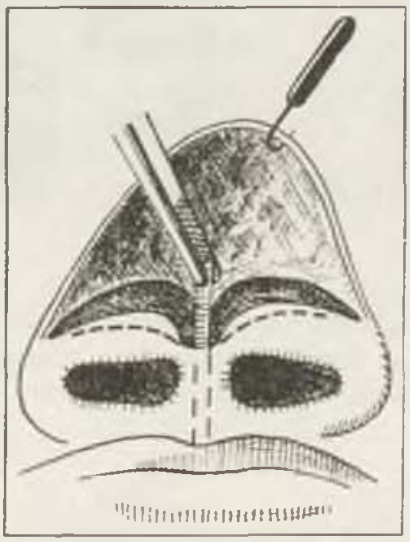

Fig. 4b.

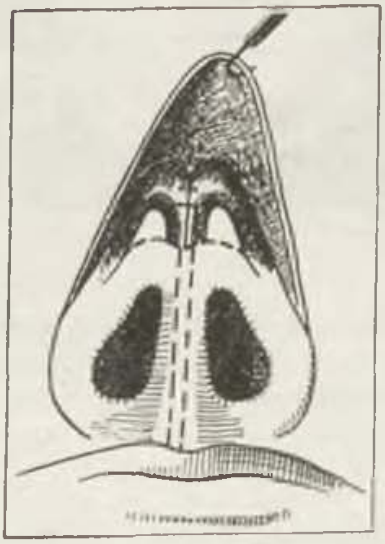

Fig. 4c.

Fig. 4. Diagram of plastic operation reconstructing the septum nasi with homogenous cartilage: a — V-shaped incision on tip of nose (a), b — "buttress" of homogenous cartilage introduced into tunnel, c — alar cartilages lifted to their proper position and sutured to each other over the "buttress" of homogenous cartilage.

of the dorsum of the nose and the septum nasi with homogenous cartilage at the following stage.

In the repair of a flattened nose due to the absence of the quadrangular cartilage, the method, by which one piece of cartilage is introduced to the region of the depressed dorsum pushed right down to the tip of the nose and pinned to the sharpened point of another transplant introduced into the colum-

ella, is widely used. However, the tip of the nose formed by the lower end of the transplant supporting the dorsum of the nose is not elastic enough and sufficiently mobile. Apart from this, the nostrils formed by sections of the alar cartilages, which have not been mobilized by this method, remain flattened.

Fig. 5a.

Fig. 5b.

Fig. 5a. Photograph of patient with outer nose disfigurement due to gross deformation of quadrangular cartilage (prior to operation). — Fig. 5b. Same after operation: complete removal of cartilaginous septum nasi followed by replacement with homogenous cartilage graft.

In our opinion, therefore, this method is indicated rather in those cases of rhinoplasty where the entire tip of the nose is reconstructed from soft tissue and has no cartilaginous frame.

In the repair of deformations of the outer nose due to peace-time trauma, it is usually expedient to use the intact alar cartilage for reconstruction of the cartilaginous frame of the tip of the nose. The operation consists in the following: A two-winged incision (Fig. 4a) is made on the tip of the nose, the soft parts are mobilized towards the dorsum of the nose and turned upwards. The adherent septal processes are separated in the median plane with scissors or a scalpel and a narrow tunnel is burrowed between them down to the anterior nasal spine.

Then the alar cartilages are freed from scar tissue in the region of the arches and turned upwards. A "buttress" of homogenous cadaver cartilage cut into the proper shape is introducted into the tunnel (Fig. 4b) forming a pillar 4—5 mm. broad and 2—3 mm. thick.

Fig. 6a.

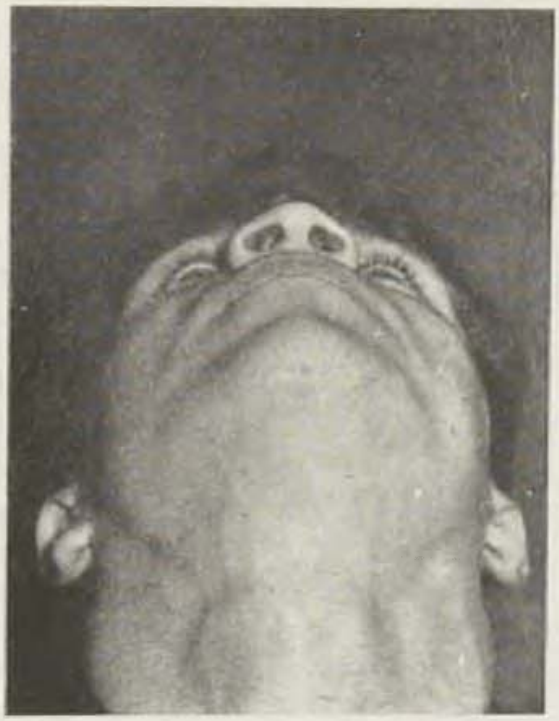

Fig. 6b.

Fig. 6a, b. Photograph of patient with flattening of tip of nose and nostrils due to traumatic damage to quadrangular cartilage (prior to operation).

Fig. 6c.

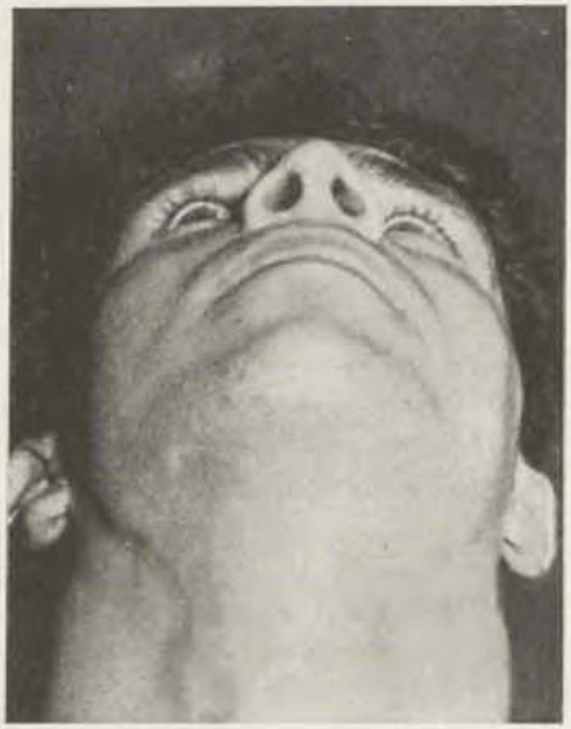

Fig. 6d.

Fig. 6c, d. Same after operation: reconstruction of septum and dorsum nasi with homogenous cartilage.

The length of the cartilage "buttress" varies in the different cases with the distance between the anterior nasal spine and the arches of the alar cartilages lifted to their proper position, usually between 1.5 and 2.5 cm.

The alar cartilages are then sutured together over the cartilage "buttress" with a few catgut stitches (Fig. 4c). Only after this do we start modelling the transplant for the repair of the depression in the dorsum of the nose which becomes more conspicous due to the tip of the nose being brought forward by the previous procedure. The lower end of this transplant reaches the alar cartilages, but it is not pinned onto them.

It ought to be pointed out that the tunnel for the cartilage "buttress" should be made at a level where the skin, covering the mobile part of the septum nasi, changes into the mucous lining, i.e. where the free margin of the quadrangular cartilage is usually situated. In this case we prefer operating in two stages (first stage: resection of the quadrangular cartilage, second stage: reconstruction of the septum and the dorsum of the nose with homogenous cartilage), because there is a lesser chance of infection of the homogenous cartilage grafts which otherwise may occur during the lengthy operation within the nasal cavity when removing the cartilaginous part of the septum nasi. Young (1949), Dufourmentel (1950), Brown et McDowell (1951), Salinger et Cohen (1955) and Goldman (1956) are of the same opinion. For the "buttress" to maintain its vertical position, the cartilage transplant must exactly fit the width of the tunnel.

In view of the circumstances explained above, we recommend that the second stage (septum plasty with homogenous cartilage) be performed not earlier than six weeks after the removal of the quadrangular cartilage, i.e. until a scar has formed between the two leaves of mucous lining of the septum nasi, firm enough to permit burrowing a tunnel through it of the proper dimensions (Fig. 5).

We employ a similar method of plastic reconstruction of the septum and dorsum of the nose with homogenous cartilage in flattening of the cartilaginous part of the nose due to severe traumatic damage of the quadrangular cartilage (Fig. 6).

If reconstruction of the septum nasi is performed immediately after the removal of the quadrangular cartilage, catgut mattress stitches are placed through the entire thickness of soft tissue just behind the cartilage "buttress" This is necessary for the transplant implanted in the columella to maintain the required position and prevent it from sliding between the separated leaves of mucous lining of the septum nasi into the depth of the nasal cavity.

It must once more be stated that replacement of the cartilaginous part of the septum nasi by homogenous cartilage grafts immediately after total resection is justified only in cases where the quadrangular cartilage is deformed to such an extent that its mobilization and partial resection would not result in reconstruction of the proper shape of the nose and renewal of its function.

In all other instances, operation on the septum nasi for the repair of outer nose disfigurement should be performed with the utmost care in sparing as much as possible of the quadrangular cartilage which represents the main support of the cartilaginous skeleton of the nose.

CONCLUSION

1. Disfigurement of the outer nose caused by deformation of the cartilaginous part of the septum nasi must be repaired with the utmost care in sparing the quadrangular cartilage which represents the basic support of the cartilaginous skeleton of the nose.

2. In straightening of a crooked nose due to displacement and limited, but not too gross a deformation of the quadrangular cartilage, it suffices to resort to mobilization or, at the utmost, to division and partial resection.

3. In marked disfigurement and functional disorders of the nose due to gross deformation of the quadrangular cartilage, wide, even total resection is indicated followed by replacement with homogenous cartilage grafts.

4. In repair of a flattened tip of the nose caused by a defect in the quadrangular cartilage, it is expedient to implant homogenous cartilage grafts in the region of the columella and the dorsum of the nose.

SUMMARY

The author deals with various methods of operations on the septum nasi aimed at the repair of external nasal deformities.

RÉSUMÉ

Contribution à la technique chirurgique des opérations de la cloison nasale pour des difformités nasales externes

L. A. Krickoon

L'auteur présente de différentes méthodes opératoires de la cloison nasale, utilisées pour la réparation des difformités nasales externes.

ZUSAMMENFASSUNG

Zur Technik des Eingriffs an der Nasenscheidewand bei Deformationen der äusseren Nase

L. A. Krikun

Die vorliegende Arbeit berichtet über die verschiedenen Eingriffe an der Nasenscheidewand, die bei Beseitigung von Deformationen der äusseren Nase zur Anwendung gelangen.

RESUMEN

Contribución a la técnica usada en operaciones de septum nasi en deformidades de la nariz externa

L. A. Krickoon

En este artículo el autor discute varios métodos operatorios del septum nasi que se efectúan con el objeto de reparar las deformidades de la nariz externa.

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RECONSTRUCTION OF EYELIDS, CONJUNCTIVAL SAC AND ORBIT WITH A TUBED FILATOV FLAP

M. V. ZAYKOVA

Large defects in the eyelids, the conjunctival sac and the orbit are serious functional and cosmetic shortcomings which make the patient reticent and often exclude him from social life.

In ophthalmology, as is well known, many intricate methods of plastic repair of the eyelids and the conjunctival sac have been elaborated which have proved their value in practice and mainly consist in the transposition of skin flaps from the surrounding parts and the use of free skin grafts. In 1917 Filatov recommended his new and original method of blepharoplasty with a tubed flap. However, during the following decades comparatively few papers, mainly based on single clinical observations, were published on the employment of a tubed flap for the reconstruction of eyelids, the conjunctival sac and the orbit (Filatov 1917, Diban et Dienermann 1925, Kollen 1943, Tomashevskaya 1947, Zoltán 1958 and others).

In the period between 1945 and 1962, reconstruction of the eyelids, the conjunctival sac and the orbit using a tubed Filatov flap was carried out at the Sverdlovsk Scientific Research Institute of Traumatology and Orthopaedics in 100 patients in whom a total of 658 operations were performed, 103 of which representing the stage of formation of the tubed flap.

As is well known, plasties employing a tubed Filatov flap belong to the group of many-stage operations. According to our data, the number of stages required for the reconstruction of eyelids, the conjunctival sac and the orbit varied between 3 and 26; on an average 5 to 6 operations in one patient.

In men, we preferred to form the flap on the anterior aspect of the thorax, in women on the inner aspect of the arm, i.e. on parts of the body usually covered by clothes.

According to our observations a flap excised from parts of the face, usually from the temples or the neck, when transplanted to a defect in the eyelids, differs very little in colour from the surrounding skin of the face. Because of its thickness and colour, we do not consider abdominal skin very suitable for plastic operations in the region of the eyelids.

Formation of the tubed flap (first stage of operation) was performed mainly by the method of K'yandsky (1951) under local anaesthesia with a 0.25% novocaine solution.

In recent years we have abstained from preliminary training of the tubed flap, and inspite of this, no complications were observed in the postoperative period. However, one must agree with Znamensky (1962) who regards compression of the pedicle of a tubed flap not as training but as a measure of finding out whether the flap is ready for transplantation. For the immobilization of the head or the arm we used plaster bandages at certain stages of the plasty.

A tubed flap was used for the reconstruction of eyelids in 30 patients for the following indications: In 6 cases for scar ectropion, in 14 for partial or total defect of one lid, in 2 for a total defect of both lids, in 2 for a defect of one eyebrow and in 6 for deformation and displacement of the lids by scars. Superficial eyelid reconstruction with a tubed flap was carried out in 14, full-thickness in another 14 and eyebrow reconstruction in two patients.

Superficial reconstruction was resorted to for the repair of ectropion, displacement and deformation of eyelids caused by scars. It ought to be stated that the technique in each case depended on the peculiarities of the individual case. Thus, for instance, in the second-stage operation for the repair of a scar ectropion of both lids, we made a skin incision 5 to 10 mm. short of the margin of one lid, and excised the subcutaneous scar. In order to cover the resulting defect in the lid, we separated one pedicle of the tubed flap from its donor site, flattened it out as required by the size of the defect and sutured it to the edges of the skin wound. Three to four weeks later, we separated the other pedicle, flattened it out and sutured it to the wound edges of the skin defect in the other lid.

In bilateral ectropion of both lids, we resorted to a combined method of blepharoplasty; we repaired the defect of the lower lids with the tubed flap and in the upper lids we used free skin grafts lifted from the middle third of the remaining part of the flap. For this purpose we transplanted the flap in the second stage to a site near the defect, usually to the temporal region. During the third-stage operation we performed reconstruction of the lower lid on the contralateral side, separating the other pedicle from its donor site on the thorax or the arm respectively. Taking the flap across the back of the nose, we sutured the flattened-out pedicle to the wound edges of the defect in the lower lid. In the fourth (basal) stage we then completed the reconstruction of the other lower lid and, at the same time, repaired the upper lid ectropion on both sides using free grafts. For this we cut out the middle part of the tubed flap, excised from it two free skin grafts and sutured one to the wound edges of the skin defect in each upper lid. The lateral section of the tubed flap implanted in the temporal region was then flattened out and sutured to the edges of the skin defect in the other lower lid. Thus we were able to repair the ectropion of all four lids with one tubed flap.

In our opinion, the most effective method of repair of considerable displacement of the eyelids and palpebral fissure is superficial blepharoplasty with a tubed flap.

The operation for displacement of eyelids consisted of the following stages: The tubed flap was formed on the inner aspect of the arm (first stage). In the second stage, one pedicle was separated and transplanted. In displacement of the medial half of the palpebral fissure downwards, the pedicle was implanted into the region above the medial commissure. In the third, the basic stage of

reconstruction, the other pedicle was separated from its donor site on the arm. Starting at the base of the implanted first pedicle, we made an incision in a downward direction severing all layers down to the periosteum, mobilized the medial commissure and excised all scars in the skin and subcutaneous tissue. The medial commissure was then fixed to the periosteum with two kapron

Fig. 1.

Fig. 2.

Fig. 1, 2. Patient K. prior to operation.

stitches at a level corresponding to that on the other eye or a thin plate of homogenous cartilage was placed into the wound with one end resting on the orbital wall and the other supporting the eyelid commissure. Finally, the flattened-out pedicle of the tubed flap was sutured to the edges of the wound defect.

In displacement of the lateral half of the palpebral fissure a similar incision starting at the base of the implanted flap pedicle was made at the third stage, the palpebral fissure replaced to its normal position and the flattened-out other pedicle sutured to the edges of the skin defect.

Thus, using a tubed flap, we were able to repair quite considerable displacements of the palpebral fissure.

The technique of eyebrow reconstruction with a tubed flap was described in one of our previous papers.[1]

Modifying the full-thickness blepharoplasty as described by Filatov, we left out one intermediate stage which, in the absence of the eyeball, consisted in

[1]) Khirurgia 8, 82—86, 1961

preliminary suturing of a free graft of mucous membrane taken from a cheek or lip, under one pedicle of the tubed flap. In order to reconstruct the defective lid, the upper pedicle of the tubed flap was separated from the temporal region, flattened out and sutured to the edges of the skin defect. At the same stage, a free graft was excised from the mucous membrane of one cheek or lip,

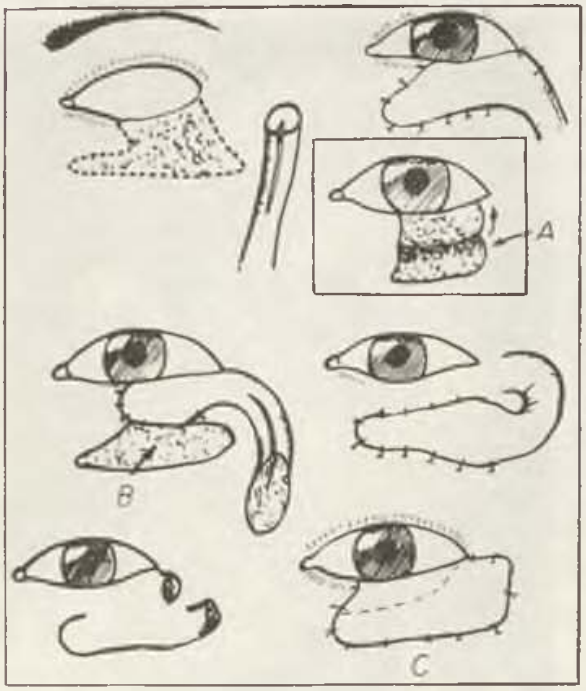

Fig. 3.

Fig. 4.

Fig. 3. Diagram of operation for reconstruction of a lower eyelid and repair of defects in the inferior and lateral walls of orbit using a tubed flap. — Fig. 4. Patient K. after operation.

measuring 3 to 4 by 1.5 to 2 cm., and sutured with thin catgut stitches to the wound edges of the defect in the lid. In the third stage, the other pedicle of the tubed flap was either discarded or returned to the temporal region.

We used the above described one-stage full-thickness blepharoplasty for the reconstruction of eyelids after removal of the lid together with a malignant tumour.

As is well known, reconstructive operations in the region of the orbit belong to the group of particularly complicated plastic procedures. Only a small number of papers have dealt with this problem up to date.

Some authors (Filatov 1943, Tomashevskaya 1947, Khitrov 1954, Kozakiewicz et Mielnik 1957) have employed a tubed flap for the repair of defects in the orbit and eyelids.

Employment of a tubed Filatov flap, in particular, opens out wide possibilities for the reconstruction of defective eyelids and orbits of any localization or size.

In our Institute 49 patients were operated on for defects in the eyelids and orbital wall with the employment of a tubed flap.

The following reconstructions were carried out; 1. in three patients for defects in eyelids and the medial orbital wall, 2. in three patients for defects in eyelids and the margin of the upper orbital wall, 3. in one patient for a defect in the lateral orbital wall, 4. in 25 patients for defects in eyelids and the infero-lateral orbital wall, 5. in five patients for defects in eyelids and the infero-medial

Fig. 5. Patient I. prior to operation.

Fig. 6. Intermediate stage of operation.

orbital wall, 6. in nine patients for defects in eyelids and the medial, inferior and lateral walls of the orbit and 7. in three patients for defects in eyelids and the upper margin as well as the lateral and inferior walls of the orbit.

Simultaneously with the repair of the bone defects in the orbital walls, the following reconstructive operations on the eyelids were carried out: 1. full-thickness blepharoplasty of one lid in 26 patients, 2. full-thickness blepharoplasty of both lids in four patients, 3. partial-thickness blepharoplasty in five patients, 4. superficial blepharoplasty in 12 patients and 5. reconstruction of the conjunctival sac in two patients.

The common features of reconstructive operations in combined defects of eyelids and the bony walls of the orbit are: a) excision of skin and subcutaneous scars in the region of the orbital defect taking great care to preserve any parts of skin or conjunctiva; b) reconstruction of any missing part in the bony wall of the orbit which might serve as anchorage for the reconstructed parts of the eyelids and the conjunctival sac; c) complete reconstruction of eyelids and the periorbital region together with the repair of orbital defects making full use of local and, in large defects of the orbital walls, also of supporting tissues, such as homogenous bone and cartilage grafts; d) in defects involving more than

one wall of the orbit with complete destruction of the eyelids, reconstruction proceeds, as a rule, from the periphery to the centre, i.e. it starts with the reconstruction of the orbit and continues with the formation of the lids.

At the same stage, together with the employment of a tubed flap, repair of the defect in the orbital wall with homogenous cartilage conserved in alcohol

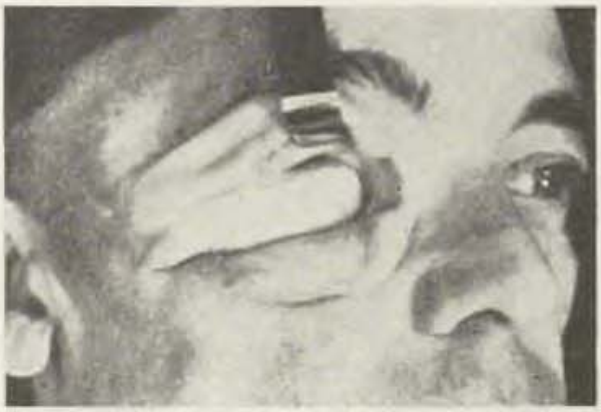

Fig. 7. Intermediate stage of operation.

Fig. 8. Patient I. after operation.

was performed in 20 patients; in 18 patients homogenous cartilage conserved by deep freezing, in six patients homogenous bone also conserved by deep freezing and in another six patients inlays of plastmass "AKR-7" were used for this purpose. Employment of supporting tissues improved the late results of reconstructive operations in which a tubed flap had been used.

The following are short excerpts from case papers:

Patient K., a man born in 1925, was admitted on Feb., 3, 1956, with anophthalmus, complete absence of the lower lid and the inferolateral wall of the orbit on the left. On Sept., 5, 1955, he had sustained a gunshot wound of the left half of the face and had not been operated on previously. — On admission the left eyeball was missing and the lower lid together with the infero-lateral wall of the orbit completely destroyed. The upper fornix of the conjunctival sac was shallow, the lower flattened out completely. At the level of the inferolateral wall of the orbit there was a contracting scar with a fistula in its centre (Fig. 1 and 2). The right eye was intact with a vision of 1.0.

Reconstruction was planned as follows: 1. formation of a tubed flap on the antero-lateral aspect of the thorax, 2. reconstruction of the inferior wall of the orbit and the lower lid with the tubed flap, 3. reconstruction of the infero-lateral wall of the orbit with homogenous cartilage to give support to the eyelid.

On Feb., 14, 1956, formation of the tubed flap on the left side of the thorax, measuring 16 X 8 cm., was carried out. On March, 5, 1957, the lower lid on the left side was reconstructed from the tubed flap; the lower pedicle was separated from the thorax, an incision made at the level of the lower orbital margin, then a flap of the cicatrized conjunctiva formed, turned upwards and fixed to the upper lid at the level of both the medial and lateral commissures, the freed pedicle of the tubed flap flattened out and sutured to the edges of the skin defect

and the free margin of the turned up conjunctival flap (Fig. 3-A, B). On April, 8, the infero-lateral wall of the orbit was reconstructed from the tubed flap; the other pedicle was separated from its donor site on the thorax, an incision made along the lower line of union between the tubed flap and the facial skin and a cavity formed by excision and wide mobilization of tissue. Then the second pedicle of the tubed flap was flattened out to the extent required by the size of the skin and tissue defect at the level of the infero-lateral wall of the orbit exposed by the preceding procedure, and the skin edges of the flap sutured to those of the wound. On July 2, the lower eyelid was reconstructed; the tubed flap was divided into two halves, both ends flattened out, the second, flattened-out pedicle placed into the defect in the lid and sutured to its wound edges (Fig. 3-C). Later some corrective operations were carried out using homogenous cartilage conserved in alcohol. The result of the above described procedures, four years after operation, was reconstruction of the missing lower lid and the infero-lateral wall of the orbit by the combined method of employing both a tubed flap and homogenous cartilage grafts (Fig. 4).

It must be stated that repair of large defects in the medial orbital wall belongs to the most difficult reconstructive operations in ophthalmology. Employing a tubed flap enabled us, in some patients, to repair deep defects in the medial orbital wall and form the medial half of both eyelids, thus reconstructing the medial commissure at the same time. At the second stage, the reconstruction proper, we excised a skin islet from the upper part of the inner aspect of the flap pedicle after its separation from the donor site, as had been recommended by Tomashevskaya in 1947. The size of this islet corresponded to that of the defect in the medial wall of the orbit. We left it connected with the rest of the flap by a pedicle of subcutaneous fatty tissue and fixed it with 2 to 4 catgut sutures to the freshened-up wound edges of the defect in the medial wall of the orbit at the level where it normally forms the side of the nose and is covered with skin. The pedicle of the tubed flap was fixed by hair sutures to the medial wound edge of the defect in the eyelids. For the reconstruction of the inner lining in the presence of the eyeball we used a free mucosa graft from the oral lining of a lip, one edge of which we attached to the edge of the conjunctival defect on the eyeball with episcleral sutures, the other to the free skin edge of the tubed flap which formed the outer surface of the lid. The third-stage operation consisted in the plastic reconstruction of the eyelids. In combined defects of eyelids and orbital walls, we used a number of modifications of full-thickness blepharoplasty with a tubed flap, one of which is described in the case history below.

Patient I., a man born in 1910, was admitted on Nov., 19, 1954, with both eyelids, the upper, lateraral and inferior walls of the orbit, the zygomatic and the eyeball missing on the right. He had been wounded by a mine splinter in 1943.

On admission, the right eyeball was found missing, and in place of the eyelids and the orbit there was a deep, disfiguring pit, the floor of which pulsated. The skin covering the defect of the orbit showed normal colour and no gross scaring. The left eye was intact and its vision 1.0.

On Dec. 30 a tubed flap was formed on the right half of the anterior aspect of the thorax, measuring 20 X 8 cm. (Fig. 5).

On Jan. 25, 1955, the lower pedicle of this flap was transplanted to the region of the missing zygomatic on the right (Fig. 6).

On July 28, reconstruction of the eyelids and the bottom of the "conjunctival" sac was carried out. A longitudinal skin incision, measuring 4 cm., following the midline between the wound edges of the defect and, at both ends, another

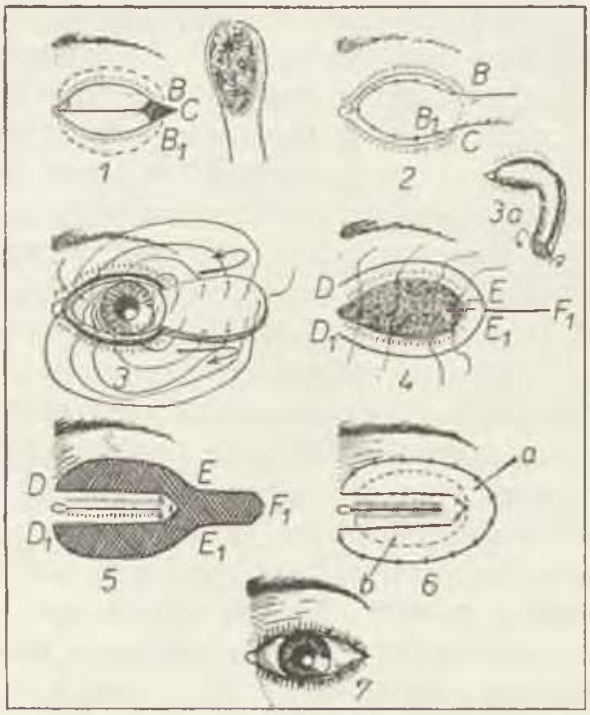

Fig. 9. Diagram of operation employing tubed flap for reconstruction of conjunctival sac, augmentation of atrophic retrobulbar tissue and lengthening of eyelids.

two, vertical incisions, also measuring 4 cm. each, were made. After mobilizing two skin flaps a skin defect was exposed which was covered by the upper pedicle of the tubed flap flattened out, without excising the subcutaneous fatty tissue, and sutured to the skin edges of this new defect. — On Oct. 4, the medial and lateral commissures of the eyelids were reconstructed. 2 cm. above its site of implantation the pedicle was divided and left pendent. However, the eye socket remained deep and its floor pulsated. Shortening of the eyelids was carried out. On Dec. 8, reconstruction of the eyelids was completed. Two skin-and-fat flaps were formed from the pendent tubed flap, the larger sutured to the skin edges of the defect in the upper lid, and the smaller to the edges of the defect in the floor of the eye socket (Fig. 7).

Then followed a few corrective operations and the inferior wall of the orbit was reconstructed with a piece of homogenous cartilage conserved in alcohol.

Thus, with the employment of one tubed flap only, it was possible to form both eyelids and a socket suitable for the retention of an eye prosthesis. The patient has now been under our observation for seven years (Fig. 8).

Very much more difficult is the reconstruction of the conjunctival sac when the eyeball has been destroyed and there is accretion of the eyelids with the contents of the orbit. This task has been little elucidated in the literature; only a few authors (Filatov 1913, Zoltán 1958) have published clinical observations on single cases.

We have used a tubed flap for the reconstruction of the conjunctival sac in 18 patients. In most cases marked atrophy of the retrobulbar tissue and gross

Fig. 10. Patient L. prior to operation.

cicatrization of the eyelid skin was present; some patients had been unsuccessfully operated on previously by various other methods.

According to Nakhminovitch (1939) the area of the conjuctival sac measures approximately 25 cm^2. Following this provision we formed the tubed flap on the inner aspect of the arm measuring 4.5—5.0 × 9.0—10.0 cm.

The second-stage operation consisted in the reconstruction of the bottom of the conjunctival sac. The incision was made along the coherent margins of the eyelids mobilizing them widely above and below and severing their lateral commissure. The upper pedicle of the tubed flap was then separated from its donor site on the arm, flattened out without excising the fatty tissue and sutured to the edges of the conjunctival defect leaving the threads uncut. After placing the eye prosthesis into the socket, these ends were fastened across it thus retaining it in position (Fig. 9: 1—7).

The third stage dealt with the formation of the inner lining of the eyelids. The other pedicle of the tubed flap was separated from the arm and the entire layer of fatty tissue excised from it. Then an incision was made along the line of union between the first pedicle and the lid margins and its edges undercut. The flattened-out second pedicle was turned over by 180° with its epithelial surface facing the orbit and its edges sutured to those of the mobilized first pedicle thus completely enclosing the eye prosthesis. Afterwards the lid margins were approximated and sutured together over the submerged transplant. If the eyelids were shortened by scar shrinkage, prior to the suturing of the lid margins, an incision was made running parallel to them and the lids mobilized by under-

cutting the skin towards the orbital circumference. After approximation and suture of the lid margins a broad skin defect appeared in the skin of the eyelids which was subsequently covered by free skin grafts sutured to its edges. These grafts were lifted from the remnants of the tubed flap. They took well because the blood supply of the submerged transplant was quite adequate.

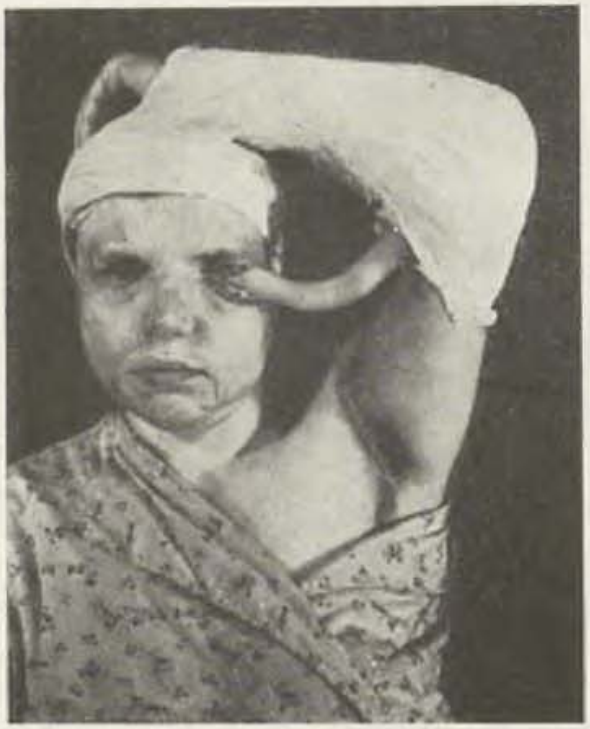

Fig. 11. Second stage of conjunctival sac reconstruction with tubed flap.

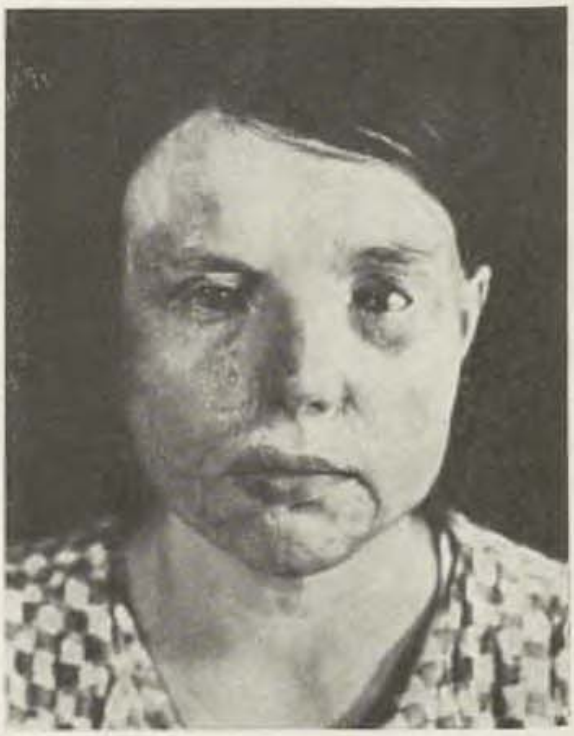

Fig. 12. Patient L. after operation.

The fourth-stage operation, performed one to four months later, was aimed at reopening the palpebral fissure. An incision was made between the coherent lid margins through all tissue layers down to the submerged prosthesis and the free edges of the inner lining and the outer skin cover of either eye lid sutured together.

The following are short excerpts from a case history:

Patient L., a woman born in 1924, was admitted on Jan. 25, 1960, with the left eye missing, the conjunctival sac deformed, the retrobulbar tissue atrophied and the eyelids shortened by scars.

In 1959 she had suffered corrosion of the eyes and face from sulphuric acid and a mechanical destruction of the left eye which had to be removed on primary surgical treatment together with a considerable amount of retrobulbar tissue.

The findings on admission were: vision of the right eye 0.06, incorrectable, the lower lid shortened by scars so that the lid margin stood away from the eyeball; the centre of the cornea was slightly blurred. The left eyeball was missing and both eyelids shortened, the palpebral fissure wide open and displaced

upwards, the conjunctival sac deep and of a spheric shape, its fornices flattened. The ciliary margins of both eyelids, however, were found intact (Fig. 10).

The plan of operation was 1. to form a tubed flap on the inner aspect of the left arm, 2. to transplant the upper pedicle into the orbital cavity, 3. to lengthen the eyelids by a combined method (using the lower pedicle of the tubed flap and free skin grafts) and 4. to reshape a palpebral fissure.

On Jan. 28, 1960, a tubed flap was formed from the skin on the inner aspect of the left arm, measuring 12 × 5 cm.

On April 12, the bottom of the conjunctival sac was augmented and on May 24, the inner lining of the eyelids reconstructed and a free skin plasty performed by the above described method. Apart from this and at the same stage, a free skin graft lifted off the tubed flap and measuring 4 × 2 cm., was used to lengthen the lower lid of the right eye. On Sept. 20, the palpebral fissure was reopened.

These procedures resulted in the reconstruction of the eyelids and the conjunctival sac and also in augmenting the atrophic retrobulbar tissue. — The patient has been under observation two and a half years since the first-stage operation (Fig. 12).

In formation of the tubed flap the wounds healed by first intention in 69% of patients, in the other stages of the plasty healing by first intention took place in 96.2%.

The late results have been checked up in 83 patients at periods between six months and 16 years after operation. Good results were found in 75 patients, i.e. in 90.4%. The reconstructed eyelids remained in their proper position, the skin of the implanted tubed flap showed neither shrinkage nor absorption, it could be lifted up in folds, and in some patients wrinkles appeared with age. Pigmentation of the transplant different to that of the surrounding skin was observed in 6 patients in whom the yellowish wax-like hue of the graft was particularly striking in the first months after operation. In all other patients the colour of the transplant did not differ from that of the surroundings.

In 33 patients the defects in the eyelids and the orbital walls were repaired by using a tubed flap together with supporting homogenous tissue. In the patients with a defect in the medial wall of the orbit, this, too, was repaired and reconstruction proved stable. On evaluation of late results it was found that in all 16 patients, in whom the conjunctival sac was reconstructed with a tubed flap, the latter showed no tendency towards absorption.

Satisfactory results were found in 8 patients, i.e. in 9.6%. The eyelids, though their defects had been repaired, were displaced towards the unrepaired defect in the bony wall of the orbit.

Bad results were not found among any of our patients.

CONCLUSION

1. The tubed flap of Filatov can be widely used in the reconstruction of eyelids, the conjunctival sac and the orbit.

2. Indications for using this flap are mainly large defects in the eyelids, the conjunctival sac and the orbit.

3. Autotransplants of mucous membrane and skin as well as homotransplants of bone and cartilage are but supplementary plastic materials in reconstruction of eyelids, the conjunctival sac and the orbit with a Filatov flap.

SUMMARY

A tubed Filatov flap was employed in 100 patients (in a total of 658 operations) for the reconstruction of eyelids, the conjunctival sac and the orbit in a series of different indications, such as scar ectropion, defects in the eyelids and orbital walls, obliteration of the conjunctival sac, etc.

The author deals with a number of typical operations employing a tubed flap for the reconstruction of eyelids, the conjunctival sac and the orbit.

In order to give support to the transplanted tissue and remodel the contour of the face, free autotransplantation of mucous membrane and skin as well as homotransplants of bone and cartilage were used together with the tubed flap.

Late results were checked up in 83 patients at periods up to 16 years after operation; good results were found in 90.4%, satisfactory in 9.6%.

RÉSUMÉ

Reconstruction des paupières, du cul-de-sac conjonctival et de l'orbite, à l'aide d'un lambeau de Filatov tubuleux

M. V. Zajkova

Un lambeau de Filatov tubuleux a été employé sur 100 malades, ce qui représentait un total de 658 opérations, pour la reconstruction des paupières, du cul-de-sac conjonctival et l'orbite, dans une série d'indications différentes, telles que l'ectropion cicatriciel, des défectuosités des paupières et de la paroi orbitale, des oblitérations du cul-de-sac conjonctival, etc.

L'auteur présente une série d'opérations typiques dans lesquelles un lambeau tubuleux avait été employé pour la reconstruction des paupières, du cul-de-sac conjonctival et de l'orbite.

Pour soutenir le tissu implanté et pour pouvoir remodeler le relief de la face, on a utilisé aussi bien l'autotransplantation libre de la muqueuse et de la peau que l'homéogreffe osseuse et cartilagineuse, simultanément avec l'emploi du lambeau tubuleux.

Les résultats tardifs ont pu être observés sur 83 malades, à des périodes jusqu'à 16 ans après l'intervention; de bons résultats ont été notés dans 90,4% et des résultats satisfaisants dans 9,6% des cas.

ZUSAMMENFASSUNG

Die Korrektion von Defekten der Augenlider, des Bindehautsackes und der Orbita mittels eines Filatowschen Rundlappens

M. W. Sajkowa

Bei 100 Patienten wurde in 658 Operationen ein Filatowscher Rundlappen angewendet, um Defekte der Augenlider, des Konjunktivalsackes und der Orbita aus verschiedenen Indikationen zu korrigieren (narbige Retraktion der Augenlider, Defekt der Augenlider und Orbitawand, Obliteration des Konjunktivalsackes u. a.).

In der vorliegenden Arbeit wird eine Reihe typischer Korrektionsoperationen an Augenlidern, Konjunktivalsack und Orbita unter Verwendung eines Rundlappens angeführt.

Im Hinblick auf die stützende und konturgebende Aufgabe der Plastik gelangten zugleich mit dem Rundlappen Autotransplantationen von Schleimhaut und Haut sowie Homotransplantationen von Knorpel und Knochen zur Anwendung.

Bei 83 Patienten wurden die Spätresultate beurteilt, wobei die Beobachtungsdauer bis zu 16 Jahren betrug. Ein günstiges Ergebnis wurde bei 90,4 %, ein mittelmässiges bei 9,6 % der Patienten festgestellt.

RESUMEN

Reconstrucción de los párpados, saco conjunctivo y órbita con el colgajo tubular de Filatov

M. V. Zajkova

El colgajo tubular de Filatov fue empleado en 100 pacientes (en un total de 658 operaciones) para la reconstrucción de los párpados, del saco conjunctivo y de la órbita en toda una serie de varias indicaciones, como son el ectropio de cicatriz, defectos de los párpados y paredes orbitales, obliteración del saco conjunctivo, etc.

El autor discute un número de operaciones típicas en las cuales se usaban el colgajo tubular para la reconstrucción de los párpados, el saco conjunctivo y la órbita.

Para servir de apoyo al tejido transplantado y para rehacer el contorno de la cara, se usaban autotransplantación libre de la membrana mucosa tanto como los transplantes de piel y homotransplantes óseos y cartilaginosos en conjunto con el colgajo tubular.

Los resultados tardíos fueron controlados en 83 enfermos en intervalos temporales hasta 16 años después de la operación; buenos resultados se hallaban en el 90,4%, resultados satisfactorios en el 9,6% de los pacientes.

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UNSER VERFAHREN ZUM ERSATZ VON SCHÄDELKNOCHENDEFEKTEN

J. ZOLTÁN

Es ist eine Grundregel der plastischen Chirurgie, daß jeder Gewebsdefekt nach Möglichkeit durch autoplastische Transplantation desselben Gewebes ersetzt werden soll. Ein Abweichen von dieser Regel kommt im allgemeinen nur dann in Frage, wenn die Autoplastik mit demselben Gewebe auf irgendein

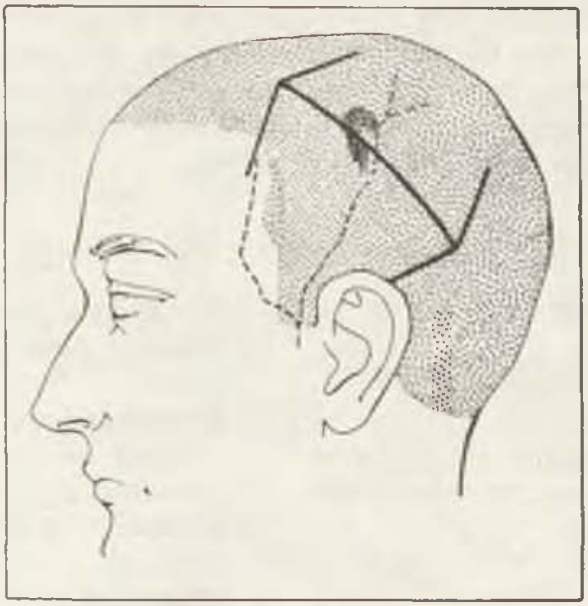

Abb. 1. Der zweckmässige Hautschnitt an der Empfangstelle.

Hindernis stößt. Seit der Verbreitung und Entwicklung der alloplastischen Stoffe mehrt sich ständig die Zahl der Ärzte, die die Alloplastik auch in Fällen anwenden, in denen auch eine autoplastische Methode in Anspruch genommen werden könnte. In verstärktem Maße gilt dies für den Ersatz von Schädelknochendefekten.

In der eigenen Praxis begegneten wir im Laufe der Jahre ständig mehr Kranken, bei denen der zuvor anderswo ausgeführte alloplastische Schädelknochenersatz zu einem Mißerfolg geführt hat: das implantierte Tantalum,

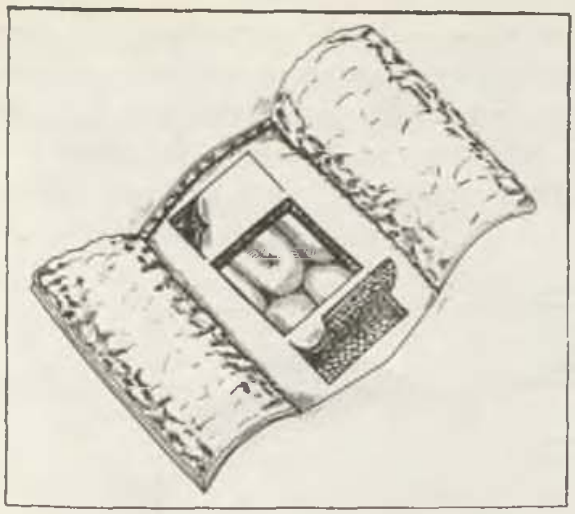

Abb. 2.

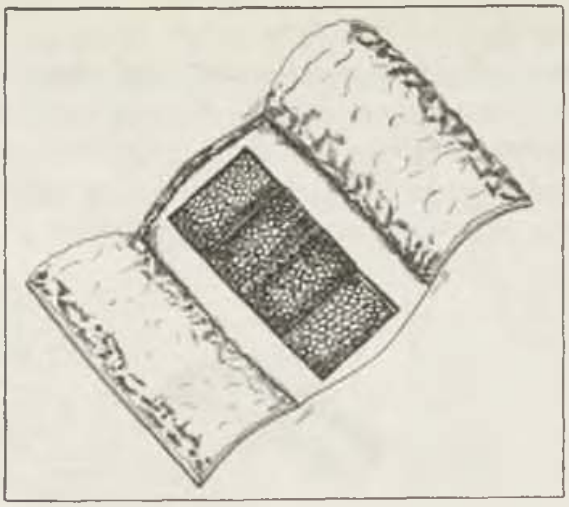

Abb. 3.

Abb. 2. Das Aufheben der Perikranium-Corticalis Lappen in der Umgebung des Defektes. — Abb. 3. Die aufgemeisselte Lappen in die Innenfläche des Defektes gedreht und mit einander zusammengenäht.

Akrylat, organisches Glas oder der Kadaverknochen wurde ausgestossen, frakturierte oder hat sich verschoben. Insbesondere in der Frontalgegend begegneten wir häufig den verschiedensten Komplikationen der Alloplastik.

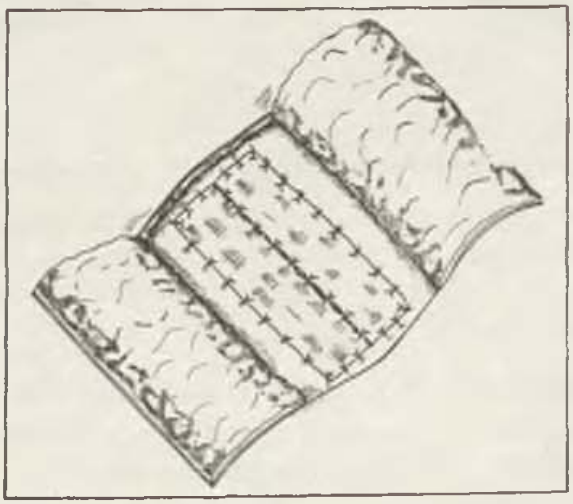

Abb. 4. Der Defekt mit zwei, aus der Tibia ausgemeisselten, biegsamen Periost-Corticalis-Transplantaten bedeckt.

Die im Journal de Chirurgie (82, 5, S. 435, 1961) erschienene Mitteilung von H. LAFITTE ermutigte uns, den „konservativen" Standpunkt unserer Abteilung in Zusammenhang mit dem Ersatz von Schädelknochendefekten darzulegen und das Knochentransplantationsverfahren zu beschreiben, das wir seit mehr als 10 Jahren mit günstigsten Ergebnissen anwenden. Dieses Verfahren wurde von einem Bahnbrecher der ungarischen plastischen Chirurgie, JÁNOS ERTL im Jahre 1921 empfohlen und von M. ÉRCZY und J. ZOLTÁN in der Praxis

modifiziert. Das Prinzip des Verfahren ist, dass man ein auf beiden Flächen mit Periost bedecktes und biegbares Knochentransplantat verwendet, welches nicht resorbiert wird und unter der Wirkung der Gehirnpulsation die normale Schädelwölbung annimmt und daher der Knochen nach seiner Konsolidation die pulsierende Gehirnbewegung nicht einschränkt und auch in ästhetischer Beziehung ein einwandfreies Ergebnis gibt.

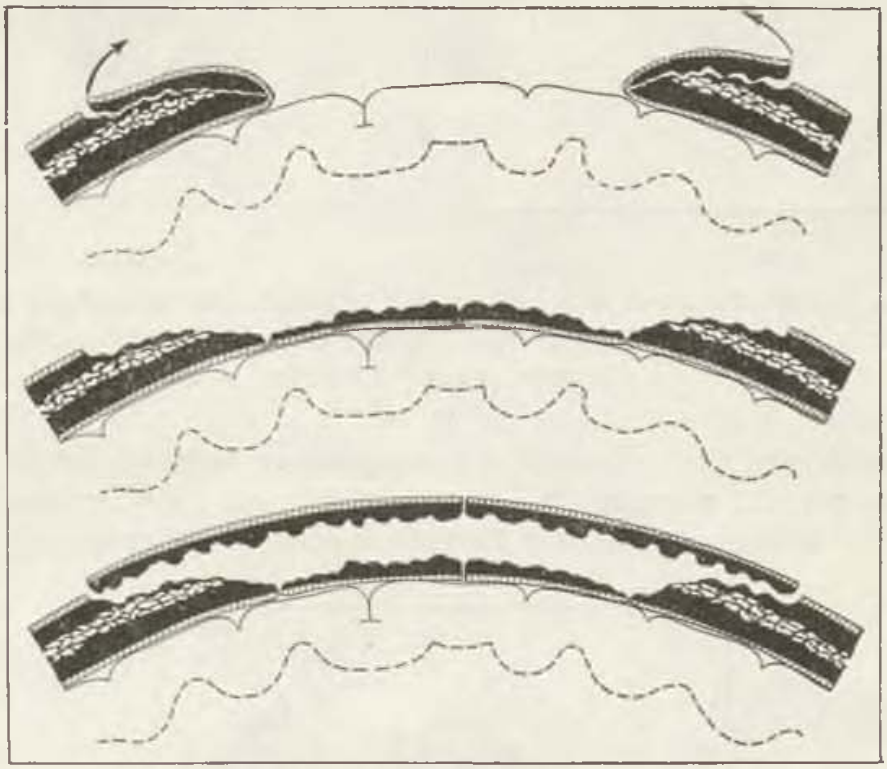

Abb. 5. Die Operation in Querschnittschema. Oben: die Schnittlinie des Perikranium-Corticalis-Lappen; in der Mitte: die Lappen in den Defekt gedreht; Unten: Die äussere Schicht mit einem biegsamen Periost-Corticalis-Transplantat aus der Tibia bedeckt.

Den ersten Schritt der Operation bildet die Vorbereitung der Empfangstelle des Transplantates. Wenn das Operationsgebiet narbig ist, so entfernen wir vor der Knochenoperation die Narben und ersetzen diesen Defekt entweder mit einer von der Umgebung entnommenen Stiellappen oder mit Hilfe der Rundstiellappenplastik. Im Falle kleiner Narben kann die lokale Stiellappenplastik auch zugleich mit der Knochentransplantation angewendet werden.

Der Hautschnitt wird nach dem von ÉRCZY empfohlenen Verfahren (Abb. 1) so angelegt, daß man zwei, mit der breiteren Seite zusammenhängende, trapezförmige Hautlappen umschneidet und darauf achtet, daß mit der gemeinsamen Schnittlinie der beiden Hautlappen möglichst auch die im Operationsbereich liegende, von der Verletzung oder früheren Operation stammende Narbe entfernt werde. Durch diesen Lappenschnitt wird der intakte Schädelknochen um den Defekt auf großem Gebiet zugänglich. Nach unser Erfahrung wird von

der feinen Operationsnarbe weder die Blutversorgung der Haut über dem Operationsgebiet noch die Vaskularisation der darunter liegenden Knochentransplantates beeinträchtigt.

Die folgende Phase der Operation bildet der Ersatz der Tabula interna, der unter Verwendung des um den Defekt anwesenden Periosts

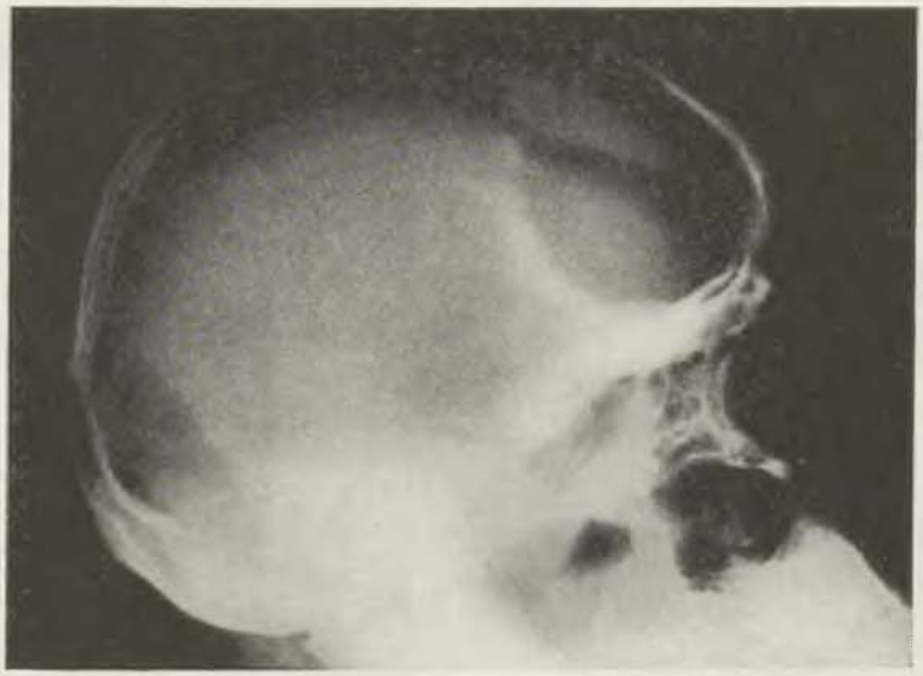

Abb. 6a. Die Röntgenaufnahmen vor der Operation.

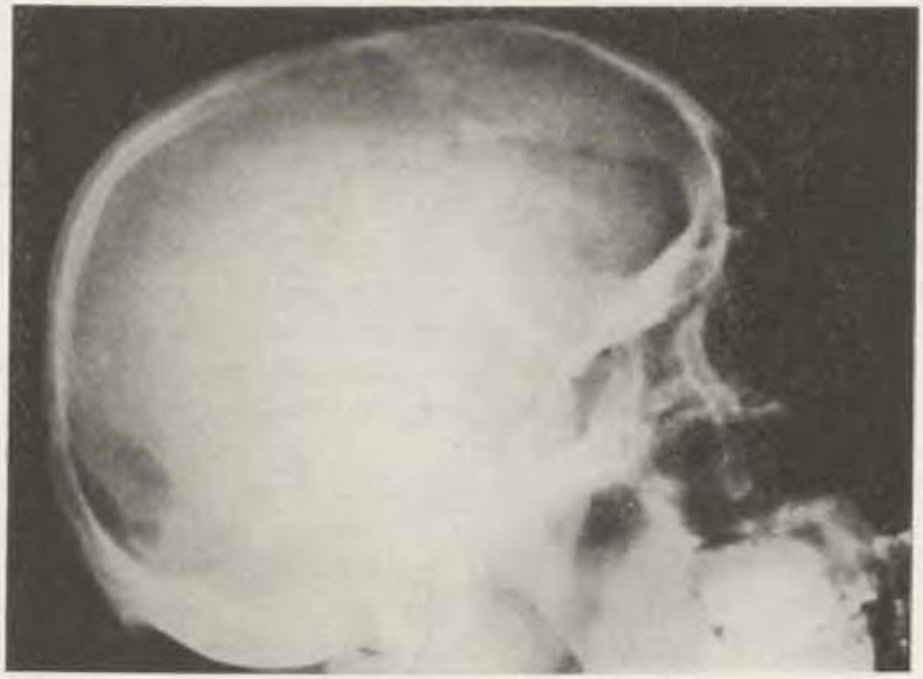

Abb. 6b. Die Röntgenaufnahmen ein Jahr nach der Operation.

und der Tabula externa erfolgt. Am intakten Perikranium umgrenzen wir vier- oder dreieckige, an dem Defektrand gestielte Lappen, deren Form und Größe so bemessen wird, dass sie — nach innen geklappt — den Defektbereich vollkommen zudecken. Die Tabula externa unter diesen Lappen wird mit einem feinen Tischlermeißel in Form kleiner, schuppenartiger Plättchen so abge-

Abb. 7.

Abb. 8.

Abb. 7. Mit alloplastischer Implantation erfolglos operierter Stirndefekt einige Monate nach der Ausstossung des Kunststoffes. — Abb. 8. Derselbe Kranke ein Jahr nach der autoplastischen Knochentransplantation.

meißelt, dass diese an dem Perikranium-Lappen haften bleiben (Abb. 2). Diese Periost-Corticalis-Lappen werden um 180° in den Defekt gewendet und ihr Periostsaum mit 6—0 Catgutnähten aneinander genäht (Abb. 3).

Nunmehr erfolgt der Ersatz der Tabula externa und des Perikraniums durch freie Transplantation eines biegbaren, modellierbaren, mit Periost versehenen Knochenstücks, welches wir von der Facies tibialis tibiae gewinnen. Es wird hier nach Umschneiden des Periosts die Corticalis mit einem, im Winkel von 45° zur Knochenoberfläche gehaltenen Tischlermeißel so abgetrennt, daß der Meißelstiel nach jeweils 2—3 Hammerschlägen gehoben wird, damit die so abgetrennten, 1—2 mm dicke Knochenplatten mit dem Periost in Verbindung bleiben. Das so herausgemeißelte Transplantat biegt sich bogenförming aufwärts und muß, um brauchbar zu sein, zurückgebogen werden. Die nur locker haftenden Knochensplitter entfernen wir.

Der so vorbereitete, biegbare Periost-Corticalis-Lappen wird auf den bereits mit zwei Schichten gedeckten Defekt gelegt und der Periostsaum an das Peri-

kranium genäht (Abb. 4). Abb. 5 veranschaulicht den Verlauf der Operation an einem Querschnittschema. Muß ein breiter Defekt ersetzt werden, so durchtrennen wir das von einer Tibia entnommene Transplantat in der Mitte quer in zwei Teile, die wir nebeneinander legen, wonach wir ihr Periost mit feinen Catgut-Einzelnähten vernähen und so auf die Empfängerstelle legen.

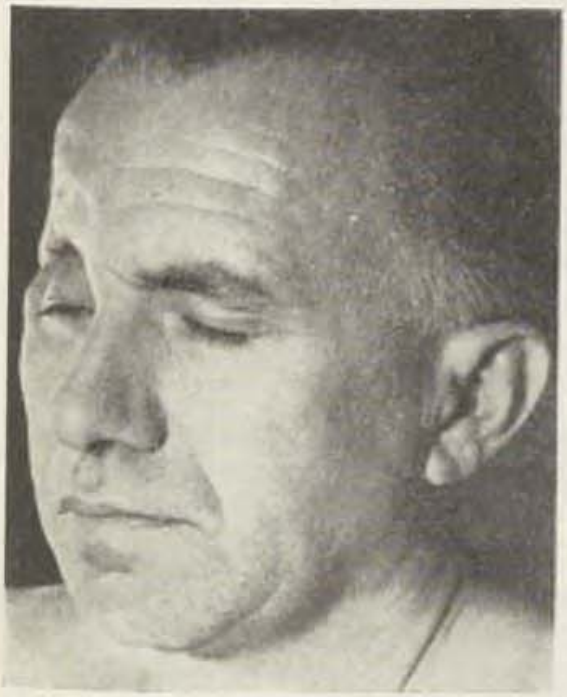

Abb. 9.

Abb. 10.

Abb. 9. Mehrmal erfolglos operierter Patient mit einem ausgedehnten, durch Autounfall verursachten Schädelknochendefekt. Zuerst wurde Rippenknorpel implantiert, der zum beträchtlichen Teil resorbiert wurde. Anschliessend pflanzte man Kunststoff ein, der ausgestossen wurde. — Abb. 10. Der Patient 18 Monate nach der Knochenautotransplantation, welche 2 Jahre nach der Ausstossung des alloplastischen Materials ausgeführt wurde.

Von einer Tibia kann ein etwa 20 cm langes und 4—5 cm breites Periost-Corticalis-Transplantat abgemeißelt und damit ein etwa 60—80 cm^2 großer Schädelknochendefekt ersetzt werden. Wenn der Defekt noch größer ist, so können beide Tibiaoberflächen in Anspruch genommen werden. Das kommt aber sehr selten vor; in der eigenen Praxis war dies nur ein einziges Mal nötig, als wir den Defekt des beinahe ganzen Os frontale ersetzen müßten.

Nach dem vorstehend beschriebenen Verfahren haben wir in den letzten 10 Jahren 28 Kranke operiert. In 23 Fällen bot sich uns Gelegenheit, die Operierten 12 Monate, mehrere auch 3—4 Jahre nach der Operation zu kontrollieren. Die Ergebnisse waren durchaus zufriedenstellend. Eine Infektion ist niemals aufgetreten, die Ausstoßung des Transplantates war in keinem einzigen Fall zu beobachten, sämtliche Kranken genasen ohne jeden Zwischenfall. Lediglich in einem Fall entstand postoperativ ein Hämatom, das wir absaugten, wonach

die weitere Wundheilung ungestört vonstatten ging. Nach durchschnittlich 3 Monate war das Transplantat stets fest eingeheilt, und der Tastbefund stimmte völlig mit dem der benachbarten Schädelabschnitte überein. Der implantierte Knochen hat in sämtlichen Fällen vollkommen die Form der Schädelwölbung angenommen, so daß auch das ästhetische Resultat einwandfrei war. Die Röntgenaufnahmen haben eine progredierende Ossifikazion an der Stelle des Transplantates gezeigt, die ungefähr ein Jahr nach der Operation abgeschlossen zu sein schien (Abb. 6a, b).

Im Entnahmebereich trat nur in 2 Fällen vorübergehende Empfindlichkeit und eine geringe Schwellung der operierten Extremität zutage, die nach weitere 3 Monate verschwand. Die anderen Patienten vermochten 1—1 ½ Monate nach der Operation bereits beschwerdefrei zu gehen und mehrere konnten sich nach der verschriebenen Schonzeit (6 Monate) wieder sportlich betätigen.

Mit den Abbildungen 7—10 möchten wir zwei charakteristische Fälle demonstrieren.

ZUSAMMENFASSUNG

Verfasser erörtert den eigenen Standpunkt im Zusammenhang mit dem Ersatz von Schädelknochendefekten und beschreibt das seinerseits angewendete Operationsverfahren. Dieses besteht im wesentlichen darin, daß sämtliche Schädelknochenschichten autoplastisch mit biegbaren Periost-Corticalis-Transplantaten ersetzt werden: die Innenschicht wird durch Eindrehen von Lappen ausgebildet, die vom Perikranium und der Lamina externa in der Umgebung des Defektes herausgeschnitten werden, während zum Ersatz der Außenschicht ein biegbares Periost-Corticalis-Transplantat aus der Tibia transplantiert wird. In sämtlichen nach dieser Methode operierten Fällen ist glatte Heilung eingetreten, und die Spätergebnisse waren sowohl in funktioneller wie in ästhetischer Hinsicht einwandfrei.

SUMMARY

Our Method of Repairing Skull Defects

J. Zoltán

The author gives his opinion on the question of repairing skull defects and describes his own surgical procedure. His method consists basically in replacing all layers of the cranium by a pliable free graft of periosteum with a layer of compact bone. The inner layer is formed from a flap consisting of pericranium plus the outer table from the surroundings of the defect. The outer layer is formed from a free graft of periosteum with a thin layer of compact bone from the tibia. Where this method of operation was used healing proceeded without complications in all patients and the late functional and cosmetic results were excellent.

RÉSUMÉ

Notre méthode de travail pour restituer des défectuosités des os crâniens

J. Zoltán

L'auteur explique sa conception en ce qui concerne les plasties des défectuosités des os crâniens et décrit la méthode opératoire employée par lui-même. Le principe de cette méthode consiste dans le remplacement de toutes les couches de l'os crânien

à l'aide d'un greffon flexible du périoste avec la lamelle corticale: la couche interne est formée par les lambeaux excisés du périoste et de la couche extérieure aux environs de la lésion, tandis que, pour remplacer les couches externes, on se sert d'un greffon flexible du périoste avec la lamelle corticale de l'os du tibia. Chez tous les malades, opérés de la façon indiquée, la guérison progressa sans troubles et les résultats étaient satisfaisants, aussi bien du point de vue fonctionnel qu'esthétique.

RESUMEN

Nuestro procedimiento en la sustitución de los defectos de los huestos craneanos

J. Zoltán

En este papel el autor presenta su punto de vista referente a la cuestión de la sustitución de los defectos de los huesos craneanos y describe el procedimiento operatorio que usa. Este procedimiento consiste en la sustitución de todas las capas del hueso craneano por el transplante plástico del periostio con lámina cortical: la capa interior se constituye por los lóbulos extirpados del pericráneo y de la lámina externa en la vecindad del defecto, mientras que para sustituir la capa exterior se emplea el transplante elástico del periostio con la lámina cortical de la tibia. En todos los enfermos operados según el dicho procedimiento la cura transcurría sin estorbos y los resultados tardíos fueron excelentes desde el punto de vista de la función y estética.

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NOTES ON CAMPYLODACTYLIA
(second communication)

L. BAŘINKA

In the first communication on campylodactylia, the author discussed the typical signs of this disease, its classification and the resultant principles of prevention for the doctor, in particular the school doctor, who most frequently comes across this disease in its early stages.

In this second paper attention is drawn to certain diseases and deformities which are sometimes found together with campylodactylia. The unsuitability

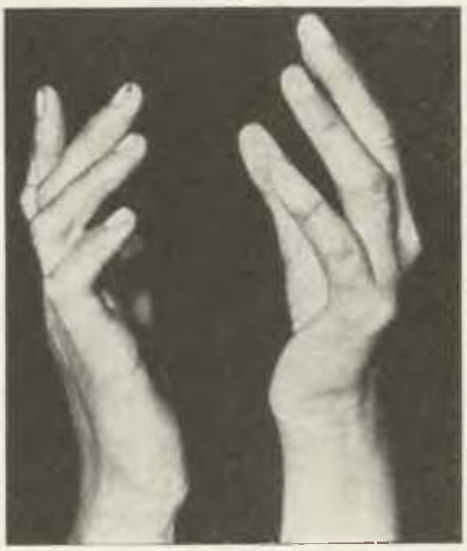

Fig. 1a.

of some operations which traumatize the patient and lower his fitness for work or permanently disable him is again pointed out.

The classification of campylodactylia in an early and a delayed type, with a simple or complex form, was regarded as suitable for clinical practice and proved completely satisfactory. The author's view that campylodactylia is a congenital condition with a very high familial incidence is also borne out by the increase in his series of patients, which has grown threefold since the evaluation published in the first communication.

The author found a familial incidence in the first or second generation in almost 50% of this patients. It is thus not rare for this disease to be manifested in three generations, with progressive increase in the functional and anatomical signs. These anamnestic findings are for us a help in preventing further worsening of the disease by finding suitable employment for those affected.

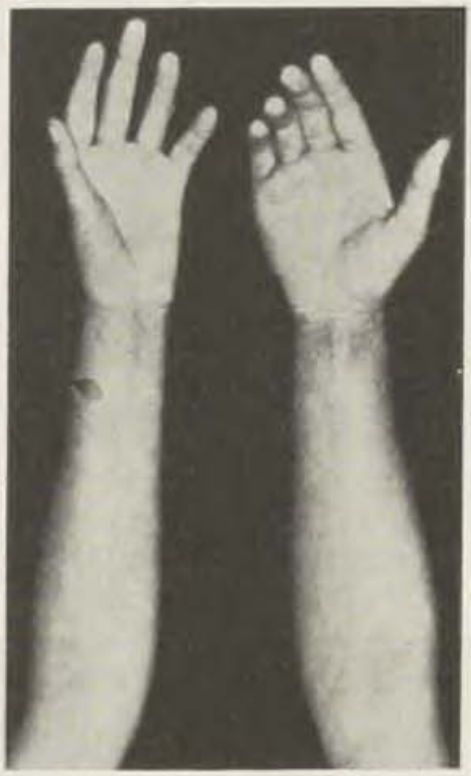

Fig. 1b.

Fig. 1c.

Hitherto campylodactylia was regarded as a simple deformity of the hand, with typical signs which permitted it to be diagnosed without any great difficulty. Certain new diseases, deformities and anamnestic data found together

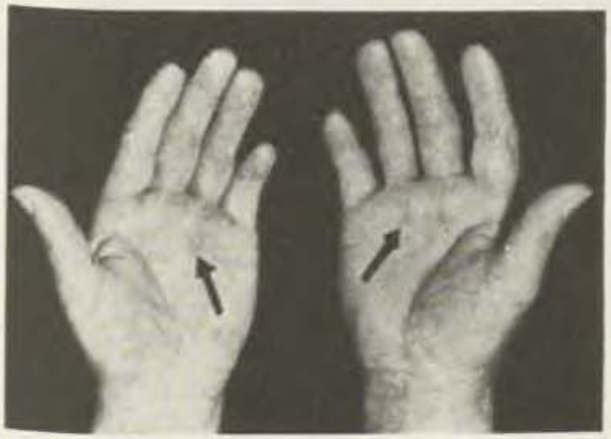

Fig. 2a.

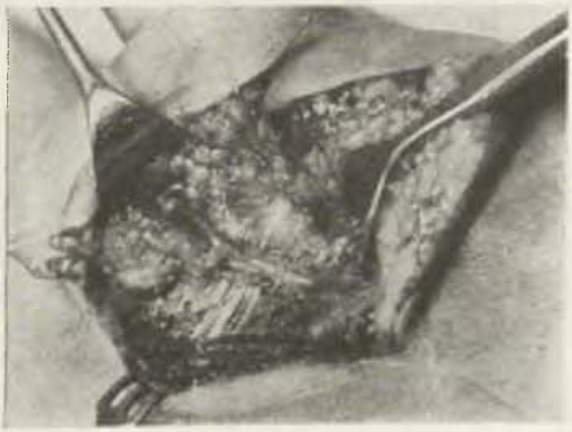

Fig. 2b.

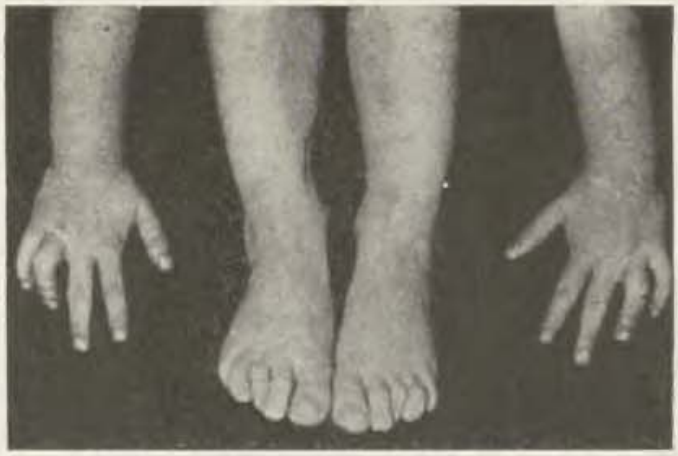

Fig. 3a.

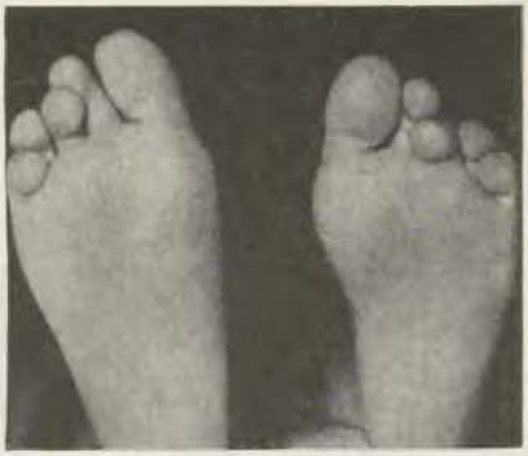

Fig. 3b.

with campylodactylia, appear to indicate, however, that it is related to certain general conditions. It is not known, for example, how much justification there is for Landouzy's view that a frequent incidence of arthritis in several generations can lead to campylodactylia. The author's finding of arthritis in the history of more than 50% of his patients confirm this hypothesis, or at least draw attention to one of the possible aetiological factors of campylodactylia. Investigations are therefore being carried out in this direction.

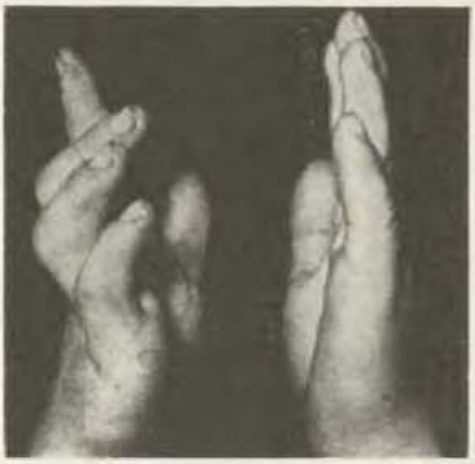

Fig. 4a.

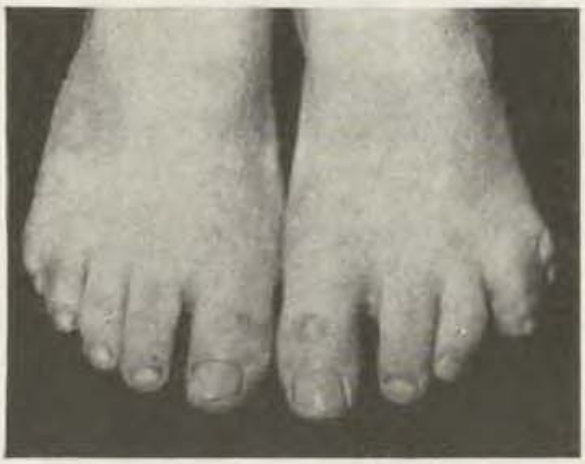

Fig. 4b.

Increasing attention is being paid to disorders of the neurovascular apparatus of the hand followed by changes in its connective tissue component. The prevalent view is that changes in the vascularization of the limbs (particularly in the region of the ulnar artery) produce degenerative changes in the connective tissue of the hand, whose maximum manifestations are found in the region of the first interphalangeal joint of the second to the fifth finger, while the thumb is never affected. Because of the complexity of this question, it will not be discussed in detail in this second communication; attention will only be drawn to some conditions which occur together with campylodactylia.

In the first patient, aged 28, who had the complex type of campylodactylia with a familial incidence, and syringomyelia, localized predominantly on the left side, was found (Fig. 1 a, b, c). Typical campylodactylia findings in the hands ,accompanied hypotrophic changes throughout the whole of the left of the body, which were most marked in the lower and upper limb. The radiogram of the

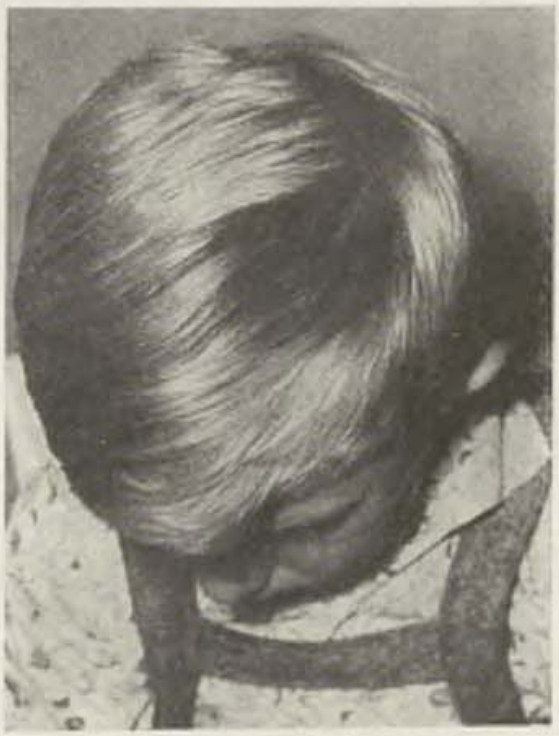

Fig. 4c.

spine showed evidence of intraspinal expansion in the region of the cervical spine and the upper section of the thoracic spine. Pronounced reflexes in the L_2—S_2 range were found in the lower limb, with pyramidal manifestations. A disturbance conforming to syringomyelitic dissociation was present in the left lower limb and the adjoining side of the plexus. The first signs of campylo-

Fig. 5a.

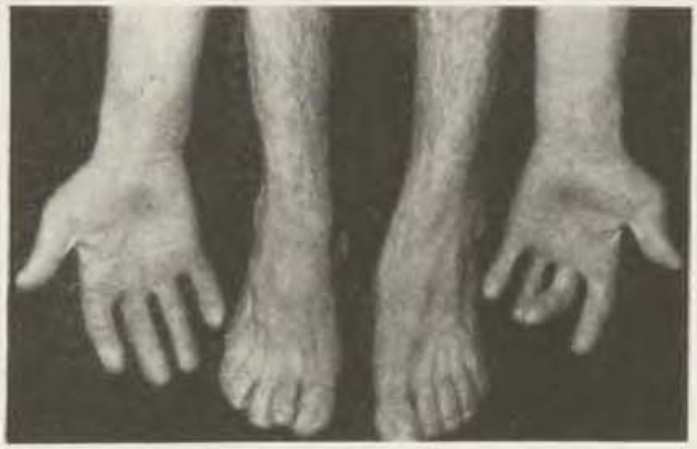

Fig. 5b.

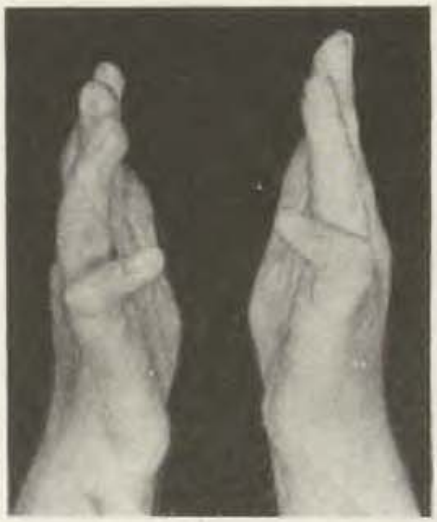

Fig. 6a.

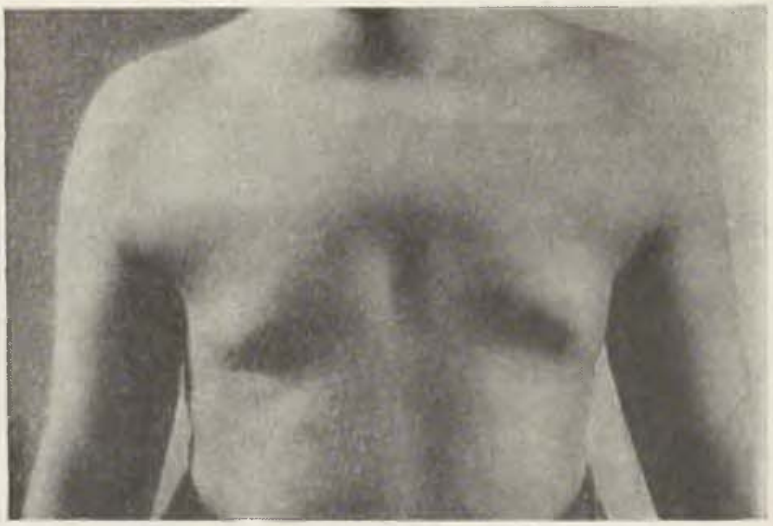

Fig. 6b.

Fig. 6c.

dactylia appeared at the age of 15 and hypotrophic changes indicative of syringomyelia at the age of 21. The neurological signs were at first evaluated as a forme fruste of Little's disease, with incipient Dupuytren's contracture of both hands, and it was with this diagnosis that the patient was sent to the Clinic of Plastic Surgery. After evaluating the findings, causal treatment was instituted.

In two patients, Dupuytren's contracture of both hands was encountered for the first time together with campylodactylia (Fig. 2 a, b). As far as the author

is aware, the world literature contains no other reference to the coincidence of these two diseases. The finding simply confirms that the connective tissue apparatus of the hand is involved on a large scale and not only in the region of the first interphalangeal joint, as is the case with all forms of simple campylodactylia. The first signs of campylodactylia appeared at about the age of 20 and

Fig. 7a.

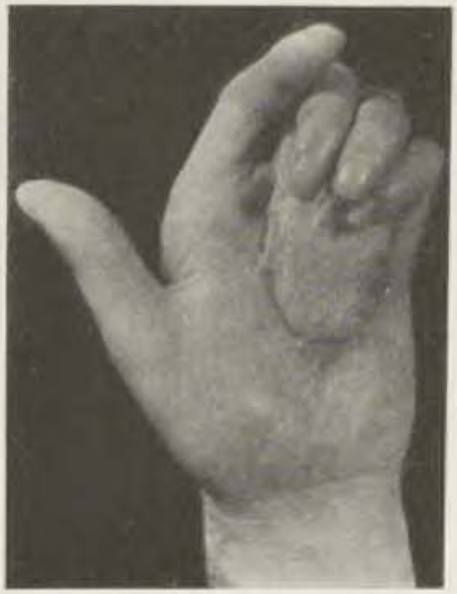

Fig. 7b.

the thickening of the palmar fascia typical of Dupuytren's contracture was observed by the patient at the age of 49. It was decided not to operate on the Dupuytren's contracture for the time being.

A congenital disorder or deformity of the lower limbs, together with campylodactylia, was encountered three times in these series. One female patient (Fig. 3 a, b) had contracture of the third to the fifth toes, while another (Fig. 4 a, b) had biliateral syndactyly, with supernumerary little toes, which had already been operated on. A pigmented area in the pilose portion of the head was also included in the complex of congenital deformities (Fig. 4 c). This patient had the simple form of the early type of campylodactylia of the right hand. In another patient in this group, campylodactylia was associated with pedes equinovari, which had been operated on at the age of two (Fig. 5 a, b). A further patient (Fig. 6 a, b, c,) had the familial type of campylodactylia, together with infundibuliform deformity of the thorax and Darwin's auricular tubercles.

Patients with campylodactylia are continually sent to the author's clinic with a wrong diagnosis. Their condition is usually confused with Dupuytren's contracture or with contracture of the tendons or skin of the fingers. From the aspect of the differential diagnosis it should be emphasized that the prominent bands on the flexor surface of the fingers and palm characteristic of Dupuytren's contracture are not found in campylodactylia. Attention is drawn to the danger of confusing the two conditions for the surgeon who undertakes the operation of unrecognized campylodactylia, in which all radical operations are

contraindicated. Even the apparent inadequacy of the skin on the volar surface of the contracted fingers cannot be resolved by transplantation of a skin flap. This complicated operation does not correspond to the severe degree of involvement of the hand and often results in extreme, disabling deformity (Fig. 7 a, b). In another case campylodactylia was diagnosed as congenital contracture

Fig. 8.

of the third to fifth fingers of both hands, although it was actually the simple form of the early type of campylodactylia. Operation resulted in necrosis of the distal phalanx of the fifth finger of the right hand and in further contracture of the fingers affected (Fig. 8).

In another patient, a wrong diagnosis of contracture of the tendons of the fourth and fifth fingers of both hands led the surgeon to attempt prolongation of the deep flexor at the wrist, as recommended by some authors for this condition (Oldfield). Operation on the third finger of the left hand in another

Fig. 9a.

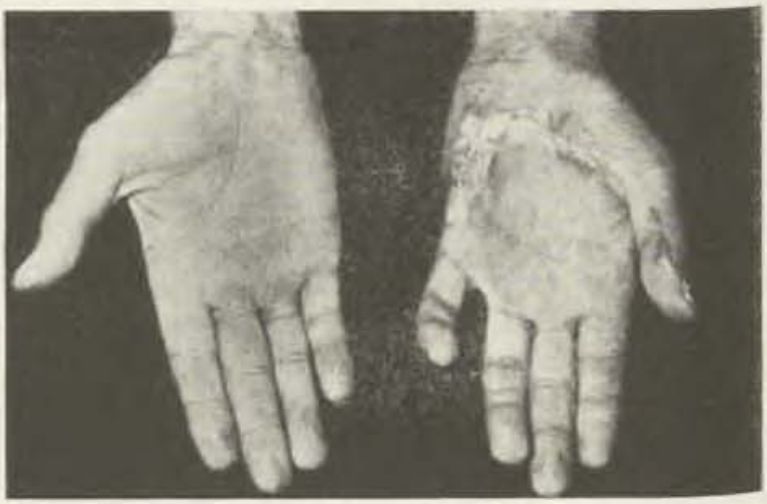

Fig. 9b.

hospital was unsuccessful, however; on the contrary, contracture increased and the patient was permanently disabled still further (Fig. 5b).

Injuries to campylodactylic hands result in deterioration of the state of the hand in general and healing is difficult and protracted. One of the author's patients (Fig. 9 a, b) suffered from superficial, tangential injury of the skin in the region of the thenar and hypothenar of the left hand, which took an abnormally long time to heal. After healing with a hypertrophic scar, which was more pronounced in the region of the hypothenar, contracture of the fingers increased and the hand acquired a saucer-like form, with limited movement of the fingers and spontaneous pain. The patient was unable to continue his work as a carpenter and had to be given other employment.

CONCLUSION

In these few cases the author has attempted to show the seriousness of campylodactylia, with all the consequences of wrong treatment and the complicated character of the healing of injuries to the hand. In cases in which several other congenital deformities occur together with campylodactylia, the author wishes to draw attention to the probability of a more deep-seated developmental disturbance and thus indicates further lines of research on this condition.

SUMMARY

In the first communication on campylodactylia the typical signs and classification were described and attention was drawn to principles of prevention. The second paper enumerates certain conditions which can occur together with campylodactylia. Several cases are described, in which unsuitable surgical treatment traumatized the patient and disabled him. A familial incidence of campylodactylia back to the first or second generation was found in 50% of the author's series of patients. An incidence of arthritis was also found in 50% of their families; this to some extent vindicates the view of Landouzy, whose findings were similar. Congenital deformities of the toes, syndactyly and polydactyly in campylodactylia was found together with syringomyelia, in another together with Dupuytren's contracture and in the last patient it was associated with an infundibuliform thorax and Darwin's auricular tubercles. In cases in which several other congenital deformities occur together with campylodactylia, attention is drawn to the probability of a deeper general developmental disturbance, thus indicating the lines of further scientific research on this disease.

RÉSUMÉ

Contribution au sujet des campylodactylies (Deuxième communication)

L. Bařinka

Dans notre première communication au sujet des campylodactylies, nous avons décrit les symptômes typiques et la classification, puis nous avons mentionné les principes de la prophylaxie. Notre deuxième communication s'occupe de certaines maladies qui peuvent se manifester simultanément avec les campylodactylies. On présente certains

cas dans lesquels un traitement chirurgical mal approprié avait eu des effets défavorables pour les malades et diminué leur aptitude professionelle. La fréquence familiale de la campylodactylie dans la première et la deuxième génération a pu être constatée dans 50% de cas du groupe des malades en question. C'est également dans 50% des cas que l'on ait pu constater la présence d'une arthrite dans les familles et ce fait justifie, dans une certaine mésure, l'opinion de Landouzy qui a observé des données analogues. On démontre, chez les malades atteints de campylodactylie, des déformations congénitales des doigts des pieds, de la syndactylie et de la polydactylie. Dans un des cas de campylodactylie, on constate également de la syringomyélie, dans un autre cas une contracture de Dupuytren et chez le dernier malade, cette malformation se trouve accompagnée d'un thorax infundibiliforme et de tubercules de Darwin. Dans les cas où on observe plusieurs malformations congénitales simultanées qui accompagnent la campylodactylie, on attire l'attention sur la possibilité de l'existence de troubles évolutifs plus profonds, tout en indiquent le chemin que doivent emprunter les recherches scientifiques futures consacrées à ce problème.

ZUSAMMENFASSUNG

Ein Beitrag zu den Kampylodaktylien (zweite Mitteilung)

L. Bařinka

Die erste Mitteilung des Verfassers über Kampylodaktylien führte typische Anzeichen und eine Einteilung der Krankheitsformen an und wies auf die Grundsätze einer Prophylaxe hin. In der zweiten Mitteilung werden einige Erkrankungen, die gleichzeitig mit Kampylodaktylien auftreten konnen, angeführt. Es werden einige Fälle mit unangebrachter chirurgischer Behandlung beschrieben, wobei die letztere die Patienten schädigte und deren Arbeitsfähigkeit herabsetzte. Ein familiäres Auftreten der Kampylodaktylie in der ersten oder zweiten Generation wurde in der vorliegenden Patientengruppe in 50 Prozent festgestellt. Ebenfalls in 50 Prozent wurde familiäres Auftreten von Arthritismus gefunden und dieser Umstand berechtigt bis zu einem gewissen Grade die Ansichten Landouzys, der über ähnliche Befunde berichtet. Bei Patienten mit Kampylodaktylie werden kongenitale Zehendeformationen, Syndaktylie und Polydaktylie angeführt. In einem Fall traten Kampylodaktylie und Syringomyelie gemeinsam auf, in einem anderen Fall Kampylodaktylie und Dupuytrensche Kontraktur und beim letzten Patienten war Kampylodaktylie mit infundibuliformen Brustkorb und Darwinschen Ohrmuscheldeformationen verbunden. Bei gleichzeitigem Auftreten mehrerer kongenitaler Störungen zusammen mit Kampylodaktylie wird auf das wahrscheinliche Vorliegen einer tieferen Entwicklungsstörung hingewiesen und so die Richtung der weiteren wissenschaftlichen Erforschung dieser Krankheit angedeutet.

RESUMEN

Contribución a campilodactilias (2.ª Parte)

L. Bařinka

En la primera parte del artículo informativo sobre las campilodactilias se describieron los síntomas típicos, la división y la cuestión de la profilaxis. En la segunda parte se presentan algunas enfermedades que pueden ocurrir simultáneamente con campilodactilias. Se muestran algunos casos tratados de manera inadecuada por operación que causó daño a los pacientes reduciendo su capacidad de trabajar. La existencia familiar

de campilodactilia hasta la primera o segunda generación en el grupo actual de los enfermos se ha confirmado en el 50%. Asimismo en el 50% del grupo se averiguó la existencia de artritis en las familias y este hecho hasta cierto punto justifica el concepto de Landouzy quien ha confirmado parecidos hallazgos. En los pacientes con campilodactilia se hallan deformaciones congénitas de los dedos del pie, syndactilias y polidactilias. En un caso con campilodactilia existía siringomielia, en un otro la contractura de Dupuytren y en el último paciente este defecto estaba acompañado de un tórax infundibuliforme y de protuberancias de los lóbulos auriculares de Darwin. En los casos de algunos defectos congénitos ocurriendo simultáneamente con campilodactilia se llama la atención a las perturbaciones generales más profundas de desarrollo y se indicande tal modo futuras perspectivas para la investigación científica de esta enfermedad.

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BOOKS

A. A. Limberg: **The Planning of Local Plastic Operations.** 595 pages, 888 ill. Medgiz, Leningrad 1963.

The Nestor of Soviet plastic surgeons presents a greatly enlarged edition of his original monograph of 1946, on the mathematical basis of local plasty on the surface of the human body. At that time it produced a great stir and many doubts on the possibility of solving the problem of tissue transfer in local skin plasty by mathematical analysis. Today, it can be seen that the author was far ahead of his time in the mathematical treatment of the problem. Since then the mathematical approach to problems in natural science and medicine has become a matter of course and also the method of scientific assessment of the results of treatment. The first objection to the complicated nature and difficult approach of mathematical methods led the author to demonstrate the necessity and advantages of the mathematical planning of incisions and tissue transfer on the basis of his life experience on a very large clinical material and from examples taken from the literature. In his new monograph, which is far more comprehensive than the original work, the author offers a method of forecasting all changes that can occur on the lifting of tissue from its bed, by the use of mathematical analysis. Today no experienced plastic surgeon would doubt the value of the principles whose mathematical basis was discovered by Prof. Limberg. The entire Soviet school of plastic surgeons today uses mathematical calculations in planning their

operations and the number of adherents to this method is continually increasing.

The book is divided into 10 comprehensive chapters dealing with all types of local plasty from the theoretical and practical standpoint. The individual types of operation are described in objective sequence with geometrical diagrams of the operation stages and the demonstration of the changes on simple and complicated models with instructions on transferring the planned incisions to the operation field. All are documented with practical examples from the author's own experience and from the literature, with exact calculations and many tables.

The mathematical characteristics of the individual plastic figures and the changes in their basic magnitudes in the course of the operation are given in detail. Mathematical treatment is also applied to spherical formations and not only to tissue transfer in one level. Limberg, the master of local plasty, demonstrates with exact calculations that it is, to a certain extent, possible to foresee the degree of stretch and shrinkage of the skin which was the main objection of the opponents of the mathematical planning of operations.

Examples documenting the individual procedures exhaust practically all the tasks of the plastic surgeon in relation to local plasty, or a combination of plasty with free skin transplantation or with a prepared tubed flap from distant site.

It is the great contribution of the work of Limberg that he elaborated local plasty theoretically and at the same time showed the possibilities of local plasty on practical examples where free plasty or flap skin transplantation had previously been used. The surprising examples from his own work show the results attainable by this very often much simpler procedure. This book is in fact not only the mathematical exposition of local plasty, but a fine, comprehensive atlas of plastic surgery, documented by many illustrations. The reader who would be discouraged by the intricate mathematical calculations of the complicated figures will find excellent examples of local plasty not equalled by many other monographs.

The many ways of using Z-plasty are given in an masterly fashion, including its entire history from its appearance in modern surgery in the monograph of Shimanovsky, a Russian author, in 1865, in his first book on operations on the surface of the human body. Shimanovsky was the first surgeon who thought about the geometrical design of incisions involved in local plasty. Limberg, an excellent authority on the history of world plastic surgery, with great enthusiasm characteristic of him, cites the opinions of leading contemporary figures in plastic surgery on the significance and importance of a thorough study of the theory and laws of local plasty.

Although Limberg's book remains a textbook on the use of local plasty, giving a whole series of suitable operative procedures, the aim of the author's work was to direct plastic surgery towards a theoretical basis providing a mathematical analysis of all known types of local plasty.

This is an outstanding book, based on the life-experience of a highly informed surgeon who is an enthusiast for the application of mathematical methods in surgery. It is the foreshadowing of the entry of the mathematical era in surgery.

Prof. V. Karfík, M.D., M. Fára, M.D.