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Surgical Video

Semi-Buried Dermogaleal Subcutaneous Suture: How to Keep Tension Away From the Wound

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Introduction

Medium- to large-sized scalp wounds following excision of a malignant lesion often present challenges for direct closure. Conventional subcutaneous sutures may be ineffective when faced with excessive tension, carrying a risk of tearing and dehiscence.^{1,2} In addition, several techniques have been described to reduce tension when closing medium-sized scalp defects, such as galeotomies,³ relaxing skin incisions,⁴ or galeal-periosteal sutures.⁵

To avoid performing complex flaps with greater morbidity, we describe a modification of the subcutaneous suture that facilitates tension release at the center of the wound and improves suture stability.⁶

Technique description

Expanded subgaleal dissection

- Dissection is performed beneath the galea at a greater distance than usual (approximately double), allowing increased mobilization and advancement of both wound edges.

“Semi-buried” distant suture

- 2 epidermal incisions are performed 4–5 cm from the main wound edge.
- The suture begins in the center of the ellipse, passing through galea–subcutaneous tissue–dermis and exiting through the above-mentioned incisions. The suture at these incisions remains semi-buried and is tied centrally, with the knot and most of the suture lying in the subgaleal plane. For this case, a braided, absorbable size-1 suture was used to facilitate knotting and withstand tension.

Final closure

- The lateral incisions generated by the subgaleal dissection may be left open, as they heal rapidly with minimal scarring.
- The main wound is free of tension and can be closed with a running suture or simple transcutaneous stitches.

Indications and contraindications

Indications/Advantages

- Medium- to large-sized scalp defects.
- Patients with low elasticity and/or scalp atrophy, in whom traditional direct closure would be difficult.
- Situations where the morbidity of large flaps or grafts is to be avoided—especially in elderly patients or those unable to tolerate prolonged procedures or general anesthesia.
- A thicker suture can be used than usual, minimizing the risk of breakage or tearing.
- Because the suture lies in the subgaleal plane, it produces less foreign-body effect.
- Better cosmetic outcome in both hair-bearing and non-hair-bearing patients. With the described suture, wound tension is transferred 3–4 cm away from the primary scar, leaving the center tension-free. Transcutaneous stitches can also be removed early, improving the esthetic result.
- Fast learning curve and easy application in many settings.
- For larger defects intended for direct closure with this technique, multiple dermogaleal sutures can be used, spaced approximately 3–4 cm apart.

Contraindications

- Active infection at the surgical site.
- Vascular disease limiting skin viability or adequate hemostasis.

Complications

- Hematoma or seroma:* May occur due to extensive subgaleal dissection. Preventable with adequate hemostasis and drainage when needed.¹
- Skin necrosis:* Low risk if vascular supply is preserved. The larger flap pedicle and tension applied at the galea better preserve both dermal plexuses and improve perfusion.
- Wound dehiscence:* Possible with poor technique or inappropriate suture material, although the risk is lower than with conventional sutures.

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- **Infection:** Related to inadequate postoperative care or patient-related risk factors.

Conclusions

The semi-buried dermo-galeal subcutaneous suture technique provides an effective solution for closing medium- to large-sized scalp wounds while reducing the need for more complex flaps.^{1–7} Its design redirects tension away from the wound center and reduces the risk of dehiscence. Expanded subgaleal dissection combined with anchoring the suture 4–5 cm from the primary scar preserves vascularity and promotes healing. The technique is simple, adaptable to many scenarios—including patients with hair or with atrophic scalp—and offers superior cosmetic outcomes due to the reduced foreign-body effect and improved tension distribution.

Conflict of interest

The authors declare that they have no conflict of interest.

Appendix A. Supplementary data

Supplementary data associated with this article can be found, in the online version, at [doi:10.1016/j.ad.2025.104521](https://doi.org/10.1016/j.ad.2025.104521).

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