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ORIGINAL ARTICLE

COMPARATIVE STUDY BETWEEN SKIN GRAFTS AND FLAPS FOR THE TREATING NASAL DEFECTS AFTER BASAL CELL CARCINOMA EXCISION

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ABSTRACT

Background: The most prevalent type of skin cancer that affects the nose is basal cell carcinoma. The best treatment of this cancer is surgical excision with safety margin. After excision the defect that formed can be closed by skin grafts, locoregional flaps and microsurgery.

Aim of study: is to assess the outcomes of skin grafts and flaps used to repair nasal deformities following the removal of basal cell carcinoma from the nose.

Materials and Methods: This study was done in Al- Diwanyia teaching hospital and outpatient private clinic between January,2018 to April ,2024 for 36 patients were complaining from skin defect in the nose after(BCC) excision.The patients divided into two groups , each group consist of 18 patients.

The 1st group managed by skin graft and 2nd group by flaps.

In early follow up we assess the patients for presence of complications like infection ,flap ischemia , graft failure .We follow the patients for 6 months as a visit every month looking for late complications (scar problems ,pigment changes) and patient satisfaction .

Results: We found two patients developed wound infection those who manage by flap ,one patient developed tip nasolabial flap necrosis. Only one patients developed partial skin graft loss. 6 patients who treated by skin graft developed hyperpigmentation problems and this not occur in patients treated by flaps.

Conclusion: There are more advantages for using flap coverage in nasal reconstruction due to better cosmetic outcome and more patients satisfaction

Key Words: skin grafts, locoregional flaps, microsurgery, reconstructing nasal defects

INTRODUCTION

Nasal defects can results from trauma, burn or after tumors resection. In our study we focused on closure of the defects that resulted from basal cell carcinoma. Worldwide, the frequency of skin malignancies has increased; these diseases frequently affect the skin on the face.Most of the time, reconstruction is required once such face malignancies are removed [1]. The nose is the most projecting part of the face make it exposed more to sun light that lead to increasing the risk of skin cancers [2,3,4]. A nasal defect may affect the interior mucosal lining, the skin, cartilage, or bone. , therefore the surgeon who perform reconstruction of the nose should have good knowledge in surgical anatomy of the nose[5]. There are many option for closure nasal defects like skin grafts, locoregional flaps and microsurgery also play important role for total or near total nasal reconstruction6. Full thickness skin graft is well established for treatment of dorsum and sidewall defects of the nose because its flattened and thin skin that well recreated with skin graft only[7]. While other studies show that skin graft is an excellent reconstructive option for lower third nose because of its It is challenging to rotate a local flap into place due to its intrinsic thickness [8]. Some authors show skin graft less useful for lower third defects (alar and tip defects),which have established algorithms that often need flaps like v -y advancement flap ,nasolabial flaps and forehead reconstruction[9].

Patients and methods

This study compares the efficaciousness of skin grafts and flaps in reconstructing nasal defects following removal of basal cell carcinoma (BCC) from the nose.

following removal of basal cell carcinoma (BCC) from the nose.

This study was done in Al- Diwanyia teaching hospital and outpatient private clinic between January,2018 to April ,2024 for patients were complaining from skin defect in the nose after(BCC) excision.

Patient with disease comorbidities and patients with larger defects more than 3 cm were excluded from this study.

Thirty six patients were meeting the eligibility criteria. These patients were randomly divided into two groups, each group consist of 18 patients.

All the patients signed an informed consent form and the patients were studied clinically and evaluated before treatment according to sex, age and site of tumor.

All surgeries were done under local anesthesia that involve excision of the lesion with 0.5 cm safety margin and sent for histopathology.

All the results of histopathology were completely excised basal cell carcinoma.

With regard to the first group, a full thickness skin graft derived from the post-auricular area was used to close the defect that resulted from (BCC) excision.

The skin defects in the 2st group was closed by flaps, which included 12 v-y advancement flaps fig.1. and 6 patients treated by nasolabial flap fig. 2,3.

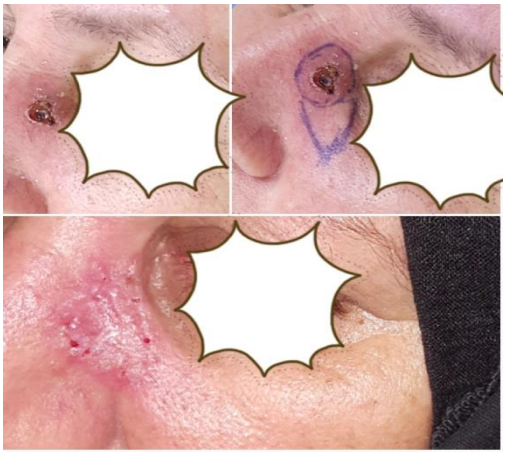

Figure 1.BCC sidewall of the nose treated by excision and v-y advancement flap

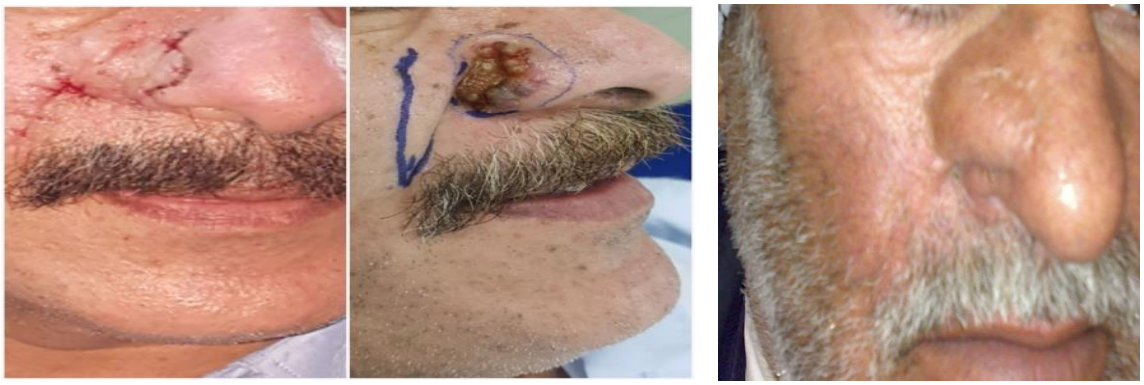

Figure 2. BCC right ala of the nose treated by excision and nasolabial flap

Figure 3. A nasolabial flap for closure defect in right ala after BCC excision. Picture was taken 6 months after surgery

The patients discharged home few hours post-operatively , at the same day of surgery.

In post-operative period, we give the patient oral antibiotic (Amoxicillin) with local antibiotic (fucidin) ointment and the sutures removed after 7 days post-operatively

In early follow up we assess the patients for presence of complications like infection ,flap ischemia , graft failure and hyperpigmentation .

We follow the patients for 6 months as a visit every month looking for late complications like scar problems and patient satisfaction .

A scale from 0 to 10 was used to measure the level of satisfaction (0 = no satisfaction, 1-4 = mild satisfaction, 5-7

= moderate happiness, 8-9 = satisfaction, 10 = great satisfaction).

The total number of patients involved in this study was 36 patients. 20 patients were male (56%) and 16 patients were female (44%). Table 1

Table 1. percent of gender number

Sex	Number	Percent
Male	20	56%
Female	16	44%
Total	36	100%

Age presentation ranged from 50 years to 85 years with mean age was 67 years.
The most common site affected by (BCC) is the ala nasi ,18 patients (50%) followed by sidewall ,13 patients (35%) and nasal bridge, 5 patients (15%) table 2.

Table 2. Site of BCC in the nose early follow up

Site	Number	Percent
Ala nasi	18	50%
Side wall	13	35%
Nasal bridge	5	15%
Total	36	100%

We found 2 patients developed wound infection those who manage by flap and treated by early removal of stiches, antibiotic and daily change dressing. Table .3
One patient developed tip nasolabial flap necrosis managed conservatively
Only one patients developed partial skin graft loss treated conservatively and this
not affected the final result fig 4.
6 patients who treated by skin graft developed hyperpigmentation problems and this not occur in patients treated by flaps

Table3. Early complications

Early complications	Skin graft	Flap
Wound infection	0	2
Necrosis	1	1
Hyperpigmentation	6	0

P value regarding early complications is significant (0.01)

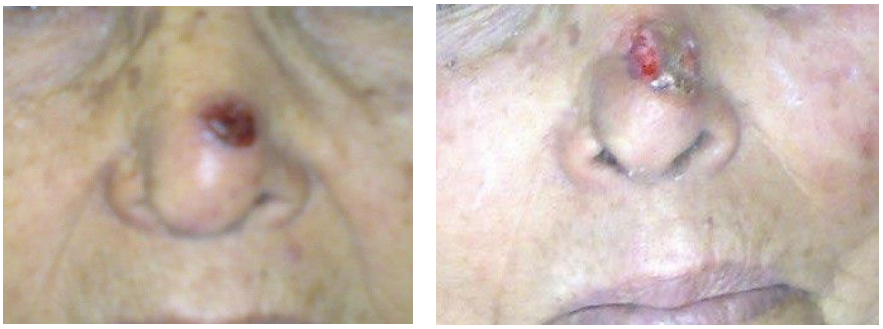

Figure 4. Basal cell carcinoma treated by excision and skin graft and developed partial skin graft loss.

Late follow up
No scar problems was found in both groups.
Mean of patients satisfaction for patients treated by flap was 6.5±1.2 while for the patients treated by skin graft was 4.5 ± 1.4 (p value 0.001) .

DISCUSSION

The most prevalent type of skin cancer, basal cell carcinoma, is a malignant skin lesion that is destructive and locally invasive, and it seldom spreads. In our study we found more prevalence of male patients with nasal BCC but it is statically not significant, many studies reported male preponderance also this is due to prolong outdoor activities under the action of sun exposure [10].
The older population is more likely to develop basal cell carcinoma[11]. This finding is consistent with our study, as the majority of our patients are 67 years of age.Patients who are elderly are more likely to develop BCC due to factors such as weakened immune systems, diminished DNA repair capacity, and cumulative effects of prolonged sun exposure [12].
Reconstructing a nose with skin abnormalities might be difficult. Following the removal of nasal skin cancer, a number of reconstructive methods are available, such as skin grafting, free flaps, and local flaps.
The size, location, and involvement of deeper structures of the lesion all influence the reconstructive procedure that is chosen [13].
In our study we assessed 36 patients with nasal defects resulting from excision of BCC , these defects closed with skin graft or flaps.
In early follow up we found only one patient developed nasolabial flap tip necrosis and one patient developed partial skin graft loss , the 1st patient was heavy smoker and the 2nd was diabetic respectively, both treated conservatively and not affected the final results . We found there is significant difference regarding hyperpigmentation nwhen using skin graft this go with study was done by Jacob MA(14).
Contrary to our findings, some studies demonstrate that skin grafting provides a one-stage surgery with visually acceptable results that are comparable to those obtained from flaps [15].
When flaps were used, patient satisfaction was better; this could be because some patients who had skin grafting acquired postoperative hyperpigmentation. It was crucial that the recipient skin around the grafted area match in color [16].
Because donor site morbidity is reduced and broader skin grafts are possible, skin grafting is frequently used to cover significant skin defects following skin cancer resection [17].
We explain the outcomes and the result of both skin graft and flap for our patients
and we found more advantages for using flap coverage in nasal reconstruction due to better cosmetic outcome and more patients satisfaction. Reconstruction of nasal defects remains challenging due to different in size defect and complex three dimension of the nose

DECLARATIONS

Acknowledgements

None

Conflicts of interest and financial disclosures

The authors declare no conflict of interest and there was no external source of funding

Ethical approval

Approval for the conduction of the study was obtained from the Institutional Scientific Review Board

Informed Consent

Written informed consent were obtained from patients.

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