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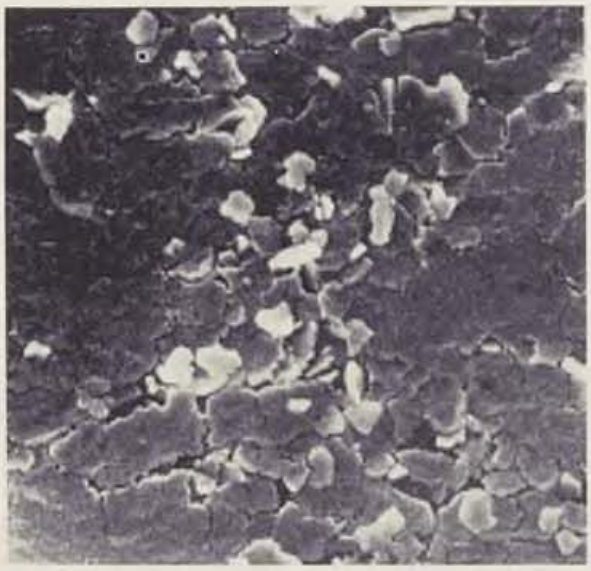

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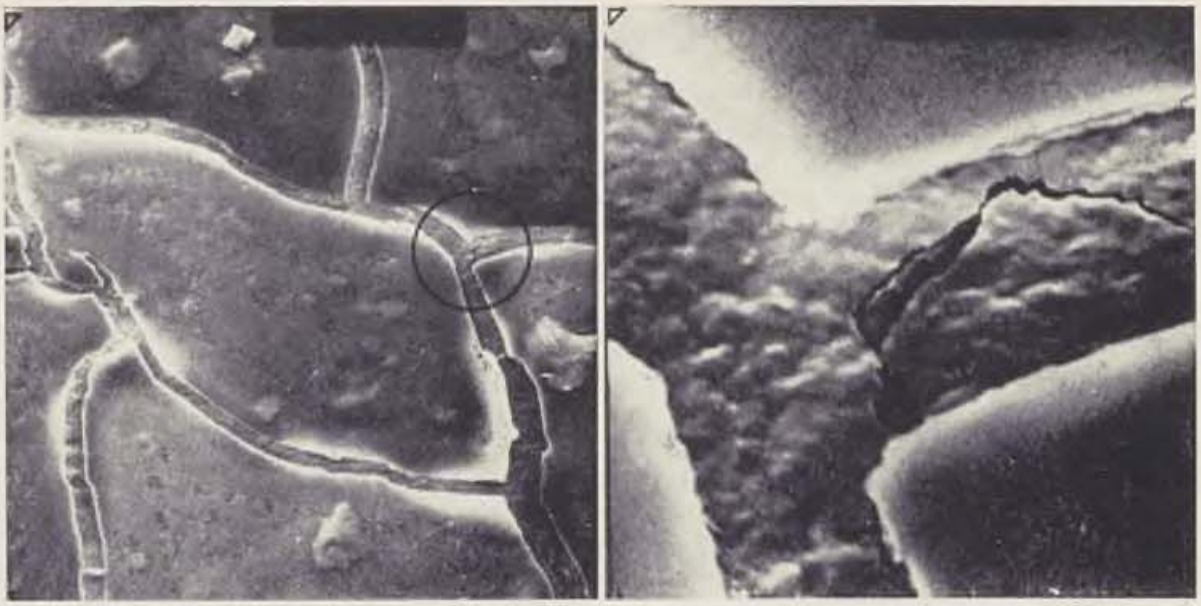

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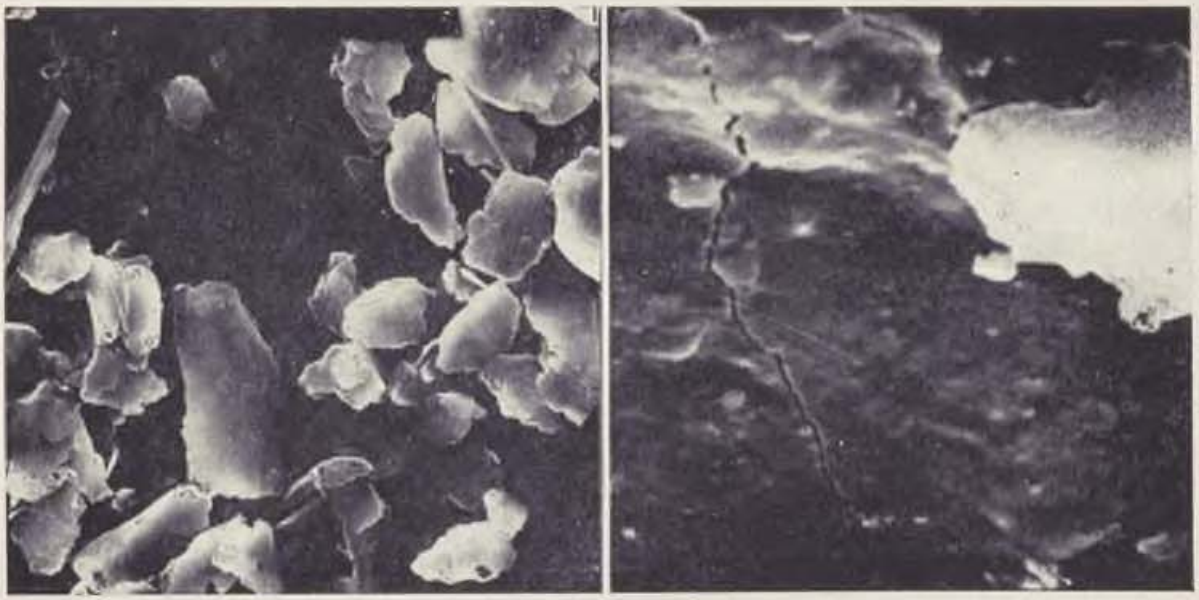

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Section of Medicine of the Humboldt-University Berlin (GDR)
Clinic for Face and Neck Surgery
Director Prof. Dr. med. habil. Dr. H. Mennig

THE DEMARCATION OF THE FOREIGN BODY (POLYMERS)

E. ROGGENDORF

The formation of a moistening layer of fluid

As early as 1949 Le Veen and Barberio described a substance between the inner wall of the foreign body capsule and a Teflon implant, which they took to be protein. Sporadic accumulations of fluid inside individual foreign body capsules were frequently described thereafter (Contzen 1963, Andrews 1969, et al.).

In the course of several investigations by Buntrock and Roggendorf quantities of fluid were consistently to be found following the extraction of more than 500 implants from their capsules. For the most part these fluids took the form of extraordinarily thin coverings on the surfaces of the implants, which dried immediately upon exposure to the air. Likewise the inner surfaces of all the foreign body capsules revealed a moist glossiness. The implants consisted of several types of silicon rubber, a polyamide and a polyester, which were placed for up to one year in the subcutis and muscles of dogs and rats.

The bonding of body substances to the surface of the polymere

During extensive tests for biostability [Roggendorf (1)] the surfaces of the above mentioned polymeres were examined amongst other things under a scanning electron microscope [Roggendorf (2)].[1])

The implants with brightly shining surfaces, measuring 0.5×3×3 cm, were inserted for one year in the subcutis and muscles of dogs. Following their removal they at once were washed in distilled water and dried to constant

[1]) The scanning electron microscope examinations were carried out jointly with the Experimental Physics I Department of the Faculty of Physics of the Technical University Dresden and the Central Institute for Electron Physics of the GDR Academy of Sciences.

weight. Examinations were carried out on the material before insertion, on the implants after removal from the organism, and on samples which were stored for the one year period of the experiment in protective gas (Argon) at +4 °C in complete darkness.

Control photographs taken at the time of insertion revealed small fissures over the surfaces of the material, as shown in Fig. 1. When the implants were removed from the organism after one year they were found to be covered with layers; in the case of the silicon rubber implants these layers were within limited areas fragmented (Figs. 2 and 3), in general, however, they formed an intact whole (Fig. 4). These layers were identified as protein and fat by examining the thickest of the layers (Fig. 2) with an ATR infra-red spectrometer (Roggendorf, Reklat and Kunath).

Subsequent examinations on one hot vulcanised silicone rubber brought similar results. Here the polymers were deposited in ^{75}Se-selenomethionine labelled rabbit's blood serum, removed after one minute, and their surface subjected to various types of treatment. They show similiar pictures.[2])

For instance, when the implants were dried, their surfaces split into large fragments (Fig. 5). Some fissures showed a division of the adsorbed substances into primary and secondary layers (Fig. 6). The secondary layer was to a large extent dissolved following immersion in running water (one minute), drying and boiling in a neutral soap solution (30 minutes) (Fig. 7), whereas the primary layer stuck fast to the surface of the polymere and was only recognisable by small fissures (Fig. 8). Attempts to dissolve the layer with a 5-M solution of NaCl, an 8-M solution of urea, and a 3% solution of dodecylsulphate Na showed very little difference in the amount of impulse intensity.

The formation of a foreign body capsule

If the process of healing over occurs undisturbed, the then implant will be isolated from the organism by granulation tissue and the formation of a capsule of multi-cellular connective tissue which is initially fluffed. A few months later, as the cellular infiltration decreases and the amount of collagenic connective tissue increases, so the connective tissue capsule becomes thinner and tightly enclosed around the implant. In the area of pointed implant projections, however, the cellular infiltration continues over a longer period.

According to Alexander and Horning (1959), Danishefsky et al. (1959), and Ott (1970), a concentric three-stage stratification may be observed on the fibrous capsule wall between the third and sixth month, consisting of:

an external pericapsular layer of collagenic fibres with relatively small blood vessels, fibroblasts, and individual mast-cells,

---

2) The examinations using ^{75}Se-selenomethionine were carried out in conjunction with Diplom Physiker Gunthermann of the Cancer Clinic of the Section of Medicine (Charité) of the Humboldt-University Berlin (Director: Prof. Dr. med. habil. K.-H. Riesbeck).

an intermediate layer of closely packed collagenic bundles of fibres parallel to the surface of the implants, with stretched fibroblasts, the majority of the capillaries between the fibres already missing, and with small groups of newer fibroblasts, and

an internal layer comprising fusiform, spherical and irregularly formed cells similar to activated fibroblasts near to the inner surface.

DISCUSSION

The adsorption of proteins on polymere surfaces on contact with blood is well-known (Leininger, Mirkovitch, Beck, Andrus and Kolff (1964), Vroman (1964) among others. According to Falb and Grode (1971) this process occurs on all polymere surfaces which are exposed to blood.

Deposits in the form of layers also were found on brightly shining polymere surfaces after insertion in the subcutis and muscles of dogs as well as in rabbit's blood serum [Roggendorf (2)]. The thickness of the layer depended on the type of material inserted and on the method of dissolution following removal. The identification of the layers as protein or amino-acids and fat was carried out using an infra-red spectrometer and radio-active labelling.

On dissolution the substances adsorbed on the polymere surfaces split up into secondary layers, which were relatively easy to dissolve, and primary layers, which were prone to cling to the polymere.

The above findings show that similar or identical adsorption of protein as in blood also occurs on polymere surfaces which are surrounded by a foreign body capsule for one year inside the subcutis or muscles. And this the more as a film of fluid — in exceptional cases even a relatively thick layer of fluid — is formed between every implant and its surrounding capsule. Thus the isolation of the implant if not incorporated or attacked by cells occurs in three stages:

1. the formation of a moistening layer of fluid,
2. the bonding of body substances to the polymere surface and
3. as regards the cells, the formation of granulation tissue and a connective foreign body capsule.

SUMMARY

According to previous concepts, implants of polymers are isolated from the body by granulation tissue and the formation of a foreign body capsule. Both layers of fluid which generally occur between a foreign body capsule and an implant as well as stratifications visible on all implant surfaces examined under a scanning electron microscope show that the adsorption of protein observed on contact with blood also takes place in the case of subcutaneous and intramuscular implants. Therefore the isolation of the implant if not incorporated or attacked by cells can be split up into three stages:

1. the formation of a moistening layer of fluid
2. the bonding of body substances to the surface of the polymere, and
3. the formation of a foreign body capsule.

RÉSUMÉ

Démarcation du corps étranger (des polymères)

E. Roggendorf

Selon les conceptions antérieures, les implantations des polymères sont isolées du corps par un tissu granuleux; ensuite se produit la capsule des corps étrangers. — Les couches du liquide se formant en règle générale entre la capsule et le corps étranger et également les stratifications qu'on observe à la surface de toutes les implantations examinées ont été étudiées à l'aide d'un scaner électronoptique. Il apparaît que l'absorption des protéines qui est observée au contact du sang se faisait même en cas d'implantation sous-cutanées ou intramusculaires. Alors, l'isolation de l'implantation, si elle n'est pas assimilée ou ataquée par les cellules, peut être subdivisée en trois stades:

1^0 formation d'une couche humidifiant du liquide
2^0 jonction des substances du corps à la surface du polymère
3^0 formation d'une capsule du corps étranger

ZUSAMMENFASSUNG

Demarkation eines Fremdkörpers (aus Polymeren)

E. Roggendorf

Den früheren Konzeptionen nach sind die Polymerenimplantate vom Körper durch das Granulationsgewebe isoliert; nachher entsteht eine Fremdkörperkapsel. Die Flüssigkeitsschichten, die sich in der Regel zwischen der Kapsel und dem Fremdkörper bilden, sowie auch Stratifikationen, die an der Oberfläche aller untersuchten Implantate zu beobachten sind, wurden mittels eines elektronoptischen Scanners studiert. Es hat sich herausgestellt, dass die bei Kontakt mit Blut beobachtete Proteinadsorption auch im Falle subkutaner oder intramuskulärer Implantate eintritt. Es kan also die Isolation des Implantates, falls es nicht assimiliert oder von den Zellen angegriffen wird, in drei Stadien eingeteilt werden:

1. Bildung einer befeuchtenden Flüssigkeitsschicht,
2. Bindung der Körperstoffe an die Polymerenoberfläche, und
3. Einkapselung des Fremdkörpers.

RESUMEN

Demarcación de un cuerpo extraño (de los polimeros)

E. Roggendorf

Según las concepciones anteriores las implantaciones de los polimeros están aisladas del cuerpo por tejido granular; en tonces se produce una cápsula de cuerpos extraños. Las capas del líquido, que por lo general se crean entre lo cápsula y el cu erpo extraño, así como las estratificaciones observadas en la superficie de todas las implantaciones fu eron estudiadas mediante un scaner electronóptico. Se mostró que la adsorción de las proteínas observada en el contacto con la sangre se produce también en el caso de las implantaciones subcutáneas o intramusculares. El aislamiento de la implantación, si esta no está asimilada o atacada por las células, pu ede entonces ser dividi da en tres estadios:

1. creación de la capa humedecedora del líquido
2. junción de las sustancias del cuerpo con la superficie del polimero
3. formación de una cápsula del cuerpo extraño

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EXPERIMENTAL STUDY OF AUTOTRANSPLANTATION OF DENTAL ANLAGEN

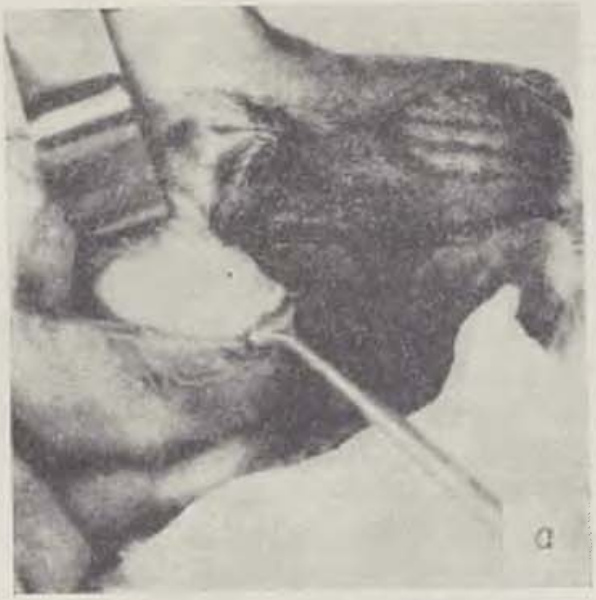
V. A. KOZLOV, B. M. KORIK, V. V. NEKACHALOV

The object of the investigation was to study in experiments the development and eruption of autotransplanted anlagen of permanent teeth.

Eleven pedigreeless puppies aged between two and three months were used for the experiments. The operation was carried out under morphio-hexenal anaesthesia. The method was as follows: The hair was meticulously cut off in the mandibular region, the skin incised together with the underlying soft tissue. After exposure of the mandibular bone from both sides, a plate of 1×2 cm in size was cut out of the lateral compact wall of the mandible using a drill. The exposed anlagen were freed of tissue surrounding them and transferred to an "intermediate" medium represented by sterile physiological saline. The excised anlagen were 0.3×0.8 cm in size and represented a jelly-like, non-bleeding mass covered with a whitish membrane. The anlage excised from the right side was transplanted to the bed of the left anlage and vice versa. The wounds in the supramandibular regions through which the approach to the bone of the mandible had been effected, were powdered with antibiotics and closed by simple suture (Fig. 1). A total of 22 anlagen were thus transplanted. The animals were sacrified seven, 30, 60 and 180 days after operation. Blocks of bone were cut out from both sides of the mandible, each of which contained the transplanted dental anlage and two successive teeth. These samples were subjected to roentgenographic and histological examination.

On the seventh day of the experiment, the dental anlage appeared on X-ray like a lucid focus of elongated shape with a sharp rim of the compact bone of the mandible limiting it. On the masticatory surface of the dental anlage, a zone of calcification could be determined. Thirty days after the experiment the X-ray showed the compact bone of the alveolar process in the region of the dental anlage thinned as compared to the aspect of the region in previous X-rays. On the 60th day, the anlage acquired an irregular shape. Foci of calci-

Fig. 1. Autotransplantation of dental anlagen. Stages of operation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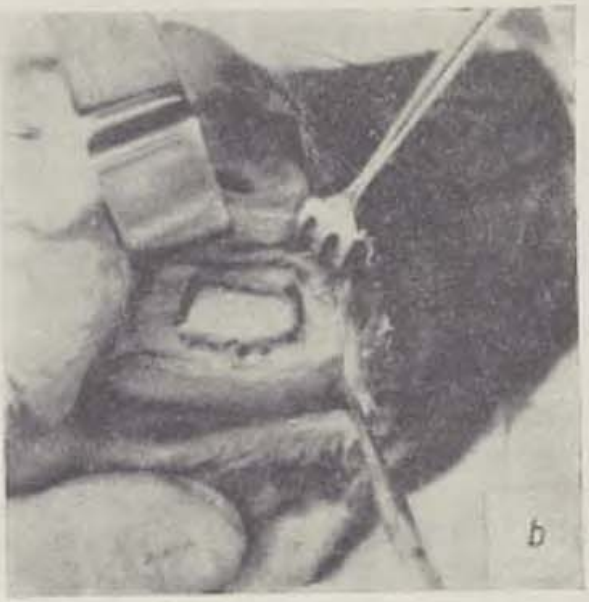
b


c


d


e


f

fication had appeared in the regions of all coronary parts. The compact bone of the alveolar process had further been thinned near the dental anlage. On the 180th day, the X-ray showed formation of permanent teeth. Their roots had fully developed and could be followed up without interruption, as well as the even line of the periodontal fissure. The coronary part of the tooth was incompletely calcified. The dimensions of the tooth slightly exceeded those of the teeth standing in the row (Fig. 2).

Histological examination showed that the character of structural changes in the dental anlagen were identical in both halves of the mandible during the various periods of development. This made it possible to unify description of histological slides procured from either half of the mandible.

On the seventh day, all present histological structures could distinctly be demonstrated in the dental anlage. The adamantine matrix had the appearance of a thin dark-basophilic strip. The dentin of the anlage appeared pale-basophilic and showed not very distinct dentinal canals. The dentin stained evenly. At the border with adamantine, there was a narrow layer of dentin which had

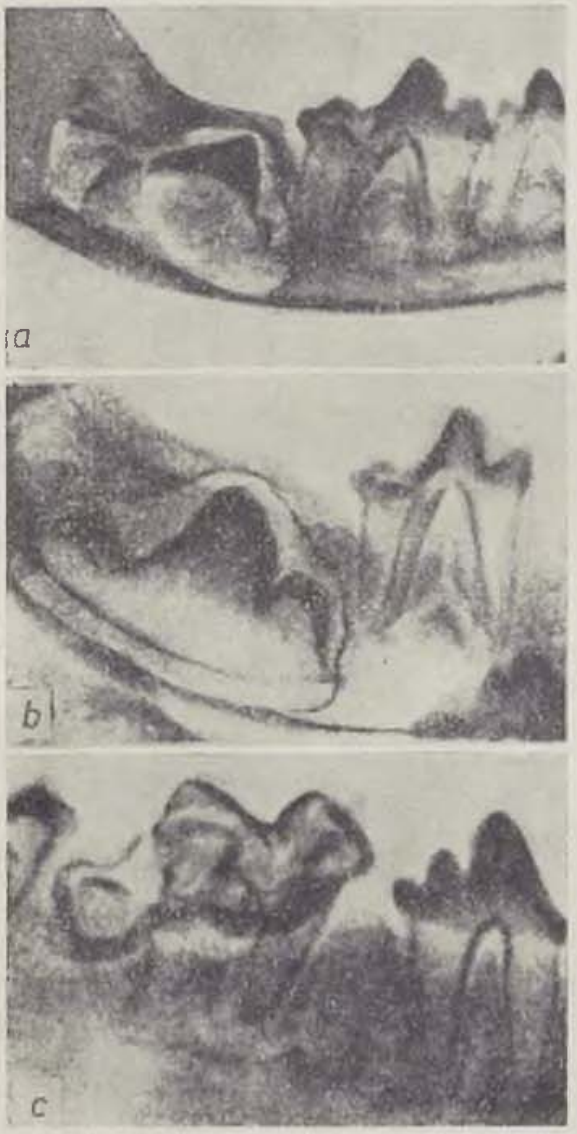

Fig. 2. Roentgenographic study of dental anlage transplantation. a) seven days after transplantation of anlage; b) 30 days after; c) six months after

the apperance of a brush of radially arranged dentinal canals. The predentin zone was narrow, of a pink colour and contained very thin collagenous fibres which passed from the dentin into the layer of odontoblasts. The odontoblasts lay in three to five indistinctly separated rows, their nuclei were round, the cytoplasm had a forthy appearance and almost did not taken on any dye. The cells which formed the tissue of the future pulp had a mesenchymal appearance,

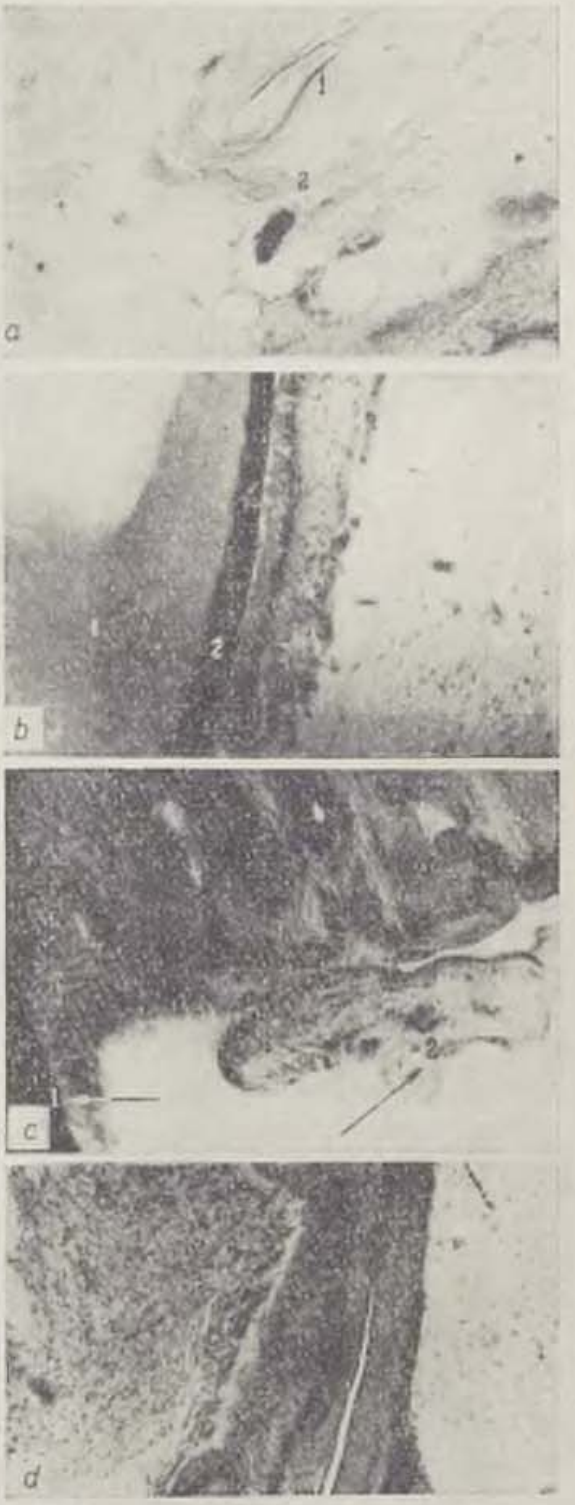

Fig. 3. Tissue differentiation in transplanted dental anlage. a) Initial formation of tissues in transplanted dental anlage (1 — formation of dentin; 2 — mesenchymal tissue); b) initial formation of alveolus (1 — dentin; 2 — cementum); c) development of dentinal islets in region of developing dental anlage (1 — cementum; 2 — dentin); d) tissues adjoining transplant show no signs of changes: no tissues reaction to transplant

and in the parts which bordered onto dentin, they were round and large, in the deeper layers small with dark nuclei. The dental bud contained a thin network of fine collagenous fibres and a large number of blood capillaries with thin walls. The dental anlage was separated from the alveolus by a narrow layer of collagenous fibres arranged longitudinally. The wall of the dental alveolus presented by a wide-meshed net of thin bone cancelli passing over into one another. In these cancelli, bone plates could be followed up which were studded with osteocytes. Saturation with calcified layers was well visible in the bone tissue. In the intervals between cancelli, connective tissue of fine fibres was found. The epithelium of the gum was flat and stratified, had no marks of dental buds and was separated from the dental anlage by a broad layer of connective tissue with coarse fibres. The teeth adjoining the dental bud showed no pathological changes. The cortical layer of the mandible was thin and consisted of osteo-osteoid cancelli running parallel and passing from one to the other with chains of osteoblasts on their surfaces (Fig. 3a).

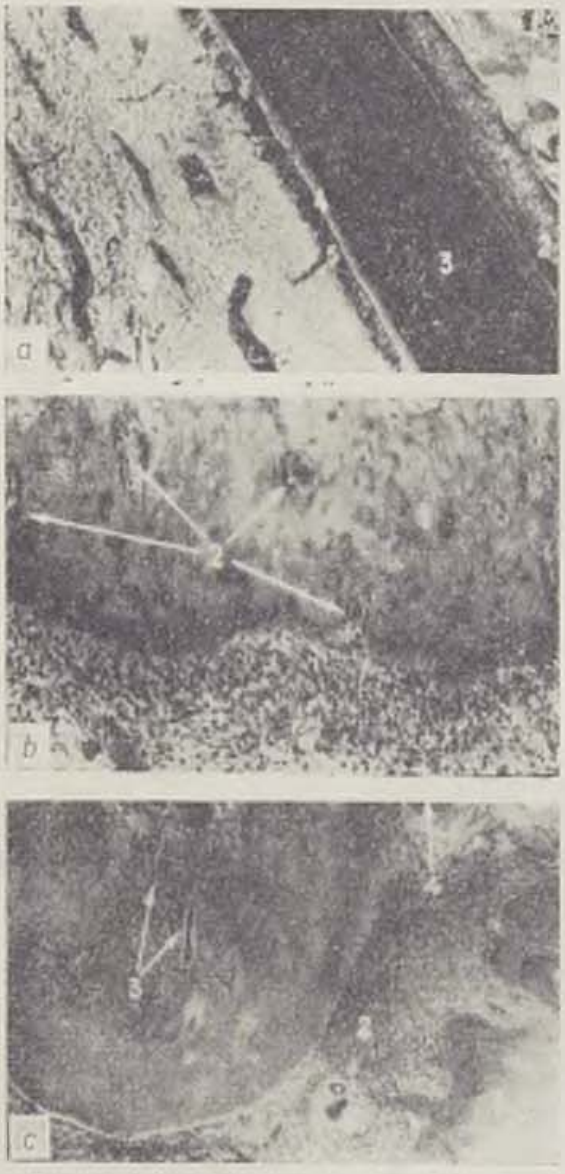

Fig. 4. Formation of dental anlage tissue and eruption of tooth. a) growth and differentiation of dental anlage tissue with development of all structures the anlage consists of (1 — wall of alveolus; 2 — cementum; 3 — dentin; 4 — predentin; 5 — layer of odontoblasts; 6 — pulp); b) apex of root of developing tooth (1 — layer of developing cementum; 2 — multitude of blood capillaries running from periodontal fissure towards pulp of tooth); c) apex of root of developing tooth (1 — bone of alveolus; 2 — periodontal fissure; 3 — dentinal canals; 4 — large blood vessel in periodontium

After 30 days, the dental anlage had proportionately increased in size. A thin histological structure of its tissue almost did not differ from that of the anlage as described in the above paragraph. The epithelium of the gum showed acanthosis. A thin layer of epithelium was seprated from the dental anlage by a narrow layer of fibrous connective tissue. In the forming dental alveolus, near the dental anlage, the bone showed osteoporosis and acquired the appearance of a wide-meshed net. The cortical layer of the mandible consisted of mature bone tissue, but the compactness of the bone had been restored. In the depths of the layer, many fissure-like cavities were found (Figs. 3b and c).

On the 60th day the size of the dental anlage had again increased as compared to that of the preceding stage and the anlagen had acquired a roundish shape. Their various structures could well be differentiated: the narrow layer of adamantine from the dentin. The dental pulp occupied large parts and contained many blood capillaries with thin walls. In the deep parts of the mandible, near the cortical layer, the growing dentin acquired an appearance of large-block masses. The bone tissue of the dental alveolus was mature and represented by large bone cancelli. The epithelium of the gum above the dental bud showed signs of acanthosis. The cortical plate had taken on a compact appearance in a large area over the transplanted dental anlage. The teeth near the anlage showed no pathological changes (Fig. 3d).

On the 180th day the size of the dental anlage had grown larger to almost the size of permanent teeth. The coronary parts of the anlagen had reached above the level of the gums and the deeper parts had taken on shapes resembling those of dental roots. The layer of adamantine was narrow and of irregular

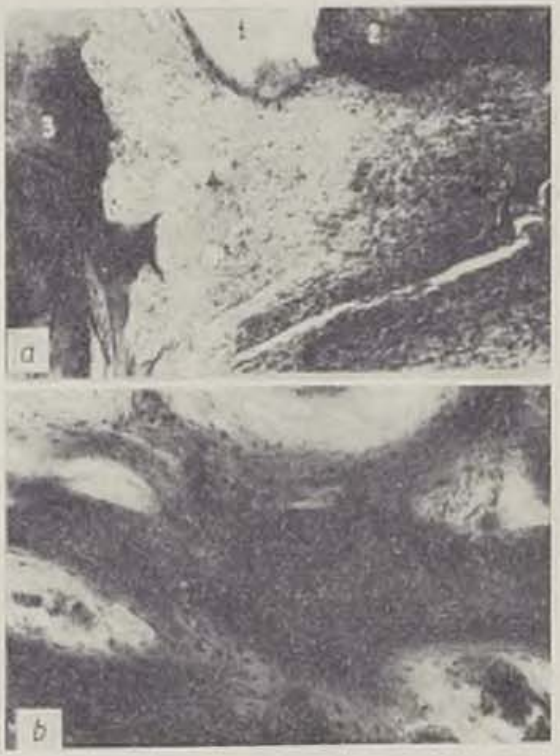

Fig. 5. Eruption of tooth and restoration of cortical bone layer. a) eruption of tooth (1 — gingival pocket; 2 — epithelium; 3 — cementum of tooth root; 4 — bone of alveolus); b) restoration of cortical bone after transplantation of dental anlage

thickness, dark-basophilic, staining evenly and had an even thickness in its coronary part (Fig. 4a). The dentin of the crown had taken on the appearance of rods, islets and large-block mases. In the apical parts, there were small canals with blood capillaries (Fig. 4b and c). The layer of predentin was narrow and had taken on a pink colour. The odontoblasts lay next to the predentin in several rows, their nuclei were small, the cytoplasm formed a thin rim which stained slightly. In the radical part of the dental anlage a very narrow layer of cementum had developed; in the narrow periodontal fissure collagenous fibres lay in rows. In the developing gingival pockets finely granulated detritus could be seen. The tissues at the bottom of gingival pockets were infiltrated with cells of the lymphohistiocytal series. The dental sockets showed signs of osteoporosis which in a lesser, yet still visible degree affected the cortical layer (Fig. 5).

Thus the results of the experiments have shown that the dental anlagen did not undergo absorption after transplantation throughout the entire period of observation. There was no reaction at all to the grafts in the adjoining teeth. Growth and differentiation of the anlagen were distinctly visible: increase in dimensions, tissue differentiation involving the structure up to the moment of teeth eruption. The cementum and the periodontal fibres which had not reached adequate development by the time of teeth eruption, remained excluded from this rule. In the apical parts of the radical section of the tooth, blood vessels were found in the depth of dentin, running into the dental pulp. At the moment of tooth eruption, complete restoration of bone of the mandible including its cortical layer could be observed. The coronary parts of erupting teeth which had developed from transplanted anlagen had not become completely calcified. B. K.

SUMMARY

The development of 22 autotransplanted dental anlagen of the permanent teeth was investigated in eleven puppies. The consequent tissue differentiation was studied by roentgenological and histological methods right up to the time of teeth eruption. The developing teeth were supplied with blood by vessels. The cementum and periodontal fibres were not, unlike all other tissues, fully differentiated by the time of tooth eruption. The adamantine had not completely calcified. The autotransplanted dental anlagen did not undergo any absorption and did not provoke any reaction of the surrounding tissue.

RÉSUMÉ

Etude expérimentale de la transplantation des germes des dents

V. A. Kozlov, B. M. Korik, V. V. Nekatchalov

On a étudié le développement d'une autogreffe de 22 germes des dents sur 11 petits chiens. La différentiation des tissus des germes des dents a été suivie par les méthodes radiographiques et histologiques jusqu'à l'éruption des dents de leur gencive. Au cours de leur développement les dents sont nourris par des vaisseaux. Le cément de dent et les fibres périodontales ne parviennent pas — à la différence des

autres tissus — à la différentiation définitive jusqu'au moment de l'éruption des dents. La calcification complète de l'émail ne se produit pas non plus. Les germes des dents provenant d'une autogreffe ne subissent pas le résorption et ne provoquent aucune réaction des tissus entourant la greffe.

ZUSAMMENFASSUNG

Experimentelle Studie der Zahnkeimtransplantation

V. A. Kozlow, B. M. Korik, V. V. Nekatschalow

Die Entwicklung von 22 autotransplantierten Zahnkeimen des permanenten Gebisses wurde bei 11 Hündchen studiert. Die Gewebedifferenzierung der Zahnkeime verfolgten die Autoren mit röntgenographischen und histologischen Methoden bis zum Zahndurchbruch durch das Zahnfleisch. Die sich entwickelnden Zähne werden durch Gefässe ernährt. Das Zahnzement und die Periodontiumfasern erreichen nicht die definitive Differenzierung zum Augenblick des Zahndurchbruches, zum Unterschiede von den übrigen Geweben. Es tritt auch nicht volle Verkalkung des Zahnemails ein. Die auto ransplantierten Zahnkeime werden nicht resorbiert und rufen keine Reaktion der das Transplantat umgebenden Gewebe hervor.

RESUMEN

Estudio experimental de la transplantación de los gérmenes de los dientes

V. A. Kozlov, B. M. Korik, V. V. Nekachalov

El desarrollo de los gérmenes autotrasplantados de los dientes de la dentición permanente fue estudiada en 11 perillos. La diferenciación de tejido de los gérmenes de los dientes fue observada por métodos radiográficos e histológicos hasta a la erupción de los dientes en las encías. Los dientes que se desarrollan son nutridos por los vasos. El cemento dental y las fibras periodontales al contrario de los demás tejidos no pervienen a diferenciación definitiva hasta al momento de la erupción de los dientes. Tampoco se produce calcificación completa del esmalte dental. Los gérmenes autotrasplantados de los dientes no sucumben a la resorpción y no provocan reacción ninguna de los tejidos que rodean el injerto.

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METHOD OF NOSE RECONSTRUCTION USING A FREE GRAFT OF PART OF THE AURICLE

G. V. KRUCHINSKYI

Using a composite cutaneo-cartilaginous free graft from the auricle is one of the widely employed and recognized methods of partial rhinoplasty.

This method was first described by the Russian surgeon K. P. Suslov in 1898.

At first it was assumed that such operations could only be successful in 50 or less per cent of cases. This was the reason why surgeons tried to transpose part of the auricle to the defect in the nose on a nutritive pedicle. For the same purpose they also used tissue of the lateral aspect of the face, the scalp or flaps from the temporal region, sometimes they used a transplant which had preliminarily been sutured to a finger. A number of Russian surgeons transposed the auricular transplant on a Filatov flap. However, these cumbersome methods have never been used on a wide scale. Most surgeons endeavoured to improve upon the conditions for the take of the transplant by creating a larger area of contact with the recipient bed and by perfecting surgical technique. Thus some surgeons started to suture the transplant to the tissues turned over from the edge of the defect. Others created a special bed for the graft by forming a wedge or a ledge on the graft or the edge of the defect.

In 1963 at the author's Department, they added new details to this procedure by forming little skin projections on the transplant, which reached beyond the defect on to the free margin of the ala nasi, the tip of the nose or the columella. Apart from that they made sure of a good take of the cutaneo-cartilaginous graft by enlarging it through additional sections of skin. This not only made it possible to bridge the defect in the ala, but also to remove large scars which had developed in the neighbourhood of the defect.

At present bridging of a defect of the ala nasi with a graft of part of the auricle can be considered to be standardized and to give good results in a large percentage. This is borne out by the experience of many Soviet and foreign surgeons (Limberg, 1935; Kyandskyi, 1958; Balon, 1958, 1970 and 1971; Zausayev,

1959; Kostylev, 1961 and 1971; Kruchinskyi, 1963, 1970 and 1971; Koltun, 1936; Converse, 1950, 1964 and 1968; Musgrave, 1967; Bethmann, 1969; Brandt, 1969; Winn, 1972; Orticochea, 1971; Millard, 1971).

Millard (1971) carried out a unique operation by simultanous transplantation of three composite grafts taken from the ear lobe for the enlargement of the insertions of the alae nasi and the columella. Grafts of part of the ear lobe are widely used in cases of acquired defects in the nose, including those immediately after injury and lately also for the correction of congenital shortening of the columella, congenital deformities of the alae or the entire terminal part of the nose, for plasty of the lower eye lid, and reconstruction of congenital or acquired defects in the auricle.

The choice of site where the graft should be taken from the auricle and the shape presents a serious matter. Suslov, König and many of their disciples are taking the graft from the upper-posterior part of the aurice (Fig. 1a).

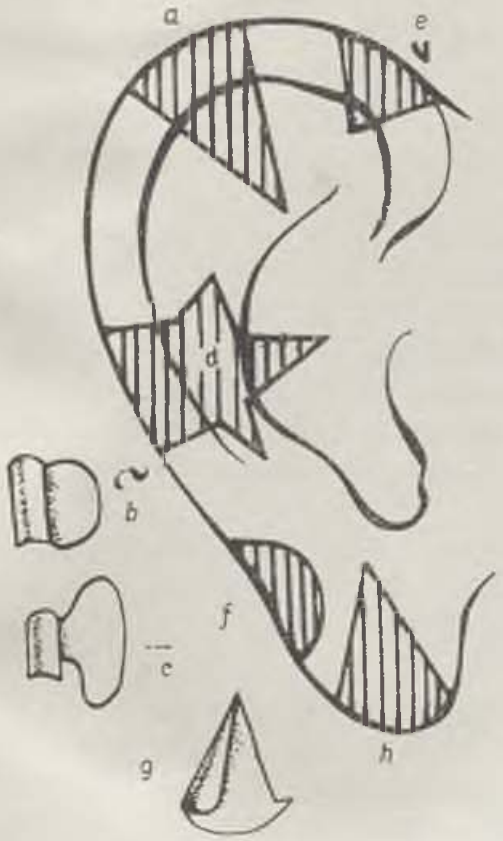

Fig. 1

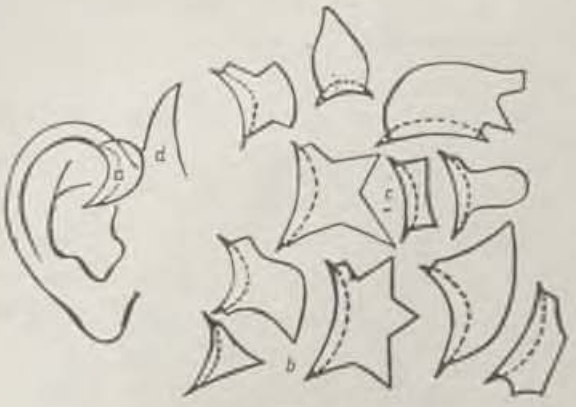

Fig. 2

Fig. 1. Diagram of excised auricular transplants of known shapes and locations. a — posterior upper section of auricle; b, c, d — posterior aspect of central part of auricle; e — anterior part of helix; f, g, h — region of earlobe. — Fig. 2. Diagram of new method of cutaneo-cartilaginous graft excision together with additional skin flaps from crus, the ascending part of helix and anteauricular region. a, b, c — some variantas of such composite transplant. Dotted lines mark sections of transplants containing cartilage covered with skin on both sides; ends of cartilage are protruding; d — skin flap on lower pedicle earmarked for covering wound surface left after excision of composite graft

Some surgeons (Walter, 1967), on the other hand, take the graft from the upper-anterior part of the auricle (Fig. 1e). Lexer (1930) excised a graft on an oval shape from the auricular concha. Converse (1950) used a rectangular cutaneo-cartilaginous graft with additional skin flaps from the medial aspect of the auricle for reconstruction of an ala nasi immediately after excision of a carcinomatous tumour.

Mayer (1956) and Bethmann (1969) have taken transplants from the central part of the auricle including the lower part of the helix and concha (Figs 1b and 1c). The author has taken a graft of an asteroid shape with symmetrical points from the posterior margin of the helix (Fig. 1d).

A number of surgeons (Lehmann et al., 1971) have used part of the ear lobe for rhinoplasty (Figs. 1f and 1g). In 1969 the author presented his method of earlobe reconstruction using a figure graft from the healthy earlobe (Fig. 1h).

Among the sites of graft excision which are most widely used, and thus have become classical, is the upper-posterior part of the auricle. There usually a wedge- or ledge-shaped or oval graft is excised. It should be said that all the methods of graft excision mentioned above lead to diminution of the auricle and thus to the necessity of correcting the donor auricle. If the wound edges are simply sutured, as erroneously has been recommended by some authors, the auricle acquires the shape of a funnel.

In order to preserve the natural shape of the donor auricle, triangular sections of cartilage and skin must be excised in addition to both sides of the original wedge. In 1967 the author recommended to excise these sections together with the transplant, which permits to use these tissues of the auricle for the intended plasty which could not be done before.

Experiments have been carried out in order to preserve the auricular dimensions after excision of the graft by a pedicle skin plasty from the retroauricular region.

A quite original method of auricle reconstruction was described by Kyandskyi (1958) who recommended to implant into the donor site a triangle half the size of the graft, taken from the other auricle. Pegram et Peterson (1956) used this method even earlier.

Using for many years the auricle as material for plastic surgery, highly estimating its advantages and well aware of its disadvantages, the author, in order to improve upon the method, started to excise the graft not as is usually done from the upper-posterior section of the helix but from the anterior section, at the site of its crus and ascending part. This resulted in a number of advatanges for the plasty of the ala nasi, particularly in defects which extended on to the tip and columella of the nose. These advantages arose due to the new direction in which the graft was excised, i.e. when not as usually the lateral, convex margin, but the inner, concave margin of the helix and its crus were used for reconstruction of the ala nasi.

Below the author's method of operation is described:

First the scar tissue is turned aside the edge of the defect in the nose thus forming the lining. The lining is only to be made on a narrow strip along the

Fig. 3. Patient K., woman aged 17: a — defect in right ala nasi; b — two years after plasty using new method

edge of the ala. If parts of the nose are displaced, they are divided and the ala, tip and columella of the nose are replaced to their normal position, thus disclosing the actual tissue defect.

A pattern corresponding in shape and size to the outer surface of the wound is cut out from gauze or a polyethylene sheet, which is then applied to the region of the helix so that the part of the pattern which corresponds to the defect in the margin of the nose comes to lie along the ascending part of the helix and its crus, in order to make use of its concavity and cartilage content and the skin on both sides. The remaining parts of the pattern are spread over the region in front of the ear above the tragus. The shape of the graft is drawn along the edge of the pattern with a thin swab of cotton wool or a pen dipped in a strong solution of permanganate.

The graft is first excised from the side of the helix concavity. An arched incision is made inside with a narrow and sharp scalpel, cutting through skin and cartilage at the same time. Only the outer skin cover of the helix remains undamaged (Fig. 2a). When dividing the cartilage under the skin along the margin of the helix and its crus, care must be taken to preserve its integrity all along its entire length. Then the incisions are made on the outer side of the helix and in the region in front of the ear along the drawn lines and the cutanea-cartilaginous graft is separated as a whole.

Fig. 4a

Fig. 4b

Fig. 4c

Fig. 4d

This graft contains a piece of cartilage covered with skin on both sides and has, if necessary, an additional piece of skin. The part containing cartilage must be much larger than the defect in the nose, although the skin of the transplant must correspond to the size and shape of the wound. Simplifying the surgical technique, the graft is excised together with the subcutaneous connective tissue which is afterwards removed with scissors up to the very dermis. The shapes of the cutaneo-cartilaginous grafts which are usually employed are shown in Figs 2a, 2b and 2c.

Fig. 4e

Fig. 4. Patient S., boy aged 14: a — condition prior to operation: right eye and ala nasi missing, large scar on lateral aspect of nose, after road accident; b — skin wound and wound in auricle after excision of composite cutaneo-cartilaginous graft from crus and ascending part of helix and anteauricular region; c — nose after suture of large cutaneo-cartilaginous graft; d — donor auricle; e — condition of patient six months after operation: ala nasi and large scar replaced by large cutaneo-cartilaginous graft

The graft is fitted to the edges of the defect. At the insertion of the ala and the columella small longitudinal tunnels are burrowed where the ends of the cartilage are placed. Usually the thicker end of cartillage taken from the crus of the helix is placed into the pocket of the columella. This circumstance should also be taken into account when planning the operation and the transplant should be taken from the ear on the side of the defect. The cartilage ends are anchored with mattress stitches of hair led out through the skin away from the wound edge. The cutaneo-cartilaginous transplant taken from the ascending part of the helix has a convex shape and corresponds to the normal margin of the ala much better than any transplant used in any earlier method.

If the defect extends to the lip of the nose, the transplant is bent and its upper end is placed under the skin of the columella. Such a bent graft in the

region of the tip of the nose permits to make the transition of the ala on to the columella appear nearly normal. This is the reason why it is important that the part of the transplant which contains cartilage be longer (5—6 mm) than the length of the defect. The width of the cartilaginous plate does not usually exceed 3—4 mm, which is quite sufficient.

The edge of skin of the transplant which has been turned inside the nasal cavity is sutured with catgut to the edge of the earlier formed lining. On its outer aspect, the transplant is sutured with horse hair or lavsan. This is done so that the skin of the transplant covers not only the defect in the ala, the tip and the columella, but also the wounds created by the excision of deep scars in the skin. The wounds in the donor site may be sutured after mobilization of edges. Most frequently this can be done without much difficulty. If a large additional piece of skin was taken with the graft, a flap is formed in the temporal region up to the hair line (Fig. 2d) with a lower pedicle and used for coverage of the wound surface.

After suturing the transplant into place, the nostrils are plugged with tampons and "tile"-shaped pieces of gauze are applied to the outside and held in place with adhesive plaster. The dressing, tampons and mattress stitches are removed after 24 hours. If, due to the impairment of blood and lymph circulation, blisters develop on the transplant after two to three days, they must be opened and their fluid drained off while their epidermal membranes are left in place. The stitches are removed after eight to ten days.

In order to illustrate the good results of rhinoplasty by using a cutaneo-cartilaginous graft taken from the crus and ascending part of the helix by the above method, photographs of wo patients are presented below (Figs. 3a, 3b, 4a, 4b, 4c, 4d and 4e).

The above method was first used by the author in 1962 at the Surgical Department of the Moscow Scientific-Research Institute of Cosmetology and during the following years it was tested at the Surgical Department of the Central Scientific-Research Institute of Stomatology and the Stomatological Department of the Belorussian Post-Graduate Medical School. The method was used in 77 patients with good results. Necrosis of the transplant was only observed in three cases.

The advantages of the above method may be summed up as follows:

1) The new method has been used by the author and gives positive results in isolated defects of the ala nasi, while the dimensions and shape of the donor ear are completely preserved, even if diminution of the ear from excising a transplant by any other method is unavoidable.

2) This method permits to take a cutaneo-cartilaginous graft of 2—2.5 cm in length from the crus and ascending part of the helix without detriment to the size and shape of the donor ear, while when using any other of the earlier methods the transplant cannot be larger than 1—1.5 cm and still leads to diminution of the ear; to take a transplant 2—2.5 cm in length from an ear of medium size is quite impossible without subsequent deformation and considerable diminution of the donor auricle.

3) The existing convexity of the free margin of the cutaneo-cartilaginous transplant taken from the crus and ascending part of the helix fully corresponds to the normal shape of the ala nasi and thus ensures better cosmetic results and foregoes corrective operations which are unavoidable when using the old methods.

4) Apart from making it possible to take a large cutaneo-cartilaginous graft, the new method permits to take an additional skin flap of any shape or size.

5) Thanks to the length and flexibility of the transplant supplemented by skin flaps of the required size and shape, the new method permits to cover combined defects of the ala, the tip and columella of the nose, to remove large scars from the neighbourhood at the same time, which is practically impossible with any of the earlier methods. All this can be achieved while size and shape of the donor ear are preserved.

Consequently, the method described above is more universal, gives good cosmetic results with a minimum of detriment to the ear, which constitutes a favorable difference from the earlier methods and justifies its recommendation for wide usage. B. K.

SUMMARY

The paper refers to the historical data on the employment of the auricle as material for reconstructive surgery of the nose and auricle. A new method of free transplantation of a composite auricle transplant is described, which is taken from the anterior unlike as in the earlier methods from the posterior aspect of the auricle; i.e. from the crus and ascending part of the helix. The method is more rational and universal, because it permits taking a very large cutaneo-cartilaginous transplant from the aurice together with additional skin flaps of various shape, while size and shape of the donor auricle remain unaltered. The method permits to bridge large and combined defects and correct congenital anomalies. It gives better cosmetic results and makes a number of corrective operations unnecessary. The paper is based on the observation of 77 patients in whom composite transplants from the auricle were employed by the above method. It also presents diagrams and photographs of patients prior to and after rhinoplasty .

RÉSUMÉ

Mode d'une plastie du nez à l'aide de transplantation libre d'une partie du pavillon de l'oreille

G. V. Kroutschinskiy

On présente des dates traitant l'historie de l'utilisation du pavillon de l'oreille servant comme matériel de plastie pour la chirurgie reconstructive du nez et du pavillon de l'oreille. On décrit un nouveau mode de transplantation libre des greffes d'oreille compliquées qui ont été prises — à la différence des méthodes connues auparavant — pas de la partie postérieure, mais de la partie antérieure de l'oreille: crus et pars ascendens helicis. Cette méthode est plus rationnelle et universelle parce qu'elle permet de prendre du pavillon de l'oreille des greffes cutanées et cartilagineuses beaucoup

plus grandes avec des lambeaux cutanés hétéromorphes en conservant la grandeur et la forme primitive du pavillon de l'oreille duquel celles-ci ont été prises. La méthode permet même de corriger les grands défauts et de réparer les anomalies congénitales du nez. Les résultats sont bons même du point de vue cosmétique. Il y a aussi, dans ce casci, moins d'opérations correctives. Le travail présenté consiste en observation de 77 malades chez lesquels ont été appliquées les greffes compliquées du pavillon de l'oreille par le mode ci-dessus décrit qui est illustré par des schèmes et par des photographies des malades faites avant et aurès la plastie du nez.

ZUSAMMENFASSUNG

Ein Nasenplastikverfahren, beruhend auf den freien Transplantation eines Ohrmuschelteils

G. V. Krutschinskij

Es werden Angaben vorgelegt, die sich auf die Geschichte der Anwendung der Ohrmuschel als plastisches Material in der Wiederherstellungschirurgie der Nase und der Ohrmuschel beziehen. Man beschreibt ein neues Verfahren der freien Transplantation komplizierter Ohrentransplantate, die zum Unterschied von den vorher bekannten Methoden nicht von dem hinteren, sondern von dem vorderen Teil des Ohres genommen wurden: crus und pars ascendens helicis. Die Methode ist rationneller und universal, da sie es möglich macht, von der Ohrmuschel weit grössere Hautknorpeltransplantate mit verschiedenförmigen Hautlappen zu nehmen, wobei die Grösse und From der Spenderohrmuschel unverändert bleiben. Die Methode macht es möglich, grosse Defekte zu überbrücken und angeborene Nasenanomalien zu korrigieren. Die Ergebnisse sind gut auch vom kosmetischen Gesichtpunkt und zugleich ist die Zahl der Korrekturoperationen geringer. Die Arbeit beruht auf der Beobachtung von 77 Kranken, bei denen komplizierte Ohrmuscheltransplantate nach dem beschriebenen Verfahren benutzt wurden, schematische Darstellungen und Photographien von Kranken vor und nach der Nasenplastik illustrieren die Ausführungen.

RESUMEN

El método de una plástica de la nariz mediante un trasplante libre de una parte de la oreja

G. V. Kruchinskii

Están presentados los datos sobre la historia del empleo de la oreja como material plástico en la cirugía reconstructiva de la nariz y de la oreja. Está descrito un método nuevo del transplante libre de injertos complejos de las orejas los cuales a diferencia de los métodos conocidos antes fueron tomados no de la parte posterior sino de la anterior de la oreja: crus y pars ascendens helicis. El método es más racional y universal porque permite tomar de la oreja injertos cutáneo-cartilaginosos mucho más grandes con lóbulos cutáneos de varia forma, el tamaño y la forma de la oreja donador quedando no cambiados. El método permite cubrir defectos grandes y arreglar anomalias congenitas de la nariz. Los resultados son buenos también en cuanto al aspecto cosmético y al mismo tiempo el número de intervenciones correctivas es menor. El trabajo está basado en la observación de 77 pacientes en los cuales fueron usados injertos complejos de la oreja de manera descrita más arriba, están esclarecidos de esquemas y retratos de los pacientes antes y después de la plástica de la nariz.

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REMOVAL OF INBORN PIGMENTED NAEVI OF BOTH EYELIDS AND COVERING THE DEFECTS WITH A FREE MUCOCUTANEOUS FLAP

A. A. KOLEN, I. P. DMITROVSKAYA

The defects caused by removal of neoplasms related to inborn colobomas or defects of traumatic origin, are usually covered by a mucocutaneous flap on a pedicle. Several similar methods have been described elsewhere. However, a method consisting of the transfer of a previously prepared mucocutaneous flap has not yet been published. Therefore, this method is described here as a new plastic operation.

A boy, 8 years old, was operated on after admission to the Moscow Gelmgolts Scientific Institute of Eye Diseases with the following diagnosis, pigmented naevus of the skin of both eyelids of the left eye.

The patient's history showed that weak pigmentation of small areas of the eyelids was observed soon after birth. From the age of seven and onwards the pigmentation became more intense and a larger area was affected. The uneven outgrowths emerged on the surface of the affected parts of the skin.

The result of examination in the hospital showed: The right eye was normal, the left eye — identical formations of size 1×1.5 cm, distinctly delimited from the normal tissue, painless, rough and pigmented, were situated in the middle third of the upper and lower eyelids and in between the eyelashes; intermarginal borders and 3—4 mm broad parts of mucosa were also affected. The other parts of the mucosa of the eyelids and of the eyeball were normal. The centres of both eyes were transparent. The eyeground was normal. Keenness of the eyesight was 1.0. Refraction was emmetropic. The child was somatically healthy.

The operation consisting of removing the neoplasm and covering the newly formed defect by the free mucocutaneous flap, was performed in three stages.

The first stage: A cutaneous flap in the shape of a bridge with two pedicles 3.5×3.5 cm was formed on the inner side of the left forearm. Mucosa

taken from the lip using the Filatov and Tsikulenko method was applied to the surface of the flap not covered by the skin. The piece of mucosa was smaller than the cutaneous flap and its size was about 2.5×2.5 cm. The second stage of the operation was performed 11 days later. The neoplasms on the upper and lower eyelids together with eyelashes, affected parts of intermarginal border and corresponding parts of eyelid mucosa were cut off within the limits of the normal tissue. The skin defect on the eyelids was greater than the defect of the mucosa, corresponding to the size of the affection. The previously prepared mucocutaneous flap was cut free in the site of attachment of pedicles, transferred to and placed on the defect in such a manner that the surface of the mucosa was turned to the eyeball. The margins of the flap were split and excess mucosa was removed. The cutaneous part of the flap was sewn to the skin of the eyelids and the mucous part was sewn to the mucosa of the eyelids. When the two lines of stitches were put in, both eyelids were united by the flap and the eye opening was firmly closed. It was still possible to follow the state of the eye through the remaining narrow regions of the eye opening along the edges of the flap. The condition of the eyelids after the second stage of the operation is shown in Fig. 2. The third stage of the operation (splitting the flap) was performed two months later. The margins of the eyelids were sutured along the section.

When the child was reexamined 6 months after the operation, the length and height of eye openings were found to be equal on both sides. The flap healed in its new place, gradually thinned out and almost no difference between the surrounding surface of the eyelid and the flap could be observed. Despite the absence of eyelashes in the middle third of the eyelids, the cosmetic effect of the operation was fully satisfactory (Fig. 3).

The applied method of operation is based on the following presumptions: The excision of a neoplasm should be followed by covering the defect with a mucocutaneous flap. For this kind of operation, the usually recommended types of mucocutantous flaps on pedicles were not considered to be quite suitable. The formation of two different flaps might lead to a deformation of the eyelid margins and to incomplete closure of the eye opening due to shrinkage of the healed tissue. Success is not guaranteed even by additional suture of eyelids, which is sometimes recommended. Furthermore, the formation of a flap on a pedicle would need further incisions on the skin of the face and would in itself lead to cosmetic defects.

Therefore, the described operation was considered more functional in this situation. The selection of a method depended on the symmetrical mirror position of neoplasms on the eyelids and on the possibility of the simultaneous removal of the affected parts of the skin followed by covering the defect with the one prepared mucocutaneous flap. The transplanted tissue fixed from all sides by two sutures was expected to be evenly stretched, somewhat counteracting the process of shrinkage. Massage of the mucous side of the flap by movements of the eyeball may also contribute beneficially. The state of uniform tension may be prolonged up to several months, till stable results

are achieved. The remaining parts of the eye opening allow for the control of cornea and treatment, if necessary.

The advantage of our method is that the defect on the skin or mucosa can be covered by a flap of a different size from the size of the defect, as described in this patient's case. The greater size of the cutaneous part of the flap, when compared to the size of mucosa, may prove an advantage in the process of healing.

We are of the opinion that the described method could be recommended not only for removal of neoplasms, but also for the substitution of inborn and traumatic defects of the eyelids in patients of different ages, including young children.

CONCLUSIONS

The use of a free mucocutaneous flap for covering defects of the eyelids, caused by removal of inborn pigmented naevi on both eyelids, was described in one case. As the possibility of preparation of the mucocutaneous flap on another part of the body — not the face — and of its transfer for covering the defect on the eyelids has received no mention in literature, the authors assume that their method is new and can be used for substitution of mucocutaneous defects in the eye region. M. T.

SUMMARY

A method of surgical plasty for covering the symmetrical defects of both eyelids of the same eye was described. Its principle is in the formation of a mucocutaneous flap on the forearm and covering defects of both eyelids simultaneously with one flap, the edges of which are consecutively formed into margins of the eyelids.

The advantages of this method are the simultaneous covering of the defects of both skin and mucosa, good vascularization and uniform stretching of the tissue preventing shrinkage of the flap and producing a good cosmetic effect.

RÉSUMÉ

Ablation du naevus pigmentaire congénital sur les deux palpèbres avec la compensation par un lambeau cutaneo-muqueux libre

A. A. Kolen, I. P. Dmitrovskaya

On a décrit le mode de la plastie chirurgicale servant à couvrir des défauts symétriques des deux palpèbres d'un même oeil. Il consiste dans la création d'un lambeau cutaneo-muqueux dans l'avant-bras et dans la recouverture des deux palpèbres par un lambeau entier avec le façonnement suivant des bords des palpèbres.

L'avantage du mode présenté est la compensation simultanée des défauts de la peau et de la muqueuse, une bonne vascularisation et la tension proportionnée du tissu qui empêche le lambeau de se rider et produit un bon éffet cosmétique.

ZUSAMMENFASSUNG

Entfernung eines angeborenen Pigmentnaevus an beiden Augenlidern und Ersetzung des Defektes durch losen Haut-Schleimhautlappen

A. A. Kolen, I. P. Dmitrowskaja

Es wurde ein Verfahren chirurgischer Plastik beschrieben, das zur Deckung symmetrischer Defekte beider Augenlider desselben Auges dient. Das Verfahren beruht auf der Bildung eines Haut-Schleimhautlappens am Vorarm und in der Deckung des Defektes beider Augenlider mit dem ganzen Lappen mit nachfolgender Formgebung der Augenlidränder.

Den Vorteil dieser Methode bilden der gleichzeitige Ersatz der Haut- und Schleimhautdefekte, gute Vaskularisierung und gleichmässige Gewebespannung, die das Einschrumpfen des Lappens verhindert und zu einem guten kosmetischen Effekt führt.

RESUMEN

Remoción de un nevo dermoepidérmico congénito en los dos párpados con reemplazo del defecto por lóbulo cutáneo-mucoso libre

A. A. Kolen, I. P. Dmitrovskaya

Fue descrito el modo de la plastia quirúgica para cubrir los defectos simétricos de los párpados del mismo ojo. Consiste en la creación de un lóbulo cutáneo-mucoso en el antebrazo y en la cobertura del defecto de los dos párpados por un lóbulo entero con creación siguiente de los párpados.

La ventaja del modo presentado es el reemplazo simultáneo de los defectos de la piel y de la mucosa, vascularisación buena y tensión proporcional de la piel que protege el lóbulo de arrugación y produce un efecto cosmético bueno.

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PLASTIC OPERATIONS ON URINARY BLADDER IN NEUROGENIC DISORDERS OF MICTURITION (Communication II)

N. E. SAVCHENKO, V. A. MOKHORT, A. A. GRES

Disorders of the reflex arch of micturition issuing from the intramural part of the organ which represents the peripheral source of urinary bladder innervation, have hitherto been inadequately investigated. The chief symptom in these disorders is the muscular weakness, while afferent innervation is partly preserved. In accordance with the authors' classification, this condition has been called myogenic atony or intramural areflexia of the urinary bladder.

Congenital atony of the urinary bladder due to disorder of intramural innervation is known in the literature under the term megalocystis. The causes of secondary, acquired myogenic atony are obstructive changes in the neck of the urinary bladder, compression of the bladder in women during parturition and surgical injury during operation in the pelvis.

Disorder of the very peripheral part of the reflex arch in the act of micturition usually leads to atony of the urinary bladder with all ensuing consequences. However it is hard to imagine that such or similar local changes could lead to total disintegration of intramural nerve endings. Evidently, at the beginning, partial necrosis takes place and afterwards the patients feel an urge to urinate for a long time and independent micturition is partly preserved. Later, with gradual decompensation of the bladder, the amount of residual urine increases, which leads to secondary total disruption of the neuromuscular structure of the bladder. At this stage, the capability of the detrusor for contraction is completely exhausted and urine escapes by drops like in ischuria paradoxa. Combined bilateral ureterohydronephrosis, chronic pyelonephritis and rapidly progressing chronic kidney failure make prognosis of the case unfavourable. This is why early diagnosis of urinary bladder atony is so important, i.e. at the time when pathogenic treatment is still possible.

In the clinical course of developing intramural areflexia of the urinary bladder, three stages may be distinguished: the period in which the aetiological factor is still active, the period of developing bladder atony and the stage of ischuria paradoxa. Duration of the various stages greatly depends on the zone of the primary affection, the degree of primary mictional disorder and other factors.

The presence of a factor in the clinical picture which leads to weakening of detrusor contractions while the urge to urinate remains preserved has made it logical to look for a mode of how to reinforce the detrusor.

In recent years various papers (Zoedler, 1964; Sachse, 1965; Sakatoku et Fukynama, 1967) were published, dealing with attempts at reinforcing the detrusor with autologous tissues, which, in the author's opinion, is most rational and justified.

In experiments on 27 dogs, the authors investigated the method of duplicating the detrusor wall (autocystoduplication). They compared the capacity of the urinary bladder and carried out sphinctero- and cystometry, electromyography and cystography prior to and after operation. They also investigated the histological condition of muscular tissue and nerve endings in the zone of detrusor duplication. After operation the bladder capacity had diminished to 50 or 40 % of the original and a certain increase in detrusor strength was found; the structure of muscular tissue and nerve endings was undamaged. These findings indicated that autocystoduplication was capable of accomplishing two main tasks imposed upon the surgeon in myoneurogenic atony: decrease in bladder volume and increase in its contraction capacity.

Between 1966 and 1972 autocystoduplication was carried out in 30 patients suffering from urinary bladder atony based on damage to the intramural nerve plexus. The most difficult and responsible part was determining the indication for autocystoduplication. The authors are of the opinion that indication for this operation is atony of the urinary bladder accompanied by incomplete disruption of the reflex arch of micturition, i.e. in partial preservation of bladder sensitivity for the urge to urinate and preservation of independent micturition, even if incomplete, i.e. if myogenic predominates over neurogenic insufficiency.

The technique of the operation is as follows: An incision is made between the umbilicus and the mons pubis and the urinary bladder exposed. It is then stripped of its peritoneum either after or without opening the abdominal cavity. The bladder is pulled out of the wound and opened by a transverse incision made 5 to 6 cm above the neck and extended to the lateral walls, thus forming an apical flap. After this the vault of the urinary bladder is left connected with the rest of the bladder by a broad pedicle formed by its posterior wall.

The apical flap is carefully stripped of its mucous membrane down to the line connecting the ends of the transverse incision on the posterior wall, then the cavity of the urinary bladder is restored, the anterior wound edge in the lower part of the bladder is fixed to the posterior wall along the line of demucosation of the apical flap. The sutures do not involve the mucous membrane. Particular care must be taken of suturing the wound angles when reconstructing the bladder cavity. At the concluding stage of the operation the walls of the bladder are duplicated by wrapping the apical flap stripped of its mucosa over the reconstructed bladder. The flap is turned over to the front along the line of sutures and laid flat on the anterior, lateral and posterior walls (Fig. 1). A suprapubic cystostomy is made for draining urine during the postoperative period, because a full bladder may lead to urine leaking from the wound and to disruption of the yet weak connections between the walls and the flap. In the presence of obstructive uropathy, autocystoduplication is combined with resection of the urinary bladder neck.

On histological examination of bladder tissue (of the material excised during operation) is was found that the number of muscle fibres had diminished and been replaced by connective tissue. Degeneration of tissue was more marked in the submucous layer. The nervous system of the bladder wall was little supplied with ganglia and nerve fibres. Some of them showed reactive or degenerative changes.

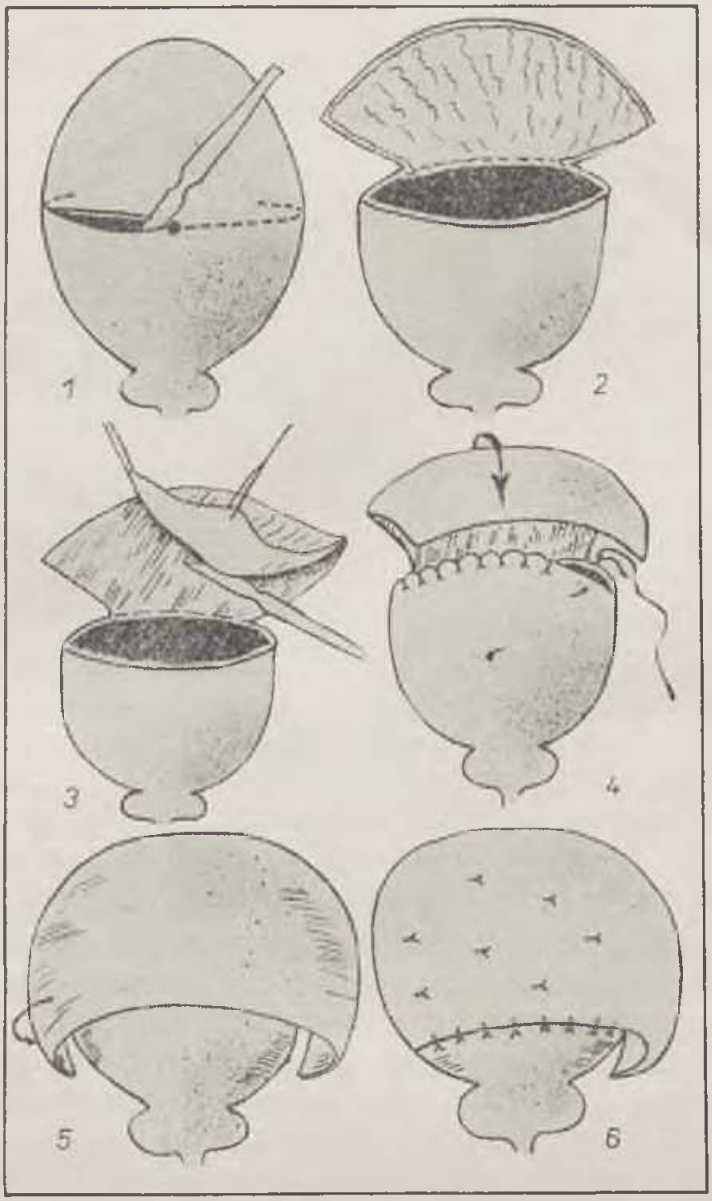

Fig. 1. Diagram of stages of autocystoduplication

The results of the operation were appraised with regard to intensification of the urge to urinate, the degree the bladder was emptied and the amount of residual urine, as well as to improvement of kidney function.

All the 30 patients well tolerated the operation. However, in eight patients, due to severe chronic kidney failure, a suprapubic cystostomy had to be

established for the first postoperative stage. A good result, i.e. intensification of the urge to urinate, restoration of controlled micturition at will and complete emptying of the bladder of urine was achieved in 21, partial effect (decreased volume of urinary bladder and of residual urine down to 50 ml, restoration of the urge to urinate only when the bladder was filled to the maximum) was achieved in four patients. In another four patients, the condition after operation remained as it had been prior to it. One patient died three months after operation from exacerbation of pyelonephritis and increasing chronic kidney failure.

In six patients suffering from neurogenic atony of the urinary bladder, the authors employed the method of reinforcing the detrusor by applying flaps of the rectus abdominis (Thevernot, 1913; Leytes et al., 1971). The surgical technique of this operation is simple and does not present any difficulties. After stripping the urinary bladder of its peritoneum, two vertical muscle flaps are formed from the rectus abdominis and fixed to the bladder walls after spreading them flat. The ends of the flaps are sutured to one another on the posterior wall of the bladder like a sling (Fig. 2).

On discharge from hospital, four patients were capable of emptying their urinary bladders with no residual urine left. In two patients the condition remained as it had been prior to operation. Improvement of the patient's condition after "remuscularization" depends on several factors: reinnervation and revascularization of the paralysed detrusor and on its mechanical reinforcement.

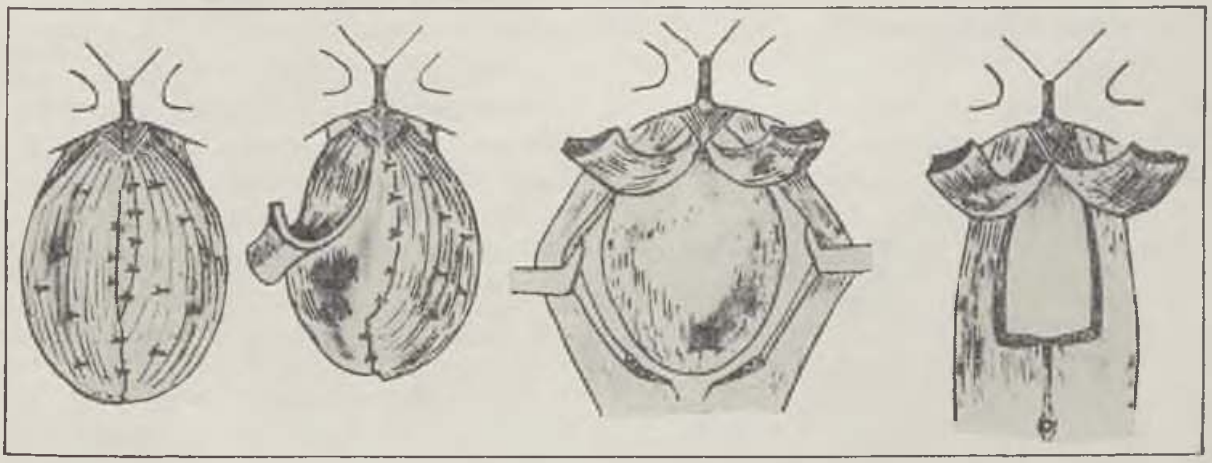

Fig. 2. Diagram of operation for reinforcing bladder detrusor with flaps from rectus abdominis

Thus both the experimental and clinical results permit to recommend autocystoduplication as a method of treatment of neurogenic atony of the urinary bladder; reinforcement of the detrusor with flaps from the rectus abdominis is indicated in patients suffering from neurogenic bladder atony just as ileovesicopexy.

B. K.

SUMMARY

The communication deals with the method of treatment of myoneurogenic atony of the urinary bladder developing from disorders of the intramural nervous system. The principle of the operation is duplication of the bladder walls (autocystoduplication) which was first elaborated in experiments on 27 dogs.

From 1966 to 1972, 30 patients suffering from myoneurogenic atony were operated on by this method. In 21 of them micturition at will was restored. In four patients the result was only partial and in another four the condition remained as it had been prior to operation. One patient died three months after operation from exacerbation of chronic pyelonephritis and chronic kidney failure.

In six patients suffering from neurogenic atony of the urinary bladder, the detrusor was reinforced by application of two flaps from the rectus abdominis. In four of them micturition at will was restored and in two the condition remained as it had been prior to operation.

RÉSUMÉ

Sur les opérations plastiques de la vessie dans les troubles neurogènes de la miction

N. E. Savtchenko V. A. Mokhort A. A. Gres

On a expliqué le traitement de l'atonie de la vessie apparaissant dans les troubles du système nerveux intramural. C'était le redoublement de la paroi de la vessie (auto-redoublement de la vessie) qui a été utilisé comme traitement chirurgical fondamental et qui, tout d'abord, a été élaboré expérimentalement sur 27 chiens.

A la clinique où travaillent les auteurs, 30 malades ont été opérés à cause d'une atonie neurogène dans la période de 1966 à 1972. La miction volitive a été recouvrée chez 21 patients. Un effet partiel s'est présenté chez 4 malades et chez 4 malades ultérieurs l'état ne s'est pas changé. Un patient est mort 3 mois après l'opération de l'exacerbation d'une pyélonephrite chronique et de l'insuffisance chronique des reins.

Le renforcement du detrusor vesicae par le lambeau du m. rectus abdominis a été utilisé chez 6 malades avec l'atonie neurogène. La miction volitive a été recouvré chez 4 patients, mais chez 2 l'état est resté sans changement.

ZUSAMMENFASSUNG

Über plastische Operationen der Harnblase bei neurogenen Harnausscheidungstörungen

N. E. Sawtschenko, V. A. Mochort, A. A. Gres

Die Autoren erörterten die Behandlung der myogenen Harnblasenatonie, die sich bei Störungen des intramuralen Nervensystems entwickelt. Als grundlegende chirurgische Behandlungsmethode wurde die Verdoppelung der Harnblasenwand (Autozystoduplikatur) angewandt, die vorher experimentell an 27 Hunden ausgearbeitet wurde.

An der Klinik, an der die Autoren tätig sind, wurden im Zeitraum 1966 bis 1972 30 Kranke wegen neurogener Atonie operiert. Bei 21 Kranken hat sich der willenbedingte Harnauslass wiederhergestellt. Bei vier Kranken wurde ein Teileffekt erzielt und bei weiteren vier blieb der Zustand unverändert. Ein Kranker starb drei Monate nach Operation auf Exazerbation einer chronischen Pyelonephritis und auf chronische Niereninsuffizienz.

Bei sechs Kranken mit neurogener Harnblasenatonie wurden zur Verstärkung des Detrusor Lappen aus m. rectus abdominis benutzt. Bei vier Kranken hat sich der willenbedingte Harnauslass wiederhergestellt, bei zwei blieb jedoch der Zustand unverändert.

RESUMEN

Sobre las operaciones plásticas de la vejiga urinaria en trastornos neurógenos de la micción

N. E. Savchenko, V. A. Mojort, A. A. Gres

Fue explicado el tratamiento de la atonía miogena de la vejiga que aparece en los trastornos del sistema nervioso intramural. Como tratamiento quirúrgico fundamental fue empleada una reduplicación de la pared de la vejiga urinaria (autocistoduplicación) el que fue elaborado primeramente en 27 perros.

En la clínica, donde los autores trabajan, 30 enfermos fueron operados por atonía neurógena en el período del año 1966 al 1972. En 21 pacientes micción volitiva fue recobrada. En cuatro enfermos fue conseguido efecto parcial y en cuatro más el estado no cambió. Un paciente murió 3 meses después de la operación de la exacerbación de pielonefritis crónica y de insuficiencia renal crónica.

En 6 enfermos con atonía neurógena de la vejiga fue empleado reforzamiento del detrusor de la vejiga mediante lóbulos del m. rectus abdominis. En 4 pacientes micción volitiva fue recobrada, en dos el estado quedó sin cambio alguno.

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SEVERE BURNS OF HAND

D. RANEV, M. MIRCHEV, P. SYNTEV

Severe burns of the hand may be considered those where not only the skin was affected by the thermic agent, but also the anatomical structures lying under the skin.

The present paper is based on the observation of 457 hands in 383 patients operated on at the Department.

Such burns are usually the consequence of industrial trauma in patients at a productive age. Most frequently they are found on the dorsal aspect of the hand. The causes for this are basically threefold: 1) the usual position of the hand during work; 2) instinctively clenching a fist in the face of danger; 3) the dorsal aspect of the hand is covered with thin skin which has a thin layer of subcutaneous fat giving little protection to the tissues and structures lying underneath.

Every severe burn in this region involves damage to the extensor tendons, the joints and the vessel and nerve bundles, which leads to severe contractures with partial or complete loss of function.

SURGICAL TREATMENT

The authors' surgical procedure is always determined by the character and location of the damaged tissues and aimed at the earliest, most reliable and atraumatical coverage of the wound surfaces taking proper regard of the patient's psyche at the same time. It should be emphasized that both holds true for large burns of the body. This has made the authors to come to giving preference to free-skin transplantation.

They also refrain from early bloody necrectomy, because its employment not always permits to determine the depth of the burn. Incorrect assessment of the depth leads to unnecessary and harmful radicalism or to failure of removing tissues with dubious viability. In both cases the results of surgical treatment are poor. (2).

Against oedema, vascular rigidity and in order to limit necrosis, the authors employ hydrotehrapy starting with the first change of dressings. From the second week, they carry out bloodless necrectomy or separation of necrotic

parts using 40% salycilic-acid ointment, taking care not to expose important functional structures (tendons and joint capsules). Surgical treatment is started by the end of the second week. On surgical treatment of the wound, granulation tissue is carefully removed, leaving a thin fibrin film on the surface of tendons in order to prevent adhesion of the tendons to the skin grafts. In case the superficial layer of the tendon has become necrotic, it is removed by tangential

Fig. 1. 48 hrs after employement of 40% salycilic-acid ointment on surface of necrosic skin which can easily be taken of without causing bleeding

excision, leaving in place even the smallest viable parts. Autologous skin grafts take well, although they form adhesions with the tendons thus leading to limitation of movements. In case the tendon has undergone complete necrosis, it is also removed (1, 2).

In destruction of the capsules of metacarpophalangeal and interphalangeal joints, the free-skin graft is placed directly on them with the joints in a position of maximum flexion. This mesaure prevents development of contractures (4, 5).

When both the tendons and joint capsules are damaged, removal of necrotic parts sometimes leads to exposure of joints. In these cases the joint cartilage is usually not affected and is, therefore, left alone but the joints are immobilized in a functional position with Kirschner wires. In the treatment of the wounds by this method, the authors achieved good take of the transplants, but limited movement joints.

If in burns of the hand parts of metacarpal or phalangeal bones are damaged, the burned cortical layer of bone is removed at the same time the soft tissues are treated. This is done using a thin chisel or electrophoresis or other less traumatic methods which do not threaten the integrity of the bone. The bone treated in this way forms quite a good bed for free skin grafts which, however, fully adhere to this site.

In cases, where bone and joints have been exposed, the cartilage is most frequently also damaged and must be removed. In such a case the bone is treated in the way described above and after having removed the articular

Figs. 2, 3. Autologous skin grafts sutured on top of undamaged joint capsules

cartilage the joint is arthrodesed in a functional position using a Kirschner wire (1, 2).

If the phalanges are badly damaged, the authors do not resort to amputation endeavouring to save as much viable bone tissue as possible; thus ensuring the best chances for later reconstruction.

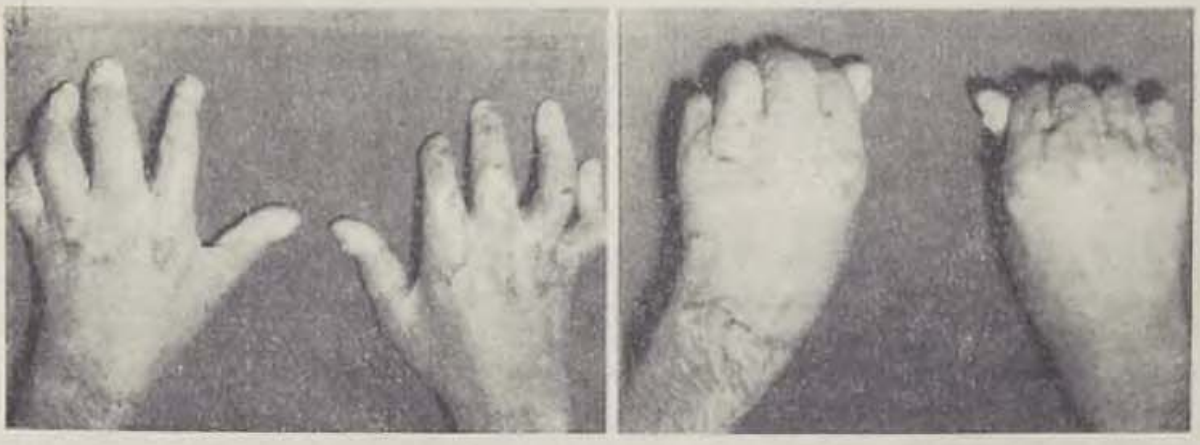
In absolute indication for amputation, exarticulation is considerad the method of choice (3, 6). The indubitable advantages of this method lie in that loss of blood from the bleeding bone is avoided, so is adhesion to the scar and the marrow cavity remains unaffected. The soft tissues left serve the formation of the amputation stump.

This method of coverage of the wound surfaces, as used by the authors in severe burns of the hand, permits to rapidly restore the skin integument and

Figs. 4, 5. Autologous skin grafts sutured to damaged joints after their immobilization with Kirschner wires

save the functional structures which have not been damaged by the thermic agent, so that function of the hand may be best restored, provided correct and consequent rehabilitation is applied.

During subsequent reconstructive operations, firmly attached and immobile skin grafts are replaced by new grafts of fullthickness skin by one of the methods of pedicle plasty. Primary employment of pedicle grafts on wound



Figs. 6, 7. Late postoperative result

surfaces in burns is hard to realize because of the seriously impaired general condition in these patients who usually have also suffered large burns on the body. For successful treatment the surgeon must be well experienced and devote much care to it, so should the rehabilitation worker. The patient must give his whole cooperation to it. B. K.

SUMMARY

The paper is based on the observation of 457 hands in 383 patients.

The authors give an account of their point of view with regard to the treatment of severe burns of the hand. They explain their reason for postponing early necretomy and for the individual approach to each patient. They consider freeskin grafting the method of choice for protection and early coverage of wound surfaces of the burned hand. The methods of surgical treatment, when its structures and regions have been damaged by the thermic agent, are explained.

RÉSUMÉ

Brûlures graves des mains

D. Ranev, M. Mirtshev, P. Syntev

L'étude consiste en observation de 452 mains chez 383 malades ayant des brûlures de la main. On présente les raisons existant pour refuser la necrectomie sanglante précoce et même pour la nécessité d'une manière individuelle de traiter différents malades. La plastie cutanée est entreprise comme le meilleur mode de prévention et de couverture précoce des surfaces blessées d'une main brûlée. On explique le traitement chirurgical des brûlures graves de la main, s'il existe affection des différentes structures et régions.

ZUSAMMENFASSUNG

Schwere Verbrennungen der Hände

D. Ranew, M. Mirtschew, P. Syntew

Die Arbeit beruht auf der Beobachtung von 452 Händen bei 383 Kranken mit Händeverbrennungen. Es werden Gründe angegeben, die den Aufschub der frühzeitigen blutigen Nekrektomie und die Notwendigkeit des individuellen Herangehens an jeden Kranken befürworten. Freie Hautplastik unternimmt man als beste Methode der Prophylaxe und der frühzeitigen Deckung von Wundflächen der verbrannten Hand. Die Autoren erläutern die Methode der chirurgischen Behandlung schwerer Handverbrennungen bei der Verletzung verschiedener Strukturen und Gegenden.

RESUMEN

Quemaduras graves de la mano

D. Ranev, M. Mirchev, P. Sintev

El estudio se basa en la observación de 452 manos en 383 pacientes con quemaduras de la mano. Están presentados los argumentos para el aplazamiento de una necrectomía temprana y para la necesidad de un acceso individual del tratamiento a cada paciente. La plástica cutánea libre se hace como el óptimo modo de prevención y cubierta temprana de áreas de heridas de la mano quemada. Se explica el modo quirúrgico del tratamiento de quemaduras graves en caso de varias estructuras y áreas afectadas.

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ABNORMAL FLEXOR POLLICIS LONGUS SHEATH
Case report

N. I. ELSAHY

The sheath of the flexor pollicis longus tendon is usually separate from other tendons, however, in 50 % of the population, it communicates with the common flexor sheath (1 & 2) (which envelops the flexor digitorum superficialis and profundus tendons). Communication between the flexor pollicis longus sheath and the flexor carpi radialis and its sheath has never been reported before. The purpose of this paper is to report such a case and to suggest its possible surgical importance.

CASE REPORT

A 20 year old male had injured his right hand. In addition to the laceration, there was complete division of the flexor pollicis longus tendon. Its exploration above the wrist revealed an abnormal connection between its sheath, and the tendon and sheath of the flexor carpi radialis. Pulling the proximal end of the severed flexor pollicis longus tendon resulted in flexion of the wrist joint. Further dissection showed extension of the two layers of the flexor pollicis longus sheath to the flexor carpi radialis tendon, encircling it and its sheath up to one inch above the wrist (Fig. 1 & 2).

DISCUSSION

Infection of the synovial sheath of the flexor pollicis longus may in 50 % of cases affect not only the thumb but also all the flexor tendons of the fingers (1). If there is in abnormal connection between the sheaths of the flexor pollicis longus and the flexor carpi radialis as in the case reported, infection of the sheath of the flexor pollicis longus may affect the thumb and also spread above the wrist along the flexor carpi radialis tendon. The reverse may occur if the infection started in the sheath of the flexor carpi radialis. This communication may also add difficulty in identification of the flexor pollicis longus tendon above the wrist when tendon repair or advancement is indicated. In addition, it may be a factor in post-operative adhesion following tendon repair in that area.

Fig. 1 — The upper forceps is underneath the flexor pollicis longus muscle and the tendon, and the lower forceps is holding the proximal stump of the divided tendon. The retractor is retracting the flexor carpi radialis tendon. Notice the abnormal connection between the two tendons. — Fig. 2 — The sheath around the flexor pollicis longus tendon has been opened and the tendon reflected upward. Notice its extension and communication with that of the flexor carpi radialis tendon

SUMMARY

Abnormal connection between the sheath of the flexor pollicis longus and the flexor carpi radialis has been described. Its surgical importance can be summarized as follows:

1 — Infection may spread from one sheath to the other.

2 — It adds difficulty in identification of the flexor pollicis longus tendon above the wrist.

3 — It may cause post-operative adhesion following tendon repair.

RÉSUMÉ

Anomalie de la capsule de musculus flexor pollicis longus

N. I. Elsahy

On décrit une jonction anormale entre les capsules de m. flexor pollicis longus et m. flexor carpi radialis. L'importance de cette anomalie du point de vue chirurgicale est suivante:

1⁰ l'infection se peut répandre d'une capsule à l'autre,

2⁰ il y a des difficultés à identifier les tendons de m. flexor pollicis longus au-dessus du carpe,

3⁰ des adhésions peuvent se présenter après une opération réparatrice des tendons.

ZUSAMMENFASSUNG

Abnormalität der Kapsel des m. flexoris pollicis longus

N. I. Elsahy

Ein Fall abnormaler Verbindung zwischen den Kapseln des m. flexoris pollicis longus und m. flexor carpi radialis wurde beschreiben. Die chirurgische Bedeutung der Abnormalität kann folgends zusammengefasst werden:

1. aus einer Kapsel in die andere kann sich Infektion verbreiten,

2. es entstehen Schwierigkeiten mit der Identifizierung der Sehne des m. flexoris pollicis longi oberhalb dem Handgelenk,

3. nach einer reparativen Sehnenoperation können sich Verwachsungen bilden.

RESUMEN

Abnormalidad de la cápsula del m. flexor pollicis longus

N. I. Elsahy

Está descrito un caso de una juntura abnormal entre las cápsulas del m. flexor pollicis longus y del m. flexor carpi radialis. La importancia quirúrgica de éesta abnormalidad puede ser resumida en lo siguiente:

1. infección puede extenderse de una cápsula a la otra,

2. se presentan dificuldades con la identificación del m. flexor pollicis longus sobre el carpo,

3. después de una operación reparativa de los tendones pueden presentarse adhesiones.

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THE USE OF THE TAIL OF THE TRANSPOSED FLAP

N. I. ELSAHY

In the classical form of transposition flap, it is necessary to triangulate the defect (1) and to obtain a pointed end at the donor site for its closure. At both locations, normal tissue must be sacrificed. The amount of this wasted tissue, in addition to that of the primary defect, make closure of the donor site by direct suturing impractical. Closure can be achieved with the use of a biloped flap or with a skin graft. The former attributes an extra scar while the latter gives poor cosmetic results when applied to the face. Accordingly, transposition flap is used mainly outside the face (1). So that it might be used more often, the following technique was devised.

OPERATIVE TECHNIQUE

A transposition flap was designed in an area adjacent to the defect. It had the same shape and size of the defect in addition to a triagular area at its apex (the tail of the flap) (Fig. 1). It was not necessary to triagulate the defect,

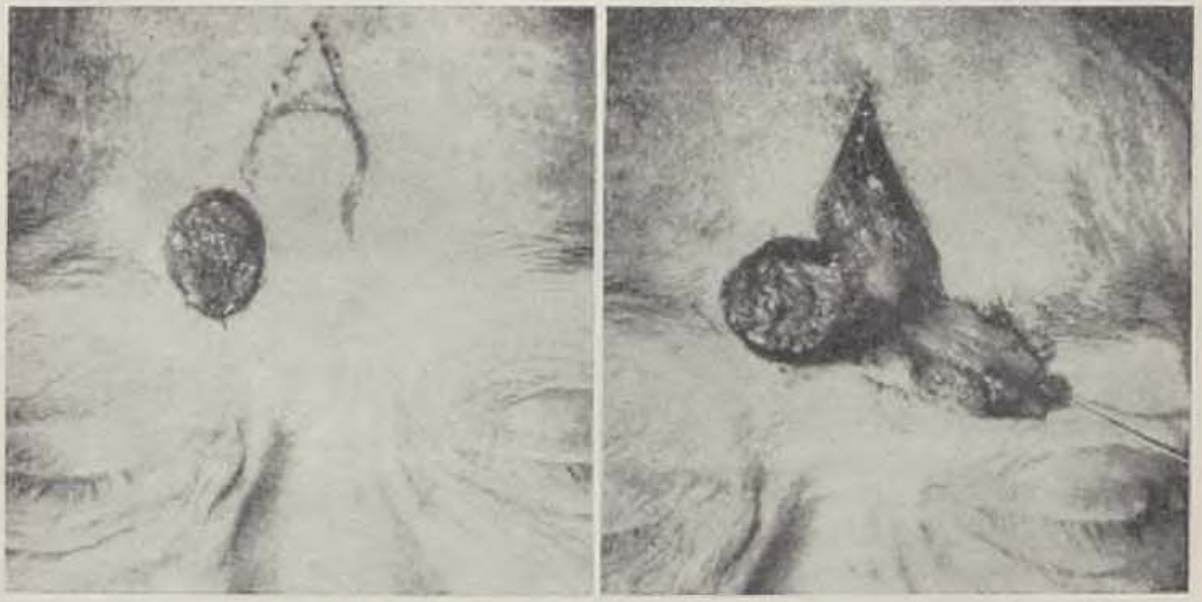

Fig. 1: The transposed flap and its tail. — Fig. 2: Elevation of the flap

Fig. 3: The flap is transposed and a line opposite its tail is marked. — Fig. 4: The flap designed to cover a rounded defect in the upper lip

nor to outline the flap as a square which is the classical shape. The flap was then elevated (Fig. 2). The edges were undermined. A skin hook inserted at the junction of the primary and secondary defect was advanced toward a similar point on the opposite side (Fig. 3). The flap was then lifted over normal skin and let down into the defect. Opposite the tail of the flap — a line was marked (Fig. 3). Incision along that line transformed it into

Fig. 5: The flap designed to cover a rounded defect in the nose. — Fig. 6: End result of Fig. 4 and 5. (Unfortunately, the ink used for marking discoloured the edges of the flap.)

a triangular defect in which the tail of the flap was fitted — this released tension and facilitated mobilization of tissue for direct closure of the donor site. The technique was used in different areas of the face (Fig. 4, 5, 6).

DISCUSSION

The technique offers the following advantages:

1 — Simplicity

2 — No sacrificing of normal tissue

3 — No tension on the suture lines

4 — No need to change the shape of the defect. Rounded defects, which are common after excision of skin tumors, can easily be closed using this technique. This eliminates the tendancy to triangulate the defect during excision of malignant tumors of the skin.

SUMMARY

The use of the tail of the transposed flap offers a useful method of repair in certain defects about the face.

RÉSUMÉ

Transposition du lambeau cutané avec un supplément

N. I. Elsahy

L'utilisation du lambeau cutané transféré avec un supplément s'est montrée une méthode convenable dans la réparation des certains défauts sur la face.

ZUSAMMENFASSUNG

Transposition des Hautlappens mit Zugabe

N. I. Elsahy

Die Anwendung des transponierten Hautlappens mit Zugabe bewährte sich als geeignete Methode bei der Korrektur einiger Gesichtsdefekte.

RESUMEN

Transposición del lóbulo cutáneo con suplemento

N. I. Elsahy

Empleo de un lóbulo cutáneo transpuesto con un suplemento se ha mostrado como un método conveniente en la corrección de algunos defectos en la cara.

REFERENCES

1. **McGregor, I. A.**: Fundamental Techniques of Plastic Surgery — forward by Illingworth, C.; 5th ed., Edinburgh and London, Churchill Livingstone 1972, p. 122.

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IN MEMORIAM
OF ALEXANDER ALEXANDROVICH LIMBERG

Soviet surgery has suffered a great loss. On Dec. 28, 1974, Prof. Alexander Alexandrovich Limberg, member-correspondent of the Soviet Academy of Medical Sciences, laurate of the State Prize, Merited Scientist of the Russian Socialist Federal Soviet Republic, doctor of medical sciences, died at the age of 81 after serious illness. He was one of the most distinguished specialists in plastic and reconstructive surgery of the face.

A. A. Limberg was born on Jan. 24, 1894, as the son of A. K. Limberg, the famous professor at the Clinical Institute of the Postgraduate Medical School. After graduating from the dental-surgeon school in 1916 and the Military Medical Academy in 1919, A. A. Limberg started to specializace in maxillofacial surgery. Ever since his years of self-dependent work, he successfully combined surgical practice with scientific and teaching activities. In 1920 he became assistent at the Department of Odontology of the

First Leningrad Medical Institute and in 1924 he was promoted to the rank of professor of the Second Leningrad Medical Institute and surgeon-in-chief of the newly established Maxillofacial Department of the Leningrad Institute of Traumatology and Orthopaedics.

In 1935 A. A. Limberg initiated establishment of the Department of Maxillofacial Surgery at the Leningrad Postgraduate Medical School, which he then headed up to July, 1974. During the Great Patriotic War he also worked as consultant surgeon at a number of large hospitals.

A. A. Limberg has made great contributions to the development of reconstructive surgery of the face and jaws. He is the author of original methods of bone plasty of the mandible, the surgical treatment of congenital clefts of the upper lip and palate, of free-skin transplantation, transplantation and utilization of pedicle grafts in defects in the face. Compactectomy, as recommended by him, for preparation of the bone prior to orthodontic correction of the shape of the mandible, is widely used.

A. A. Limberg devoted many years of work to the elaboration of the theoretical foundations of local plasty. The first paper to be published on this subject was issued in 1927, but in 1946 he published a monograph on "Mathematical Foudations of Local Plasty on the Surface of the Mandibular Body". In this monograph, the mathematical analysis of local plasties and the theoretical foundations and systematization of the various methods of local plasty, were presented for the first time. This permitted to make planning and execution of these operation more precise and thus to utilize them on a large scale in surgical practice. For this monograph, A. A. Limberg received the Second-Degree State Prize for 1946.

The 40-year experience of A. A. Limberg and the departments he was in charge of, was published in the manual "Planning of Local Plasties" which was issued in 1963. In 1967 thos monograph was translated into German and issued at Jena (GDR).

A. A. Limberg left a rich scientific legacy. He published more than 150 scientific papers on various sections of stomatology and reconstructive surgery of the face, including two textbooks on surgical stomatology and separate chapters in ten large manuals and monographs.

A. A. Limberg took a great interest in the eductaion of scientific cadres. A total of 36 candidate and nine doctor dissertations were completed under his leadership.

A. A. Limberg was, not once, the organizer and participant of all-union and republican congresses and scientific conferences. He became a member of the Board of the Pirogov Surgical Society. He successfully represented the Soviet Union by presentations of papers on plastic surgery at international congresses in the USA, France, Czechoslovakia, Bulgaria, Italy and Yugoslavia.

The Soviet Government highly appraised A. A. Limberg's scientific work and social activities. In 1945 he was elected member-correspondent of the Soviet Academy of Medical Sciences and in 1968 awarded the title of Merited Scientist of the Russian Socialist Federal Soviet Republic. He also received the Order of Lenin, the Red Banner of Work, the First-Degree Order of the Patriotic War and several medals.

The Soviet Union has not only lost a prominent scientist and surgeon but also a brilliant and educated leader and teacher, and a modest, gentle and charming person.

The lucid memory of Alexander Alexandrovich Limberg will for ever remain in the hearts of all who knew and loved him. Group of collaborators and scientists

NEWS

5th. International Congress on Burn Injuries

June 18—23, 1978, Stockholm, Sweden

President: Bent Sørensen (Denmark)

Chairman of Scientific Arrangements: Gösta Arturson (Sweden)

Chairman of Local Arrangements: Bengt Nylén (Sweden)

Members of the Committee: Börje Sundell (Finland), Ole Ugland (Norway), Arni Bjørnsson (Iceland)

The Vth. International Congress on Burn Injuries is scheduled from 18th. to 23rd. of June 1978.

As decided at the IVth. International Congress the venue of the Vth. International Congress will be Scandinavia, in the city of Stockholm.

President: Bent Sørensen (Denmark)

Chairman of Scientific Arrangements: Gösta Arturson (Sweden)

The Congress hall will be Folkets Hus.

Chairman of Local Arrangments: Bengt Nylén (Sweden).

The first announcement will be issued about November 1976.

For further information please contact the Congress.

Address: Vth. International Congress on Burn Injuries, R E S O, Klara Norra Kyrkogatan 31, 105 24 Stockholm, Sweden.

The Bulgarian Society of Plastic Surgery, branch in Varna, held a Session on December 23rd. 1975 on "Congenital Defects and their Treatment by Plastic Surgery". The Session was dedicated to the 10th anniversary of the death of Academician František Burian, whose name is closely connected with the development of Bulgarian surgery and plasty. The head of the branch, K. Troshev, M.D., CSc., who inaugurated the Session, informed in the introduction all persons present briefly on the life and work of Academician Burian and read his last lecture which the deceased had not been able any more to present himself. Plastic surgeons, orthopedists, stomatosurgeons, pediatric surgeons, ophthalmologists and otolaryngologists participated in the Session. 14 lectures were held and a lively discussion followed. Many of the participants contributed valuable findings on congenital defects in north-eastern Bulgaria.

Prof. Dr. D. Ranev

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