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# S-plasty

## Clinical applications for skin surgery

Elliptical excision is a simple, cosmetically satisfying and popular technique for surgically removing skin lesions. However, in certain situations, elliptical excision can produce resulting permanent skin deformity that is cosmetically unsightly. This article provides a series of cases that demonstrate clinical applications using S-plasty to produce a more cosmetically satisfying outcome.

**Keywords:** skin neoplasms, cosmetic techniques; surgical procedures, minor

While elliptical excision is an effective technique for surgically removing skin lesions, in certain situations it can result in permanent skin deformity that is cosmetically unsightly, such as 'dog ears', depressed wounds (*Figure 1*) and unsightly scars. Such complications occur more frequently on contoured surfaces such as the face, arms, and legs, and not infrequently contributes to cosmetic dissatisfaction.<sup>1</sup>

Numerous surgical techniques have been reported to both prevent and treat the resulting contour deformity.<sup>2</sup> Advantages of using S-plasty have been clearly documented in the literature.<sup>3,4</sup> There are various clinical applications available that use S-plasty to produce a more cosmetically satisfying outcome for excision of contour skin lesions, without the need for complex flap surgeries but with technical ease similar to that of an elliptical excision – 'less is more'.

### The technique

Map out the skin lesion to be excised (with appropriate excision margins). The 'S' shape is marked on the skin, as shown in *Figure 2*. The S-incision, while keeping the linear distance between the skin incision along the preoperative design, using 15 blade scalpel two apices constant, produces a longer but more cosmetically satisfying scar line with minimal contour deformity. The curvature of the S-incision needs to be individualised for each patient.

### The steps

- Administer local anaesthetic
- Make skin incision in accordance with the skin marking
- Undermine the wound edges, as needed, and secure haemostasis
- Place deep dermal suture using wound halving technique and absorbable sutures
- Place superficial epidermal sutures using fine 5/0 or 6/0 nylon.

### Discussion

S-plasty is a versatile technique that can be applied in numerous anatomical locations. In comparison to an elliptical excision<sup>3</sup> it provides:

- increased length to width ratio of the surgical incision while maintaining the same linear distance between the two apices of the ellipse
- better control of the wound tension by



Figure 1. Contour deformity of the upper arm following an elliptical excision of malignant melanoma (12 years previously)

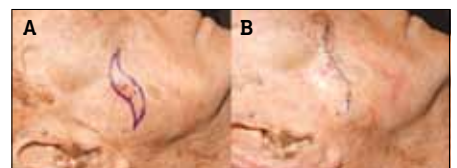


Figure 2. A) Design of S-plasty centred on a basal cell carcinoma of the right side of the face; B) Immediately postoperative

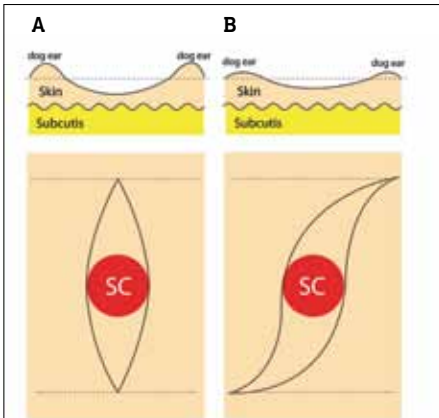


Figure 3. Diagram comparing the changes in skin configuration following skin excision. A) Following an elliptical excision; B) Following S-plasty – note reduction in height and volume of the dog ear and less puckering at centre of the postoperative wound



Figure 4. A) Basal cell carcinoma from the contour surface of the right side of the face; B) 3 months postoperative



Figure 5. A) Recurrent BCC from the contour surface of the right side of the forehead; B) 3 months postoperative



Figure 6. A) Large primary SCC of the lateral neck; B) 6 weeks postoperative



Figure 7. A) SCC from the contour surface of the nose; B) 2 weeks postoperative

multidirectional distribution of the tension across the incision line, hence effectively reducing the tension

- less depression of the wound site at its centre, and less bunching (dog ear) of the skin at both ends (Figure 3).

Clinically, this translates to fewer and smaller dog ear deformities, wounds that are less depressed, scars that are less unsightly and that fit better into the body contour, and provide a more cosmetically pleasing end result.

Furthermore, operative time is not prolonged and S-plasty may lead to less complex procedures such as skin flaps or skin grafts.

Figure 4–7 demonstrate some of the cosmetic results that can be obtained using S-plasty.

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