

# Serial Excision- an Aesthetically Pleasing Way for Removal of Large Cutaneous Lesions on the Face

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## ABSTRACT:

Face is a very prominent part of our body. It is the first feature that we notice when we meet someone. When there is a large cutaneous lesion /scar on the face it stands out, and can make a person very self conscious. So it becomes a source of concern and embarrassment for the person involved. As such when a patient with this type of problem presents to a cosmetic surgeon, he has to take great care as to how it can be removed and what will be the aesthetic outcome of the treatment. This is especially important if the patient is young.

Different types of flaps like nasolabial flaps, forehead flaps, deltopectoral flaps etc. are commonly used for reconstruction of defects following excision of large lesions. Sometimes tissue expanders are also used. Of course skin grafting is probably the easiest way to cover large areas when flaps cannot be used. But all of these procedures leave big scars which are often not acceptable to the patients. We have found that serial excision is a good way of removal of large lesions or scars especially when it involves the face. Although the patient needs two or more sittings for completion of the procedure, the final outcome is much more acceptable to the patient.

CBMJ 2012 Jan:Vol 01 No 01: P.14-16

Key words: Large cutaneous lesion, Serial excision, face

## Introduction

Patients presenting with large skin lesions or scars on the face presents special challenge to the cosmetic surgeon as regards how it should be removed and what will be its aesthetic outcome. The lesion should be examined very closely keeping in mind the size, location, color, texture, skin quality and mobility of surrounding tissues.

Size and location of the lesion along with the mobility of the surrounding skin are important factors determining whether full excision and closure can be done at one sitting or not. Defects that cannot be closed primarily will need to be resurfaced by flaps, skin grafting or serial excision. Use of flaps means additional scar on the donor site and skin grafts are usually not acceptable from an aesthetic point of view. And both these procedures run the risk of flap/graft necrosis. Serial excision on the other hand can be used for removal of large lesions without fear of a donor site scar or the risk of flap necrosis.

Favorable lines of closure are usually within or parallel to relaxed skin tension line (RSTL): lines due to dynamic action of the underlying musculature<sup>1</sup>. The location of the lesion should be evaluated with reference to the resting skin tension lines (RSTL) and the major points of the face like eyebrow, lateral canthus, nasal ala, and oral commissure<sup>2</sup>. If the revision displaces any of the facial reference points, the patient should be informed prior to the procedure. Minor facial disfigurements caused by primary closure are usually temporary and resolve spontaneously<sup>3</sup>.

Preoperative planning and prevention are critical to achieving scar cosmesis<sup>4</sup>. Skin quality and mobility of surrounding tissue, color and texture compared to the adjacent skin are important factors to be considered before deciding what method should be used. These factors also determine the final outcome of the procedure.

## Methods:

Period of study – July 2009 to July 2011.

Place of study- Cosmetic Surgery Centre Ltd., Dhaka

Total number of patients – 28

Male: Female - 11:17

Types of surgery done- Split skin graft, Flaps, Serial excision

Types of lesion included 18 scars, 6 naevus and 4 tumours.

Smaller lesions that underwent excision and primary closure were excluded from the study. Out of the 28 cases 8 were treated by flaps, 6 by skin grafting and the other 14 were treated by serial excision.

In cases of scar revision it is important to remember once a scar always a scar. But of course the surgeon should be able to ensure with reasonable certainty that there will be significant improvement in size and visibility of the scar.

First we have to determine what kind of scar it is. Is it an elevated scar, hypertrophied scar, depressed scar or widened scar? Regardless of the width and depth or color of scar, complete removal or minimizing the scar tissue is the goal<sup>5</sup>. In cases of large scars with insufficient surrounding tissue laxity for total excision and primary closure, serial excision is a good choice.

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This technique is helpful when the size, location and elasticity of the scar and surrounding skin prevent primary closure or when primary closure will yield significant distortion of nearby structures<sup>6</sup>.

If the patient presents with a large lesion on the face that cannot be excised and closed primarily, we have to consider methods that will give the least noticeable scar. It is always best to choose a procedure, which will give the best result with regards to matching of skin color and texture; and so, resurfacing using fasciocutaneous flap from surrounding area is often the best option. In cases of flaps, there is an additional scar of the donor site. This additional scar can be avoided if serial excision is done instead of using a flap.

#### Procedure:

The scar and surrounding tissues are anesthetized with 1% lidocaine mixed with 1:100,000 epinephrine, by using syringe with 27 gauge needle<sup>2</sup>. Adequate anaesthesia and vasoconstriction is important to make the surgeon and patient comfortable. An elliptical incision is made in such a manner that one limb of the incision is made along the outer border of the lesion and the other limb is within the lesion so that primary closure is possible. In this way sizeable portion of the lesion is excised; and after sufficient undermining of the adjacent skin, the incision margins are apposed and sutured with nonabsorbable stitches<sup>5</sup>. Vertical mattress sutures are used to prevent inversion of edges. It is very important that the closure is done properly- so that the margins are apposed accurately. All potential sources of persistent inflammation should be excised, including epithelial cyst, sinus tracts, or trapped hair follicles<sup>7</sup>. Skin suturing is usually done with 5/0 or 6/0 prolene. Steristrips are applied over the wound closure. The second sitting was done after an interval of 2 to 3 months, by which time the adjacent tissues on either side of the scar has relaxed sufficiently. In this way additional sittings were given as necessary, until the lesion was completely excised.

Postoperatively the patient is given an oral antibiotic and is advised to use sunblock lotion on the operative area. The patient is asked to come for stitch removal and regular follow up. Photographs are also taken.



Fig- 1: Excision of Naevus by Serial Excision in Several Stages

#### Result:

Complications and extent of scar formation were noted in all the patients. Overall satisfaction was more with the serial excision group as compared to the flap and skin graft group (table- 1).

Table 1:

Type of surgery	No. of Patients	Aesthetic outcome		Percentage of satisfactory results
		Satisfactory	Unsatisfactory	
SSG	6	3	3	50%
Flaps	8	5	3	62.5%
Serial excision	14	12	2	87%

Out of the 6 cases treated by skin grafting only 3 had satisfactory scar (50%), and out of 8 flap cases 5 had satisfactory scar (62.5%); whereas 12 out of 14 cases treated by serial excision resulted in satisfactory scar (87%).

#### Discussion:

In skin graft surgery the advantage is that resurfacing can be done in a single sitting. But this is outweighed by the rather unacceptable aesthetic result. The reason for this unacceptable aesthetic result is because the grafted skin never matches with the surrounding skin with regards to color, thickness and texture. In addition there is always a chance of graft necrosis and donor site scar.

In flap surgery there is often a requirement of multiple surgeries. Many of these procedures require a second surgery for division of pedicle and inset of the flap. Sometimes a third surgery for flap debulking is also required. And just as in skin grafting, donor site scar and chance of flap necrosis are additional disadvantages.

Serial excision does require more than one surgery for completion of treatment. But the final outcome is much more pleasing than the other two types of surgeries. Complete removal or minimizing the scar tissue is the goal. The concept of serial excision comes from the fact that skin stretches under the influence of traction. When a large lesion or scar is excised serially, the skin gets time to expand in the 2 to 3 months interval. When the excision is complete, the adjacent skin resurfaces the area, which is the same color and texture of the face. Although the big scar/lesion is replaced by a linear scar, the result is pleasing to the eye as there is no difference in color, thickness or texture; and therefore it is least noticeable.

**Conclusion:**

Aesthetic outcome of a surgery for removal large lesion on the face is very important- as this can change the quality of life of the patient. So, when such a lesion is removed from the face, serial excision technique is a good option; and this should be considered before undertaking complex flap surgery or skin grafting.

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