VALUE OF FREE SKIN TRANSPLANTATION IN SOLVING PARTIAL NOSE DEFECTS

LILIANA ANDREI[1], I. V. IORDACHE[2]

[1]Hypocrate Medical Centre, Tulcea, [2]"Ovidius" University of Constanţa

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Abstract: *Partial defects of the nose are part of soft tissue defects and represent a major social problem due to the central positioning of the nose at the face level, being an essential element in defining physiognomy. The reconstruction of partial nose defects follows several clinical conditions ranging from post-traumatic defects (or after humans' or animals' bites) up to defects occurred after the excision of some tumour formations, either benign or malignant, and where the direct closure of the wound is no longer possible. The authors present a retrospective clinical study underlining the value of free skin transplant (autotransplant) in partial restoration of soft tissue defects of the nose, pointing out that a "classical" reconstruction procedure maintains its clinical value when used with a clear indication and the cosmetic results are of good quality.*

Cuvinte cheie: *defecte de părţi moi, autotransplant cutanat, piramidă nazală*

Rezumat: *Defectele parţiale ale nasului – este vorba de defectele parţiale de părţi moi – reprezintă o problemă socială majoră în condiţiile în care prin poziţia sa centrală la nivelul feţei nasul reprezintă un element esenţial în definirea fizionomiei. Repararea defectelor parţiale ale nasului sunt urmare a o serie de condiţii clinice pornind de la defectele posttraumatice (sau după muşcătură de om sau animale), şi până la defectele apărute după excizia unor formaţiuni tumorale fie ele benigne sau maligne şi unde „închiderea" directă a plăgii nu mai este posibilă. Autorii prezintă un studiu clinic retrospectiv în care este subliniată valoarea transplantului liber de piele (autotransplant) în refacerea defectelor parţiale de părţi moi la nivelul nasului subliniindu-se faptul că un procedeu reconstructiv „clasic" îşi păstrează valoarea clinică atunci când este folosit cu indicaţia clară iar rezultatele cosmetice sunt de o bună calitate.*

INTRODUCTION

Replacing or restoring diseased or injured parties has been a dream of man for centuries and the first report of successful human free skin transplant was that of Sir Asthy Cooper in 1817, who used the skin of an amputated thumb to cover the stump of amputation.(1,2) In 1869, Reverdin reported granular wound care through what he called "epidermal transplant". The scientific foundation of transplantation was developed in the last 50-60' years and the immunological basis of transplant rejection was defined by the observations made by Lexer (1911), Schöne (1912) and Gibson (1955).(3)

In the medical literature and especially in surgical practice, both the term of "transplant" and "graft" are used (the term "transplant" is being used especially for organs), but we believe that the correct term is that of "transplant", while the free tissue grafting (respectively, the skin) is free (by definition) from its own movement and the "suture" is achieved by establishing new connections with the vascular receptor.(4)

Free-skin autotransplants preserve their original structure if they are transplanted in a convenient environment from the anatomical and biological point of view (good quality receiving area).(5,6)

Free transplantation of skin - autotransplant, isotransplant, homotransplant - is used in many surgical specialties but the most used is the autotransplant; the donor areas are represented, in principle, by any area of the body able to "donate" healthy skin, except for the face, palms and thenars.

Regarding the technical choices, free skin autotransplant has many forms: free split skin transplant (thin, intermediate, thick) or full thickness free skin transplant (that is the donor area should allow the direct suture after sampling).

The process of attaching the free skin transplant to the receptor area is defined by the phrase "socket of transplants" that goes through three successive phases: feeding by imbibition (up to 72 hours), vascular connection establishment phase by budding (2-5 days) and transplant revascularization phase (5-14 days).(7) Clinically speaking, certain features of the free skin transplant are important; most of the times, the transplant preserves the characteristics of the donor area with the exception of sweat secretion and sensitivity (for the clinician, it is important to take into account certain characteristics, such as: contracting of the transplanted skin, the colour of the transplanted skin, transplanted skin annexes, transplanted skin sensitivity and the regeneration and resistance of the transplanted skin).(8)

PURPOSE

We tried to determine the clinical-surgical value the free skin transplant has in solving partial soft parts of the nasal pyramid.

METHODS

We conducted a retrospective study for the year 2008, on the clinical cases within the Department of Plastic and

[1] Corresponding author: Liliana Andrei, Str. Sălciilor Nr. 8 Tulcea, Judeţul Tulcea e-mail: andrei_liliana16@yahoo.com, tel: +40 722231431
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Reconstructive Microsurgery of the Emergency Clinical County Hospital of Constanţa,

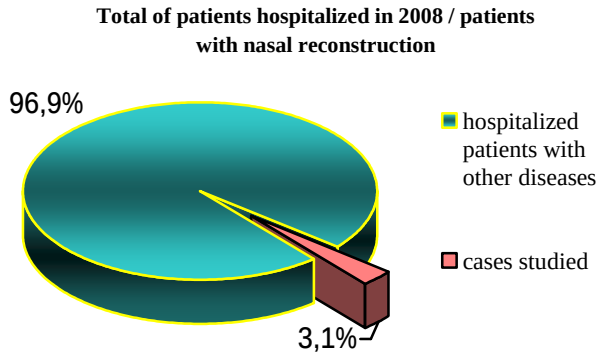
In the year of the study, a number of 868 patients with various diseases were hospitalised and treated, of which a number of 27 were hospitalized for disorders of the nasal pyramid that required partial reconstruction of the nose.

In the study group we included all patients aged over 18 who had partial soft tissue defects of the nose and we excluded the patients who had nasal pyramid complex defects that exceeded 1/3 of the nasal pyramid in volume and who generally required serial reconstruction surgery. The patients who refused to sign the informed consent agreement to undergo surgery for reconstruction purposes were also excluded from the study.

RESULTS AND DISCUSSION

From the procedural point of view, those 27 patients in the study group represented 3.1% of all cases admitted and treated in the clinic of plastic surgery and reconstructive microsurgery in the above-mentioned period of time.

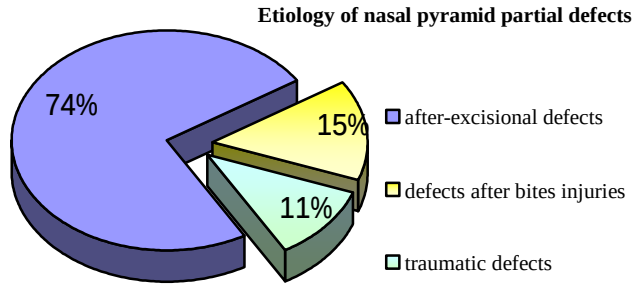
Figure no. 1. Proportion of patients with partial nasal reconstruction



The study group comprised 18 men and 9 women representing 33.33% women and 66.66% men, aged between 18 and 78 years old with a maximum incidence in the age group between 50 - 60 years old during including 21 patients, that is 77.5%.

In terms of etiology, the cases of partial defects of nasal pyramid cases were distributed as shown in the chart below:

Figure no. 2. Distribution of defects included in the study in terms of etiology



It is worth mentioning that, out of the 4 defects after bite injuries, 3 were the result of either man bites or accidental aggression.

Regarding the procedures of reconstruction, the situation of the studied group was as follows:

- 2 patients have been fixed by conducting spontaneous epithelization;
- 2 patients through the use of regional flaps (nasogenian);
- 3 transplant patients have received free composite tissue (auricular)
- 20 patients have been solved by using the free skin autotransplant (full thickness or split skin) all resulting from excised of regional tumours that developed defects that could not benefit from other reconstructive procedure without major cosmetic repercussions.

Figure no. 3. Reconstruction of nasal apex by nasogenian flap

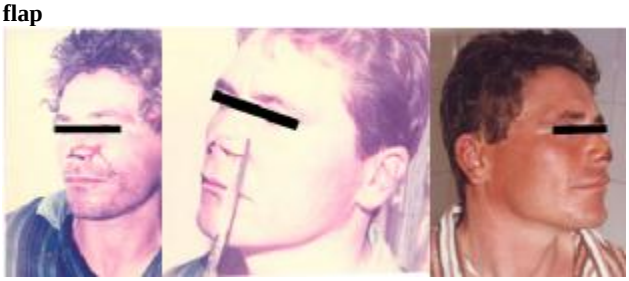


Figure no. 4. Nasal wing reconstruction by composite free skin transplant (right ear)

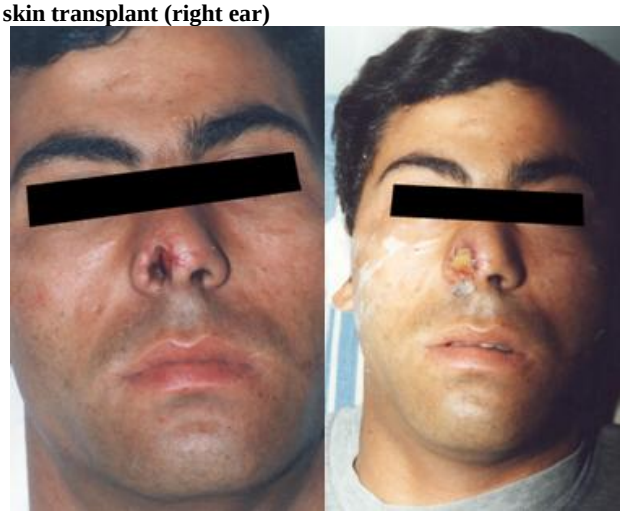


Figure no. 5. Reconstruction with full thickness free skin autotransplant (after-excision defect)

CONCLUSIONS

- The nose, by its central position at the face level is an essential element in defining physiognomy.
- Solving partial nose defects (defects of soft parts) can benefit from a series of reconstruction procedures aimed at restoring the form and the function area.
- Solving partial soft tissue defects after excision is made almost exclusively by the free skin autotransplant that provides good cosmetic looks and has the advantage of easily observing any possible local recurrences.
- The study emphasises that in surgical practice (medical surgery - in general), it worth paying attention to the simple procedures.

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