

Surgical Management of Basal Cell Carcinoma of the Face

Dr R. L. Manchanda, M.S., F.R.A.C.S. & Dr Rajinder Singh, M. S. (Surg.), M.S. (Plas. Surg.)

Department of Plastic Surgery, Govt. Medical College, Patiala.

ARTHUR Jacob (1790–1874), a Dublin Surgeon was the first to report basal cell carcinoma as a clinico-pathological entity which was then called “Jacob’s Ulcer” for sometime. The term rodent ulcer came later from the French. Jacob’s description of rodent ulcer with regard to its behaviour and prognosis was fairly accurate and valuable clinically. Microscopic study of this tumour was elaborated later and it appears that Krompecker (1900) was mainly responsible for giving details of histological pattern of this and other common skin tumours. Since then enormous and confusing terminology has come up.

Rodent ulcer appears on the face in many forms, but from the surgeon’s point of view there are only four types:

1. *Superficial and Localised Type* : In this surface ulceration keeps pace with the spreading edge. Margins are typically rolled over and the shape is not always annular. These are often seen around the eyes commonly near the inner canthus over-lying the lachrymal apparatus or the angular vein and on the nose. These may be pigmented.

2. *Sclerosing Type*: This is a very slow spreading and superficial lesion, with little or no ulceration, irregular, ill-defined margins and may show healed areas. The forehead temple and the nose are the

common sites.

3. *A cystic type of rodent ulcer*: This is localised and so slowly expanding, that we might even question its malignant nature.

4. *Terebrant Type* : Here the growth is invasive and ulceration occurs in the depth rather than on the surface. The ultimate outcome is an excavating type of ulcer with rapid local spread. This type is usually seen in the nasocanthal region and lip.

Rodent ulcers of the face are sometimes multiple. Willis (1953) states that there may be “Microscopic foci in the skin which are not visibly affected” and the extent of the potentially neo-plastic field is much greater than the small size of the initially appearing tumour would suggest, a point of great surgical importance. So in some cases large areas of the skin of the face may be potentially tumour bearing, the tumours may appear one after the other and may give the impression of recurrence.

METASTASIS

Metastasis of the basal cell tumours although reported by Rank (1958), are very rare. This may be explained by the inability of the cells to get detached from the main mass or non-survival of the detached masses at the new site.

RECURRENCE

It can generally be attributed to incomplete removal, but is not always so. Recurrence is common in Terebrant type of tumour in which columns of burrowing cells may not come within surgical ablation.

HISTOLOGY

Rodent ulcer is a tumour of specialised cells of the basal layer. The recent view is that it arises from skin adnexa. The invading edge of the tumour is composed of columns of darkly stained cells which extend down into the dermis. These columns extend to a uniform level and their ends have an expanded club-shaped appearance. Sometimes "cell-nests" may form at the centre of epithelial masses but never at the growing edge.

There are controversial opinions about rodent ulcer changing its histological pattern to squamous cell carcinoma. Some workers think that this change can not occur. While on the other hand workers like Rank and Wakefield (1958), have labelled intermediate states between basal cell and squamous cell tumour as basisquamous cell carcinoma or carcinoma of purely mixed and indeterminate type.

LOCATION OF THE LESION

It is usually stated that basal cell tumour is most common above the line joining the tip of the ear to angle of mouth. This is probably erroneous because the fact is that all skin malignancies of the face are common in the upper non-hair growing region. That is why early writers theorised that they were from epithelial

inclusion in the facial clefts.

RATE OF GROWTH

The rate of growth of the rodent ulcer is very slow, but at times rapid growth and spread is seen, more so in Terebrant type. The deeper tissues are likely to be involved in the tumour of the nose, eye-lid and ear as in these sites the subcutaneous tissue is very scanty. We have observed more than once deep wide extension into the orbit from the eye-lid lesions which appear localised to eye-lids on examination.

EXTENT OF THE LESION

This can be determined without much difficulty. Margins can be felt and depth of the extension be assessed by the fixation of tissue planes. The lateral extent of tumour is more often judged accurately than deep penetration.

ROLE OF SURGERY

This has two aspects :—

1. Excision of lesion;
2. Reconstruction : immediate or delayed.

The most important point in surgical treatment is complete removal of the lesion in every dimension with complete disregard to the salvation of a particular tissue which may later be helpful in reconstruction. Reconstruction is of secondary importance though it must be planned before ablation, but in no case it should effect the degree of optimal removal of the growth. There are two schools of thought about the optimum time of repair :

- (i) Immediate,

(ii) Delayed.

Except in Terebrant type of lesion, where deeper tissues need ablation with a higher incidence of recurrence, immediate repair is indicated after thorough excision of the tumour.

In Terebrant type, a period of 6 months to 1 year should elapse before reconstruction is carried out. The closure can be obtained by suturing skin to the mucosa or the dressing by a split skin graft. Wherever necessary the patient may be made to wear prosthesis in the interval. It is no use embarking on a major surgical procedure and obtain a recurrence a few months later to discomfeature of the Surgeon.

MATERIAL AND METHODS

This paper deals with 58 cases of rodent ulcer of the face treated by surgery. The treatment was carried out in the Plastic Surgery Unit, Medical College, Patiala. The diagnosis was confirmed by histopathological examination in all the cases. Excision

biopsy was preferred to small biopsy because with this diagnosis is more certain and in operable cases it provides a possible cure at the same time. In only 3 cases biopsy was done before definite treatment. The excision was carried clear of the tumour, small pieces of tissue were taken from all around the excised tumour and Histological examination of the marginal tissue was carried out separately in each one to see if the excised marginal tissue was free of the malignant tissue. Out of the 58 cases, 43 were males and 15 females. The family history gave no significant finding. The lesion was single in 54 cases and multiple in 4. In one patient, two years after the removal of the rodent ulcer from the right pinna another basal cell tumour appeared on the left cheek.

The ages of the patients varied from 30-80 years with the largest number of cases between 50-80 years. The sites commonly involved were nose, eye and cheek in that order :

Table 1. *Topographical Distribution of Tumour*

Sr. No.	Site	No. of Cases
1.	Nose	19
2.	Cheek	18
3.	Eye-lids (with spread to the socket)	13
4.	Eye lids	3
5.	Lips	3
6.	Temple	3
7.	Forehead	2
8.	Ear	1
Total		62

The Surgical procedure employed in these cases are shown in table II.

Table II. *Procedures used for Repair*

Sr. No.	Procedure used	No. of cases
1.	Direct Suture	6
2.	Full Thickness Skin graft	14
3.	Split Skin Graft	2
4.	Rotation flap	19
5.	Transposition flap	1
6.	Immre Flap	1
7.	Forehead flap	2
8.	Exenteration and Split skin graft to socket	12
9.	Temporalis Muscle flap and rotation skin flap	1
10.	Excision of nose and prosthesis	2
Total		60

DISCUSSION

In this series, we have relied on surgical treatment. The chief indications of surgery were :

- i) Small lesion where diagnosis was uncertain.
- ii) Lesion where excision and reconstruction was possible with very high cure rate.
- iii) Rodent ulcer of the eye-lids and the inner canthus.
- iv) Rodent ulcers over the cartilagenous skeleton of the nose.
- v) Rodent ulcer of the pinna.

These indications, in fact cover most of the rodent ulcers. We believe that the knife has a important role in the management of these tumours, and we have used radiotherapy only in inoperable cases. Surgery has been resorted to where it

could be used with clear cut idea in mind that complete removal is possible.

It was rare to find a patient with a lesion sufficiently small to allow excision and direct suture, this was possible in 6 cases only. In two of these, the lesions were mutilple, and in each one of the lesions was small enough to allow excision and direct suturing.

RECONSTRUCTION

If the defect created after excision is not very deep, though it may be quite big, a free graft is indicated. The most suitable is, the clavicular or the post-auricular full thickness graft. Woolfe graft is very suitable in repair of superficial lesions of the nose, eye-lid and inner canthus. We resorted to this procedure in 14 cases with good functional and cosmetic results (Figs. 1 & 2). Thick split graft was used in 2 cases with fairly good results.

Where excision of the tumour creates a contour defect, a flap is very often necessary. A local flap or a forehead flap is ideal. Local flaps in the form of rotation advancement and transposition are easy and suitable on the cheek, chin and in some cases in small lesion on the lateral part of

Rotation flap was used in 19 cases (Figs. 3 & 4), and transposition flap along with rotation flap was used in one patient. A localised defect in the lower eye-lid is very suitable for repair by Immre flap and one case was managed by this procedure. In two cases the forehead flap was utilised



Fig. 1 Preoperative : Photograph showing rodent ulcer both cheeks.

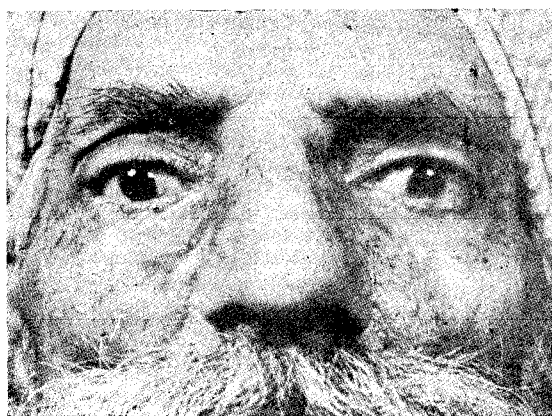


Fig. 2 Post-operative: Rt. side tumour excised and grafted with full thickness skin. Lt. excised and wound closed in layers.

the nose. Forehead flap is very useful for repair of incomplete nasal loss. Failing to get sufficient tissue by a local flap, a distant flap or tube pedicle has to be transplanted for reconstruction.



Fig. 3 Preoperative : Basal cell carcinoma of the lip and adjoining areas.



Fig. 4. Post-operative : After excision and rotation flap.

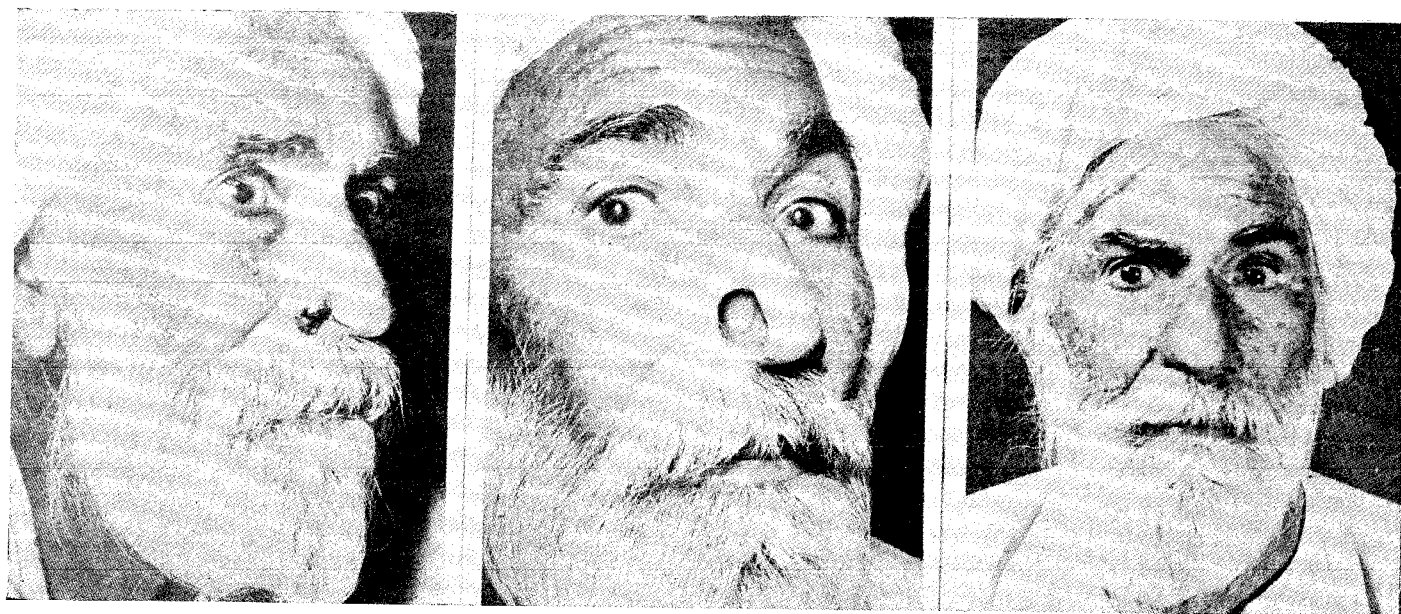


Fig. 5 Preop. : Tumour rt. ala nose.

Fig. 6 Six months after excision.

Fig. 7 Post-op. : One year after reconstruction by up and down forehead flap.

in reconstruction of the partial nasal loss (Figs 5, 6 & 7).

In 12 cases the tumour had involved the eye-ball and extended into the socket and in these, therefore, exenteration of the orbital contents was carried out and the resultant bare cortical bone was covered by a split skin graft. The graft healed well in all these cases and later they were given prosthesis (Figs. 8, 9 & 10).

In the past, the gaping orbital wound was allowed to granulate and heal, or it was skin grafted at a later date. It is an axiom in skin grafting that failure is certain if the graft is applied to the cortical bone denuded of the periosteum (Fomon, 1939). It may be possible to leave a part of the skin of the eye-lid and utilise it in giving a partial cover to the orbit by turning it in as a flap (Spaeth, 1942). We are in agreement with



Fig. 8 Rodent ulcer both eye-lids, inner canthus with spread to eye-ball.

McLaren (1959) that in a spreading tumour of the orbit exenteration should be complete including the periosteum and immediate repair be done by a split skin graft. The healing is quick with a nice bed and with the possibility of early and satisfactory fitting of prosthesis. Repair of the orbit by forehead flap causes unnecessary scarring.

In one case, part of the temporalis muscle was put into the socket and skin

feasible.

The follow up of these patients has been done for a period of 10 months to 6 years with local recurrences in two cases. Both of these patients have undergone further excision and repair.

SUMMARY

1. Brief history, clinical features of basal cell carcinoma are described.

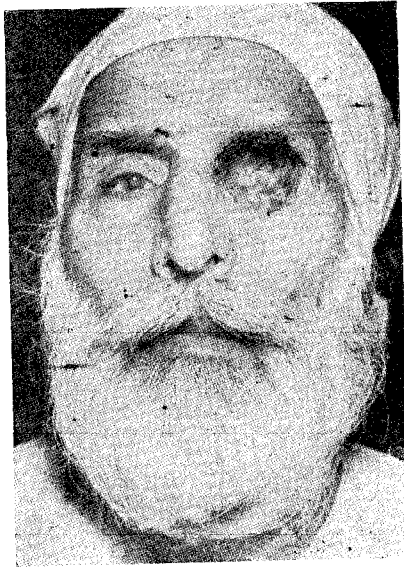


Fig. 9 After exenteration and split skin grafting of the socket.

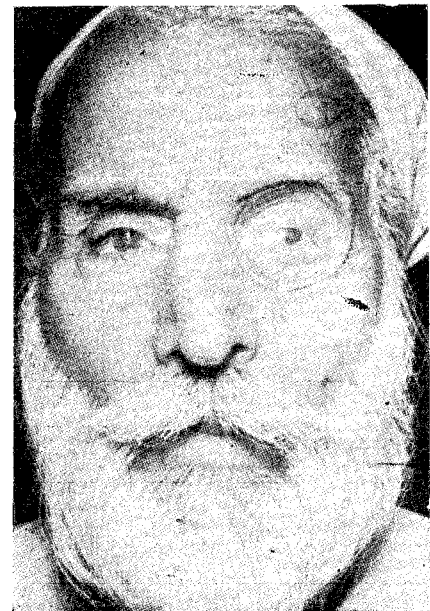


Fig. 10 Prosthesis in position. The margins of the prosthesis can be camouflaged by a spec.

cover to the socket was provided by a rotation flap. It is concluded that in most of tumours where excision is possible, a reasonably acceptable reconstruction is

2. Fifty-eight cases of basal cell carcinoma treated by surgery are presented.

3. Reconstructive aspect has been detailed and illustrated.

REFERENCES

1. Fomon, S. : The Surgery of Injury and Plastic Repair, The William & Willkins Co., Baltimore, 1939.
2. Jacob, A. : Observation respecting an ulcer of peculiar character which attacks the eye-lids and other parts of the face, Dublin Hospital Rep. 4:231, 1827.
3. McLaren, L. R. : Primary skink grafting after exenteration of the orbit, Brit. J. Plastic Surg., 12:57, 1959.
4. Rank, B. K. : Metastasising basal cell carcinoma, Australia, N. Z. J. Surgery, 27 May.
5. Rank, B.K. and Wakefield, A.P.: Surgery of basal cell carcinoma, Brit. J. Surg. 45:531, 1958.
6. Sequeira, J. H. : Diseases of the skin, J. A. Churchill, London; 1911.
7. Speath, E. B. : Principles and practice of Ophthalmic Surgery, Henry Kimpton, London, 1948.
8. Willis, R. A. : Pathology of tumours, Butterworth & Co., London: 2nd Ed., 1953.

