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COMBINED ONE-STAGE PLASTY OF A TOTAL DEFECT IN FACIAL PLASTIC AND RECONSTRUCTIVE SURGERY

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Abstract

Nasal defects are a common human pathology and are formed as a result of trauma, removal of neoplasms or congenital pathology. Elimination of a nose defect is a complex problem of reconstructive surgery. Historically, information about the restoration of the nose dates back to 3000 years BC. In the post-war years the F.M. Khitrov method (1) was widely used in the USSR, which has not lost its relevance at the present time. The advantage of the method is the possibility of harvesting a sufficient volume of tissues for both side, the outer cover and the inner lining and the creating conditions for forming the nose frame. The disadvantage of the method is multi-stage, the risk of violation of the trophic flap at the stages of treatment, inconsistency of texture and color to local tissues.

The aim of the work is to improve methods for eliminating total nasal defects. On the example of one clinical case, a method for restoring the main anatomical structures of the nose is described. The use of autologous cartilage and a paramedian forehead flap is the optimal solution for the elimination of total nasal defects.

Беттің пластикалық және реконструктивтік хирургиясындағы мұрынның толық ақауының қосарланған бір сатылы пластикасы

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Тұжырым

Мұрын ақаулары адамдарда жиі кездесетін патология болып табылады және ол жарақаттану, неоплазмаларды алу немесе туа біткен патология нәтижесінде пайда болады. Мұрын ақауын кетіру реконструктивтік хирургияның күрделі мәселесі болып табылады. Тарихи тілмен айтсақ, мұрынды қалпына келтіру туралы алғашқы мәліметтер жыл санаудан 3000 жыл бұрын жазылған. Соғыстан кейінгі жылдарда КСРО-да Ф.М.Хитров әдісі (1) кеңінен қолданылды, ол қазіргі уақытта да өзектілігін жойған жоқ. Әдістің артықшылығы - сыртқы жамылғы үшін де, ішкі төсем үшін де тіндердің жеткілікті көлемін жинау және мұрын жақтауын қайта отырғызу үшін жағдай жасау мүмкіндігі. Әдістің ыңғайсыздығы - көп сатылы болуы, емдеу кезеңдерінде тіндердің трофикасының бұзылу қаупі және айналадағы тіндермен құрылымы мен түстің сәйкес келмеуі.

Жұмыстың мақсаты – мұрынның толық ақауларын қалпына келтіру әдістерін жетілдіру. Бір клиникалық жағдайдың мысалында мұрынның негізгі анатомиялық құрылымдарын орнына қою әдісі сипатталған. Мұрынның жалпы ақауларын жоюдың оңтайлы шешімі өз шеміршегі мен маңдайдың парамедиялық қақпағын қолдану болып табылады.

Түйінді сөздер:

бет пластикалық хирургиясы,
мұрын ақауы, парамедиандық
маңдай қақпағы, операцияны
жоспарлау

Комбинированная одноэтапная пластика тотального дефекта в пластической и реконструктивной хирургии лица

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Аннотация

Дефекты носа относятся к часто встречающейся патологии человека и образуются в результате травм, удаления новообразований или врожденной патологии. Устранение дефекта носа представляет собой сложную проблему реконструктивно-восстановительной хирургии. В историческом плане сведения о восстановлении носа относятся к 3000 гг. до н.э. В послевоенные годы в СССР широко применялся метод Ф.М.Хитрова (1), который не потерял свою актуальность и в настоящее время. Преимуществом метода является возможность заготовки достаточного объема тканей как для наружного покрова, так и для внутренней выстилки и создание условий для подсадки каркаса носа. Неудобством метода является многоэтапность, риск нарушения трофики лоскута на этапах лечения, несоответствие текстуры и цвета местным тканям.

Целью работы является усовершенствование метода по устранению тотальных дефектов носа. На примере одного клинического случая описан метод восстановления основных анатомических структур носа. Использование аутохряща и парамедианного лоскута лба является оптимальным решением для устранения тотальных дефектов носа.

Конфликт интересов:

Авторы заявляют об отсутствии
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Ключевые слова:

пластическая хирургия лица,
дефект носа, парамедиальный
лоскут со лба, планирование
операции

Introduction

Currently, paramedial forehead flap is widely used for nose reconstruction. The advantage of the method is that it corresponds in texture and color to local tissues, as well as the ability to cut out a flap on a thinner leg, since it contains a vascular bundle. (2). According to the results of studies by F. Menick (2002), this flap is the most effective for eliminating defects in the tip, alar shape, as well as total and subtotal defects of the nose (3).

Many works have been devoted to the application of this method and many of its modifications have been developed [9–11]. However, all of them require a multi-step performance. The purpose of this work was to solve the problem of one-stage plastic surgery of a total nasal defect.

Case study

A man patient visited the clinic complaining of a total nose defect, he had a nasal trauma history. Previously, 5 years before he was treated at the center "Medical park".

In order to plan the tactics of surgical treatment in the preoperative period and at the stages of surgical treatment, the following studies were carried out:

- multislice tomography (MSCT) of the bones of the facial skeleton
- ultrasound duplex scanning (USDS) of facial vessels to determine the main qualitative and quantitative characteristics of the blood flow of the vascular pedicle flap;
- production of plaster models of the face

with subsequent modeling of the wax pattern of the external nose;

Taking into account the conducted studies and the wishes of the patient, the method of combined one-stage elimination of the nasal defect was chosen.

When planning the operation, the condition of the tissues surrounding the defect was taken into account to solve the issue of the formation of the inner lining, after which the area of the flap being formed was calculated, the length of the feeding leg and the direction of its rotation to the defect were determined. To demonstrate the reconstruction of the external nose, we present a clinical example.

Patient K., 45 years old (Fig.1). Diagnosis: total defect of the nose. Anamnesis: the defect was formed as a result of an injury. When analyzing the defect, it was revealed that the patient had no bone, cartilage (with the exception of a small fragment of the left alar), nasal septum, nasal concha and vomer. Thus, the defect was a single cavity communicating with the maxillary sinuses, the ethmoid labyrinth and was limited by the edges of the pyriform aperture (Fig.1). From the above, we can conclude that in this situation it is possible to form the inner lining of the nasal passages, taking into account the nasal septum and vomer, by tilting the lateral skin flaps from the nasolabial folds with a partial transition to the infraorbital regions, from the interbrow region. To form the form the nasal skeleton, it was decided to use cartilages from the area of synostosis of 6-7-8 ribs.

Figure 1.
General view before surgery



To determine the donor area aforesaid examinations were carried out (MSCT of the bones of the facial skeleton, ultrasonography of facial vessels), a general examination of the forehead area and a patient survey; it was found out whether there were previous injuries in this area. After the frontal area was regarded as an acceptable donor area, a Doppler study was performed monitoring the course of a supratrochlearis, taking into account which the direction of the cut flap was planned. To determine the size of the flaps for the inner lining and the paramedial flap, conventional measurements were carried out using transparent films, and for the nose frame they were guided by a

pre-made plastic model.

At the beginning of the operation, flaps were cut out and formed for the inner lining of the nose (Fig. 2, 3), then the costal cartilages were harvested (Fig. 4, 5), modeling and fixation of the nose frame to the edges of the pyriform aperture and to the palatal plate (Fig. 6). After that, a paramedial flap was cut out from the forehead, which was rotated onto the surface of the nasal basis and the resulting skin defects in the area of the nasolabial folds (Fig. 7). The donor wound was closed by tissue mobilization. At the end of the operation, forming tubes were placed in the nasal passages (Fig. 8)

Figure 2.
Planning of flaps for the internal lining of the nose and paramedial flap





Figure 3.
Formation of the inner
lining of the nose



Figure 4.
Surgical marking of the area for
costal cartilage harvesting



Figure 5.
Costal cartilages for modeling
the basis of the nose

Figure 6.
Placing and fixation of the nasal
frame



Figure 7.
View after surgery

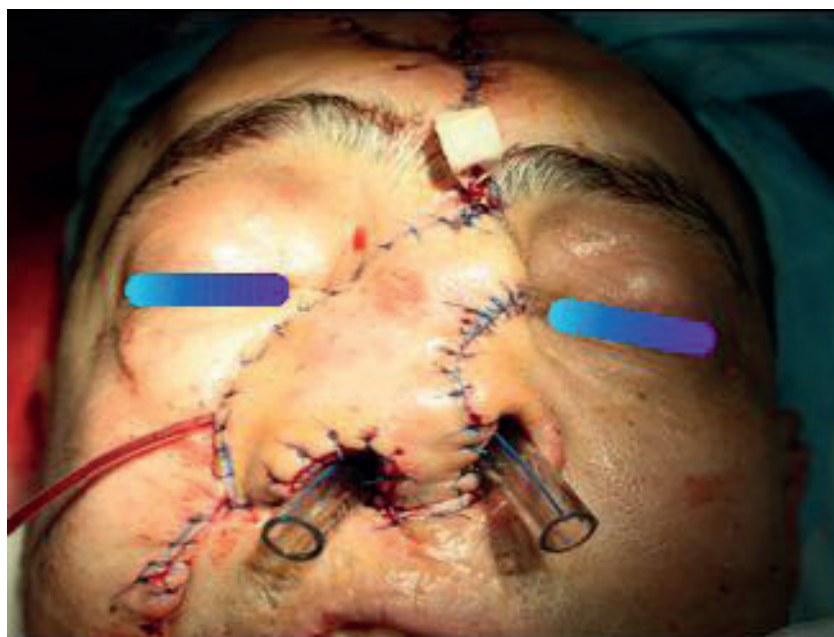


Figure 8.
View 6 months after
the operation





Figure 9.10.
View after nose correction

Conclusions

In the postoperative period, conventional treatment was carried out, which consisted of antibiotics, symptomatic therapy, daily dressings, physiotherapy. The wounds healed by primary tension, nasal breathing stabilized, dryness in the nose, the discharge stopped (Fig. 8). At the insistence

of the patient, 6 months after the operation, the septum and alar of the nose were corrected (Fig. 9,10). The analysis of the operation showed that the most rational approach for the plastic elimination of total nasal defects is the use of a paramedial flap. Rib cartilage is the most suitable material for the formation of the nasal skeleton.

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