

The Paramedian Forehead Flap Used in the Reconstruction of Skin Defects of Nasal Dorsum after Basocellular Carcinomas Resection (About 15 Cases)

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DOI: [10.36347/SJMCR.2019.v07i12.019](https://doi.org/10.36347/SJMCR.2019.v07i12.019)

| Received: 16.12.2019 | Accepted: 26.12.2019 | Published: 30.12.2019

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Abstract

Original Research Article

Purpose: evaluate the results of the reconstruction of large nasal dorsum skin damage by paramedian forehead flap after CBC resection and show the interest of this flap. **Materials And Methods:** We performed a retrospective study, during 2 years, of 15 patients undergoing basal cell carcinoma of the nose. They benefited from tumor exeresis and immediate forehead flap reconstruction. **Results:** The average age of our patients was 63.2 years. Male predominance was noted. The nasal dorsum was the most affected unit, and sometimes was extended to the nasal tip. The average size of the skin defects was between 30 and 40 mm. The paramedian forehead flap was used in all patients. The aesthetic and functional results were considered satisfactory. **Conclusion:** The Paramedian forehead flap remains the workhorse of repair of large skin defects of nasal dorsum, sometimes extended to the tip, after the excision of basal cell carcinomas.

Keywords: Nasal dorsum, basocellular carcinomas, skin defects, Repair, paramedian forehead flap.

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INTRODUCTION

The main etiology of skin defects of the nasal pyramid is mainly tumors, dominated by basal cell carcinoma (BCC).

The surgical excision is the only treatment, unfortunately it leads large skin defects. The choice of repair processes remains a challenge for plastic surgeons, because they have to create a shape in 3 dimensions, with aesthetic contours and a skin color and texture, similar to the patients ones, so they can give a result closest to normal.

The purpose of our work is to show the interest of this flap, which remains current. We report a serie of 15 patients from patients operated in our department, for basal cell carcinoma of the nasal dorsum and whose reconstruction required the use of a medial frontal flap.

MATERIAL AND METHODS

We conducted a two-year retrospective study of all patients with basocellular carcinomas of the dorsum and the tip of the nose, and who were supported in the Department of Plastic Surgery of the Mohammed

V Military Teaching Hospital in Rabat, between January 1st, 2017 and December 31st, 2018. They benefited from a nasal reparation with paramedian forehead flap.

Inclusion criteria were: patients with a large loss of non-transfixing skin substance with naked nasal cartilage and mucosal compliance, following removal of a dorsum basocellular carcinomas and sometimes extended to the tip having required a reconstruction.

The exclusion criteria were: patients with basocellular carcinomas, with bone involvement and surrounding structures and lost patients.

The data analysed were age, gender, medical and surgical history (diabetes), the seat and extent of skin defect, monitoring and evolution.

All patients benefited from a two-stage intervention. The results were judged by the surgeon and the patients, themselves, by assessing their functional and aesthetic satisfaction using an evaluation sheet.

RESULTS

We studied 15 files collected over a period of one year. The average age was 63.2 years old with extremes ranging from 48 to 85. They were 9 men and 6 women.

80 % of the skin defect had a size between 30 and 40 mm, located on the dorsum in 12 cases, extended to the nasal tip in 3 cases.

The treatment was performed under local anesthesia alone in 10 patients; The other patients required associated sedation.

All the patients had tumor resection within margins of safety and the skin defect repair at the same time. A systematic extemporaneous examination was also realised.

Histologically, the series comprises 2 cases of CBC sclerodermiform, 7 cases of nodular CBC and 5 cases of invasive CBC and one case of superficial CBC.

The margins of excision were 8mm for sclerodermiforms, 5mm for infiltrants and 3mm for nodular and superficial CBC, all controlled by extemporaneous examination. All skin tumors were previously biopsied.

Skin defect have been cutaneous or musculo-cutaneous; with exposed cartilage in 2/3 of the cases.

All patients received immediate forehead paramedian flap coverage and weaning 4 weeks later (2 operative times).

Our patients were regularly reviewed at our consultation at 15 days postoperatively, at 3 months and then every 6 months.

The evolution was great in most cases; all forehead flaps don't show vascular pain. Early complications were noticed in 4 patients; 2 cases of post-operative hematomas drained on time, and one case of local infection of the flap site; treated with adequate dressings and adapted antibiotherapy, a case of releasing sutures; resumed the day after the intervention.

Minimal late, aesthetic complications, consisting on an "dogear" deformity at the upper edge of the flap in 4 patients, which needed retouching and degreasing under local anesthesia 6months later. The patients and the surgeon were fully satisfied aesthetically and functionally in 90% cases.

The CBC cure rate was satisfactory; absence of tumor recurrence, patients are always followed regularly.



Invasive basal cell carcinoma 78 year old patient



Nasal defect after excision and flap drawing



Flap Technique



Placement of the flap



One Year Results



Final Aspect



50 year old patient, invasive basal cell carcinoma of the nasal dorsum



The paramedian forehead, immediate appearance



Results at 6 months

DISCUSSION

Cutaneous carcinomas are the most common, adults cancers (30% of all cancers). They are also the most common skin cancers, each year about 70,000 new cases in France, 2.8 million cases are diagnosed in the United States.

75% of basal cell carcinomas are developed in the face, head and neck, with the most frequent locations being the nose, eyelids and lips.

The choice of the surgical repair procedure after the carcinological excision of these tumors is decisive on the quality of the nasal reconstruction.

The principles:

- The size and seat that is analyzed according to the aesthetic unity [1, 2].
- Replace each fabric with its best equivalent: the same colors and textures.
- Respect the aesthetic units.

Possible techniques for this kind of skin defect: directed healing or skin grafting can be proposed, but this requires a well vascularised basement. It is also possible to reconstruct the defect by a local flap of rotation or translation. The most common local flaps of the face are the Rieger or Marchac flap, the nasolabial flap, and the jugal advancement flap [3]; but given the topography and extent of PDS in our patients; the flap of choice is the frontal flap.

All defects of our patients are more than 3 centimeters, and sitting at the level of the nasal dorsum, for us it is the ideal indication to realize immediately a Paramedian forehead flap, in 2 times, with weaning and retouching at the top of the flap at 4 weeks; Moreover, the operative parts are checked by an extemporaneous histological examination.

Surgical technique of the paramedian forehead flap: The central part of the forehead is vascularized by vascular anastomotic networks: supraorbital, supratrochlear, infratrochlear, dorsal and angular nasal arteries.

This flap is an axial flap axed on the supratrochlear pedicle. It is vertical with a narrow base. Collateral or terminal branch of the ophthalmic artery branch of the internal carotid artery.

It crosses the orbital rim superior to the deep part of the forehead muscles and corrugator, crosses these muscles and then quickly develops to the subcutaneous tissue, in the upper half of the forehead.

The pedicle is drawn astride the lion's wrinkle, the medial limit is median, the outer limit is opposite the head of the eyebrow. The width of the base must not exceed 15-20mm.

Leaving the flap: The sampling is done in 3 different thicknesses: In the upper part, the dissection is subcutaneous (to reconstruct the loss of substance), this portion is defatted to the maximum. In the middle part, the dissection is submuscular.

In the lower part, the dissection plane is subperiosteal to avoid damaging the supratrochlear pedicle that goes between the corrugator and forehead muscles.

The flap is tilted 180° to the nasal PDS and the suture is made in plan on its lateral and distal edges. Closure of the donor site at the pedicle of the flap, the part corresponding to the loss of substance is left in directed healing or closed after detachment [4].

The weaning of the flap is done at J21, in our series it is realized at 4 weeks by security.

Advantages:

Good vascular reliability and allows large PDS reconstructions.

Disadvantages:

Two operative times and a frontal scar

CONCLUSION

Several surgical procedures can be used to repair the large skin defect of nasal dorsum, sometimes extended to the tip, and after non-transfixant CBC resection, the Forehead Paramedian flap remains an attractive solution, both aesthetically and functionally.

The repair of these defects requires a learning curve and the perfect knowledge of the anatomy and arsenal of therapeutic repair surgery.

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