

THE SURGERY OF PREMALIGNANT AND MALIGNANT CONDITIONS OF THE SKIN*

J. A. ENGELBRECHT, M.B., CH.B. (PRET.), L.K.C. (S.A.), *Plastic Surgeon, Groote Schuur and Victoria Hospitals, Cape Town*

Malignant lesions, of which the basal and squamous cell types constitute over 95%, are the commonest malignant lesions encountered in South Africa. Australia excepted, we have the highest incidence of malignant skin conditions in the world.

The lesions affect mainly Whites with fair skins and are almost limited to exposed areas of the body, viz. the face, neck, hands and arms. Malignant lesions of the skin are often multiple, especially on the face and hands. The different primary lesions may develop over a period of many years, with long intervals lapsing in between.

It would appear that our sunlight must be the important factor in the development of skin cancer, because: (a) It affects the Whites with the fair unprotected skins, and (b) it is almost limited to the exposed areas.

The main distribution of rodent ulcers and squamous cell carcinomas are shown in Fig. 1.

Considerations at Operation

Cosmetic. The fact that these lesions tend to occur on normally exposed areas of the body raises an important factor in regard to surgical treatment, namely that it should be performed in such a way that the results are cosmetically acceptable.

Any person undertaking surgery in skin cancer should therefore be familiar with, and trained in, the principles of cosmetic reconstruction. The fear of difficulty in closing a defect after excision should be no excuse for inadequate surgery. Here, as in all surgery of cancer, early and adequate excision of the lesion is of the greatest impor-

ance. Inadequate surgery often leads to disasters, because malignant cells may be buried in scar and subcutaneous tissue, whence they may spread widely into the subcutaneous tissue and deeper layers of the skin without manifesting themselves until a very late stage.

The method of repair to be used should be planned at the time of initial operation.

It is advisable to mark out the area for excision with Bonney's blue before infiltration with local anaesthetic, because the distortion caused by the local anaesthetic will render assessment of the area to be excised impossible (Fig. 2). Likewise, tissue used for repair of a defect should also be marked out before the operation (Fig. 3).

Margin of safety. In rodent ulcers a margin of at least 1 cm. of normal tissue should be excised, while in the squamous carcinomas excision of 2 cm. of normal skin around the lesion is advised. It must be remembered that where an excision is performed for recurrence after X-ray treatment, an even wider margin is necessary because in such cases there is often widespread subcutaneous infiltration which is not visible clinically.

Histological examination. Every skin lesion removed must be examined histologically, not only to determine the histological aetiology of a lesion, but to ensure that it has been fully excised in all directions. The pathologist should therefore examine the specimen along the edges as well as on its deep surface. It is useful to mark the specimen after excision at certain selected points with black silk sutures (indicated on an accompanying sketch), to help the pathologist to orientate himself. The mere fact that the surgeon can be sure that the lesion has been fully removed places surgery well above any of the other recommended methods

*Paper read at the 4th Congress of the Association of Surgeons of South Africa.

of treatment for malignant skin conditions.

If the pathologist finds that the lesion has not been fully excised, there should be no hesitation about performing further excision as soon as possible.

This raises another point, namely, that it is frequently unwise to proceed with major reconstruction after excision before a full report has been received from the pathologist. Where the surgeon cannot be sure that the lesion was fully excised it is recommended that a provisional repair should be performed which can be followed by a full repair at a later stage.

THE PRINCIPLES AND METHODS USED IN THE SURGERY OF THE EXPOSED PARTS

Surgical treatment, properly performed, gives better cosmetic results than any other recommended method of treatment, and at the same time it does not carry the risk of further stimulation and damage to the already unstable surrounding skin, which may lead to the formation of further malignancies.

1. Closure by Direct Suturing

This is the method of choice, but it is of the greatest importance that there should be no distortion of the surrounding structures. The suture line must by preference lie in a wrinkle line and if it has to cross a wrinkle line it should be broken up into shorter lines by the use of Z-plasties.

The skin lines demonstrated by Langer, which are reproduced in most surgical textbooks, do not always correspond with the wrinkle lines and are therefore less suitable for this type of surgery. The difference between Langer's lines and the wrinkle lines as well as the indicated direction of excision lines are shown in Fig. 4.

The wrinkle lines can easily be demonstrated on the skin by asking the patient to wrinkle his face or by moving the skin in different directions.

Tension on the suture line should be avoided at all times because it causes spreading of the scar postoperatively and is one of the greatest causes of unsightly stitch marks.

2. Transference of Skin and Tissue from Another Site

When defects are reconstructed by transferring skin, it is important to remember that transferred skin tends to change its colour.

Colour matching is of great importance because difference in colour is far more noticeable than difference in shape or contour. A successful reconstruction can often be spoiled by a marked colour difference.

It would appear that skin supplied by a certain group of nerves can be transferred to an area supplied by the same group of nerves without undergoing a colour change, e.g. skin supplied by cervical nerves can be transferred to another area supplied by cervical nerves without changing colour. However, if transferred to an area supplied by dorsal nerves the skin will change colour. Such transferred skin will usually become much lighter in colour than the surrounding skin in the White, while in the coloured races it usually becomes very dark in colour.

Local flaps should be preferred where possible. Such a method is shown in Figs. 5 and 6.

Split-thickness skin (Thiersch graft) is not at all suitable for permanent reconstruction on the face. It has 2 great disadvantages, i.e. it always becomes darker than the surrounding skin, and it contracts to such an extent that it causes distortion of the surrounding structures. On the other hand, it is very useful as a temporary cover in cases where a full histological report is necessary before reconstruction is undertaken. On the dorsum of the hand, however, Thiersch grafting is the method of choice.

One is therefore limited to the use of either a flap or full-thickness graft from a relatively limited area, especially in reconstruction of the face. It is interesting to note that the transference of skin supplied by the cervical nerves to areas supplied by the cranial nerves always gives a good colour match.

METHODS OF REPAIR IN AREAS COMMONLY INVOLVED

1. The Nasal Region

There is very little skin to spare on the nose itself. It is therefore almost impossible to close any defect by direct suturing, especially in the region of the tip, which is most commonly involved.

It is, therefore, necessary to use either a full-thickness graft or a flap.

In a superficial lesion where the nasal mucosa can be left intact a Woolf graft or a small local flap is the ideal method of repair (Fig. 7).

The most suitable donor area for the full-thickness graft is the hairless skin behind the ear where the skin is of ideal texture and gives an excellent colour match (Fig. 8).

In cases where there is infiltration into the mucosa it is necessary to remove all the layers of the alae. It is important to realize that once infiltration has extended as far as the mucosa there is often widespread infiltration into the submucosal layers. Excision in such cases must therefore be even more extensive and it is often necessary to sacrifice the whole tip of the nose. It is also important to note that when a basal cell carcinoma develops on a mucocutaneous junction it behaves in the same aggressive way as a squamous carcinoma.

Where the tip of the nose or an ala has been removed the best method of reconstruction is by means of a forehead flap (Fig. 9).

2. The Ear (pinna)

Here, as on the nose, there is no spare skin for direct suturing on the pinna. It must also be remembered that the usual lesion is a squamous carcinoma and excision must therefore be radical.

The carcinomas almost never infiltrate the underlying cartilage. Wide removal of the skin down to the cartilage and coverage of the area by a Woolf graft from behind the ear is the most useful procedure (Figs. 10 and 11). A wedge excision of the pinna is seldom indicated and gives a very poor cosmetic result.

3. Dorsum of the Hand

When the fingers are extended, the impression is created that there is a great deal of skin to spare on the dorsum of the hand, but this is erroneous because the normal position of the fingers is that of flexion, in which position there is no apparent redundancy of skin.

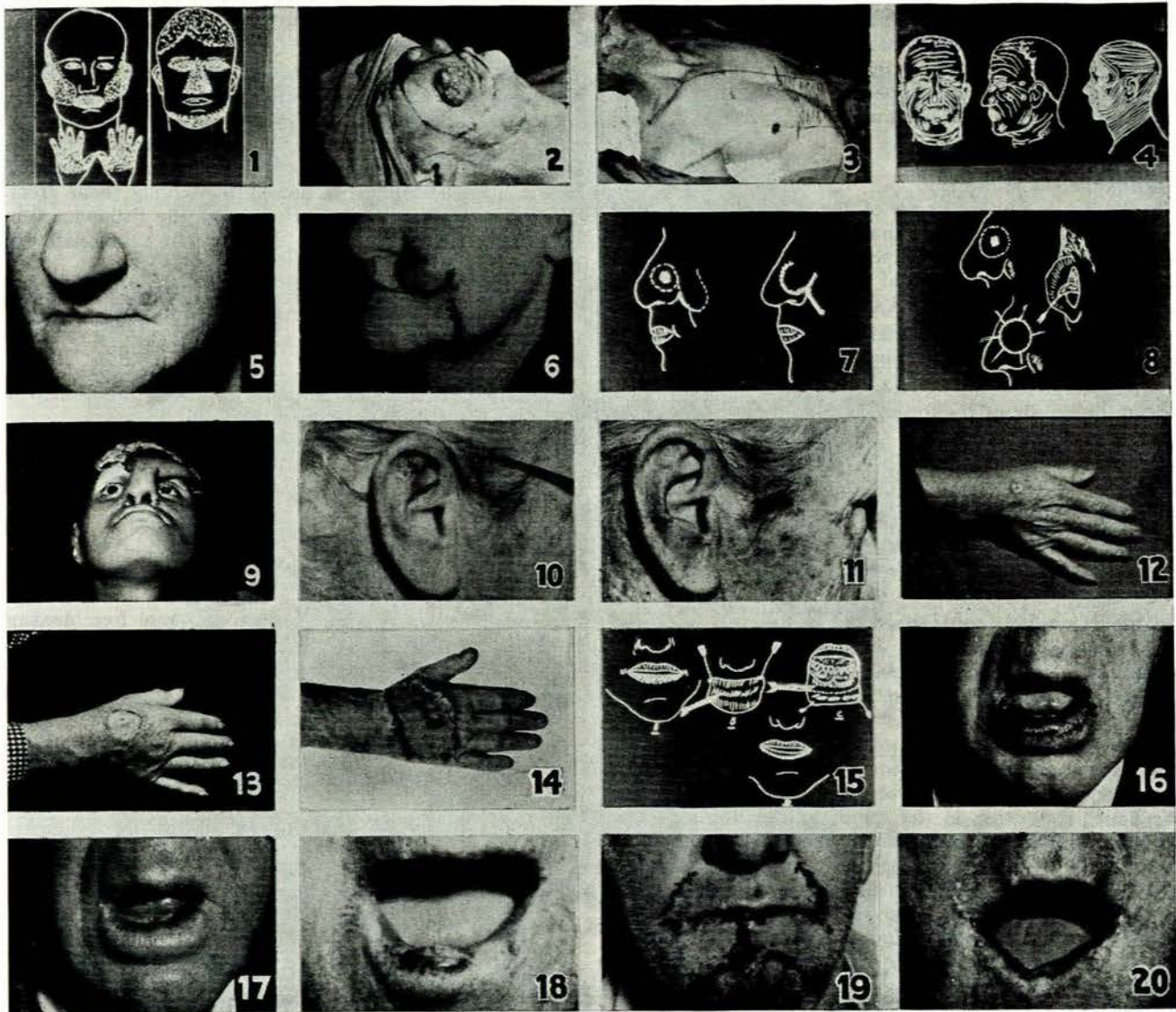


Fig. 1. Shows difference in distribution of squamous and basal cell carcinomata. The squamous type occurs mainly around the lips, cheeks and hands—the basal type mainly on the nose, chin and scalp.

Fig. 2. Shows marking of area to be excised with Bonney's blue.

Fig. 3. Mapping of tissue to be used to repair the defect which will result after surgery on patient shown in Fig. 2.

Fig. 4. Shows difference between Langer lines and normal wrinkle lines, with indication of direction of excisions.

Figs. 5 and 6. Local flap after excision of lesion on upper lip.

Fig. 7. Local flap naso-labial fold to nose.

Fig. 8. Woolf graft from behind ear to cover defect on nose.

Fig. 9. Shows forehead flap in position for reconstruction of nose.

Figs. 10 and 11. Show rodent ulcer of ear excised and defect covered with Woolf graft from behind ear.

Fig. 12. Squamous carcinoma on dorsum of hand.

Fig. 13. Ten days after excision and covering of defect with a Thiersch graft.

Fig. 14. After excision whole dorsum of hand and covering it with Thiersch graft.

Fig. 15. Shows the stages in doing a vermilionectomy.

Fig. 16. Sutures in position after vermilionectomy. Note that black silk 6/0 is used and not catgut.

Fig. 17. Same patient as in Fig. 16 after removal of sutures.

Fig. 18. Shows carcinoma of lower lip with wide infiltration.

Fig. 19. Immediately after total excision of lower lip and reconstruction by the Bernard method.

Fig. 20. After removal of sutures showing movements of new lower lip.

The dorsum of the hand is an area where we often see the senile keratosis, especially in farmers. This condition will almost always progress to multiple squamous carci-

nomata if left untreated.

This is an area of the body where the ordinary Thiersch graft gives a very good cosmetic and functional result.

It is often necessary to remove all skin on the dorsum of the hand and to replace it with a thick Thiersch graft. This graft will blend with the surrounding skin in such a way that it is often indistinguishable from the normal after about 6 months have elapsed. It is interesting to note that Thiersch grafts on the dorsum of the hand do not contract (Figs. 12 - 14).

4. *Leukoplakia of the Lip*

Leukoplakia with cracking of the lower lip is a very common condition among farmers and fishermen in South Africa. Early surgical treatment is absolutely essential because it is the fore-runner of one of the most aggressive forms of squamous carcinoma of the face.

The condition is easily cured by means of a vermilionectomy, also called a lip slide (Figs. 15 - 17).

It is necessary in the lip slide to undermine the mucosa well on the inside of the lower lip, before advancing it, or

else it will result in the so-called tight lip appearance which is cosmetically most unattractive.

5. *Carcinoma of the Lip*

This is the most aggressive carcinoma of the skin. Wide and radical excision is therefore absolutely essential, especially where radiotherapy has previously been given.

When less than a quarter of the lip is excised it can be closed by direct suturing, but where more than a quarter of the lip is excised, it is necessary to bring tissue from somewhere else to reconstruct the lip. The Estlander flap from the opposite lip is very useful where up to half the lip is excised.

Where a total excision of the lip has to be performed, the most useful method for reconstruction is that of Bernard (Figs. 18 - 20).

I wish to thank Prof. J. H. Louw, Head of the Department of Surgery, Groote Schuur Hospital, for his advice and help in preparing this article.