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“Sorting hat” flap as a modification of the classic A-T flap

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Abstract

This article presents a case study featuring a novel modification of the A-T flap, termed the "Sorting Hat" flap, employed in dermatologic surgery for facial reconstruction. In the treatment of an 89-year-old male's squamous cell carcinoma lesion on the forehead, the "Sorting Hat" flap, introduced as an innovative alternative, eliminates the need for Burrow triangles and relies on flap shape for inconspicuous scarring and favorable cosmetic outcomes.

Introduction

The main goals of dermatologic surgery are to ensure surgical radicality, specifically the complete eradication of the tumor, and to obtain the best possible functional and aesthetic results [1-3]. These objectives drive surgical procedure planning, and reconstructive options must include flaps and grafts. A-T plasty has been a long workhorse to close defects on the forehead, chin and lips [4]. The flap's design usually depends on the doctors' training and experience. Here, we present the case of a 89-year-old male with a lesion in the forehead area, that was excised with a modified A-T flap, that we called "Sorting Hat".

Case report

A 89-years old male presented with a lesion on the forehead of 1.2 cm compatible with squamous cell carcinoma. Excision was programmed with a A-T plasty reconstruction.

Technical note on A-T flap

The A-T flap can be described as half of a double advancement flap [5-6]: firstly, the circular defect is converted into a triangular defect, then two incisions are placed tangentially at the base of the triangle to release the tension. Then, the triangle's two base tips are connected to the base's midpoint to form an inverted T-shaped closure. Burrow's triangles are positioned at the base of the triangular flaps, designed to ease the sliding and to fit the various measures of the two edges, preventing skin redundancy. Depending on the side, the size of the skin defect, or the suppleness of the skin, burrow triangles may be designed on either one or both sides of the defect, lateral and perpendicular to the closure axis. (Fig. 2-a, Fig. 2-b). Wound size, developing standing cutaneous cone, proximity of nearby noble structures affect the parameters of the hypothetical triangle that directs the production of this flap. The basal incision can be hidden along the eyebrow or hairline, along the mental crease or the vermilion border.

Although the Burrow triangle cuttings are typically made in natural creases or subunit junctions, sometimes the boundary of the cosmetic unit is intersected, which may cause the eyebrow or hairline to become disrupted, or undesirable scars to persist.

Modified A-T advancement flap: "sorting hat" flap

The region over the eyebrow, close to the vermilion lines, or underneath the hairline are challenging to reconstruct, since even the smallest error in judgment can rupture aesthetic lines and cause obvious asymmetry and/or distortion.

In order to attain the benefit of an undetectable postoperative scar with a generally good cosmetic look, we suggest an alternative to the conventional A-T flap that does not necessitate burrow triangles, based strictly on flap shape (Fig. 2-c, Fig. 2-d).

Discussion

Advancement flaps, such as the A-T flap, play a crucial role in restoring facial deformities after skin cancer treatment. The article introduces the "Sorting Hat" flap as a modification of the conventional A-T flap, particularly suitable for challenging reconstruction areas near the eyebrows, vermilion lines, or underneath the hairline. The modification eliminates the need for burrow triangles and relies on flap shape to achieve an undetectable postoperative scar with a favorable cosmetic appearance, preserving the natural contours of lips, eyebrows, and hair.

Conclusions

Following the treatment of skin cancer, advancement flaps—random-pattern flaps—are widely utilized in the restoration of surgical deformities on the face. For consistent aesthetic effects, careful planning and execution are essential. The "Sorting Hat" flap, so named because it resembles the fabled talking hat from the Harry Potter books and movies, is a safe and practical substitute for surgical repair that preserves the contours of the lips, eyebrows and hair.

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Figure 1. Preoperative design of flap.

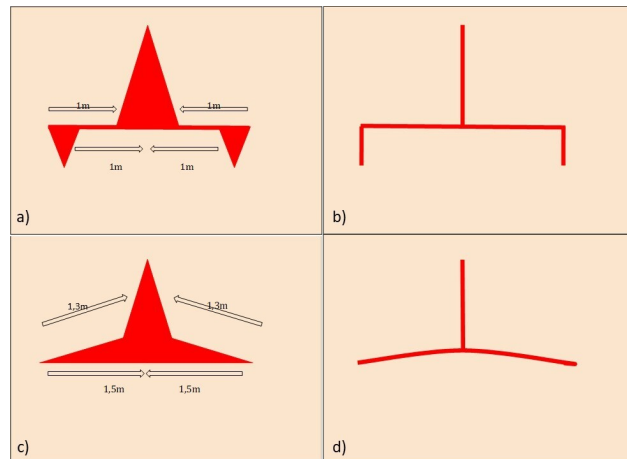


Figure 2. a) classic A-T flap incision; b) classic A-T flap outcome; c) "Sorting Hat" flap incision; d) "Sorting Hat" flap outcome.

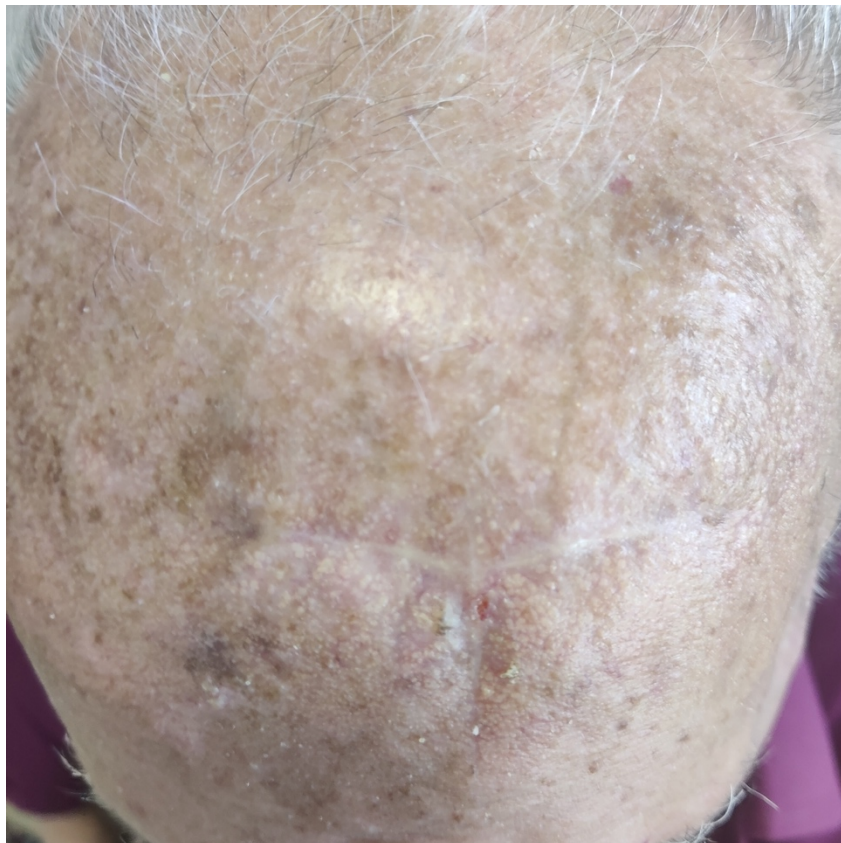


Figure 3. Postoperative outcome, 30 days after surgery.