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Hair Braiding as a Technique for Surgical Field Preparation in Scalp Surgery

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Abstract

Hair management during scalp surgery can present a technical challenge while also contributing to patient anxiety related to hair removal and cosmetic changes. Adequate visualization of the surgical field is important for procedural safety and efficiency, yet commonly used methods of securing hair may cause discomfort or fail to maintain consistent hair control. Hair braiding provides a simple technique for securing longer hair away from the operative field. Hair can be divided into sections adjacent to the surgical site and braided away from the field, with the braids secured using clips to limit hair mobility throughout the procedure. The interwoven structure of braids provides durable hair control while allowing the hair to remain in place throughout surgery. This technique may improve surgical field visualization while preserving patients' hair and minimizing discomfort associated with other hair-management methods. Hair braiding is most useful for patients with medium-to-long hair and provides a practical alternative to ointments, tape, elastic bands, clips, or unnecessary hair removal.

Categories: Dermatology
Keywords: braids, hair, scalp surgery, surgical pearl, surgical site visualization

Introduction

In scalp surgery, hair presents both a technical challenge and a source of patient anxiety. Hair is closely associated with personal identity and self-image. Hair removal may also raise cosmetic and psychological concerns for some patients. In a study of patients undergoing craniotomy, Diccini et al. identified loss of physical attractiveness, insecurity, and shame among the feelings associated with decreased self-esteem following hair removal, although some participants did not report altered self-esteem [1].

Adequate visualization of the surgical field is required for procedural safety and efficiency. Hair obstructing the view of the operative site may contribute to accidental injury to adjacent structures, technical errors, and prolonged operative times. Preoperative scalp shaving has historically been used to improve visualization. However, a systematic review by Sebastian found no evidence that routine scalp shaving reduces postoperative wound infections and discussed the cosmetic considerations associated with hair removal [2]. These risks highlight the importance of effectively securing hair away from the surgical field while minimizing patient discomfort and cosmetic burden.

Several methods have been described for managing hair during scalp procedures. Petrolatum has been reported as a technique for managing hair during scalp surgery [3], and other approaches have addressed hair control and secure draping during head and neck procedures [4]. Lee and Kim described a method of moving long hair away from the scalp surgical field using three rubber bands [5]. Mitsukawa et al. also illustrated a braiding method to prevent hair from entering the operative field during scalp surgery [6]. Hair braiding therefore represents an established approach to hair management rather than an entirely novel concept. This technical report describes the application of hair braiding for surgical field preparation in dermatologic scalp surgery, with an emphasis on its procedural implementation and preservation of hair around the operative site.

Technical Report

Hair braiding represents an alternative technique for hair management during scalp surgery. The technique is performed by the medical assistant or another member of the surgical team responsible for patient preparation and typically takes an estimated two to three minutes, although this duration has not been formally measured.

Before skin antisepsis and sterile draping, longer hair is divided into sections adjacent to the operative site and braided away from the surgical field. Typically, three braids are created for a single surgical site, as demonstrated in Figure *1*. When multiple surgical sites require access, additional braids can be created and positioned according to the location of each site, as demonstrated in Figure *2*. Care should be taken to avoid excessive tension when braiding, particularly near the scalp, to minimize discomfort and unnecessary traction on the hair. The braids can also be adjusted to allow wider exposure of the scalp if the surgical field

needs to be expanded before the procedure. The braids are secured with surgical clips to help maintain the hair away from the operative field throughout the procedure. The number and placement of braids can be adjusted according to the patient's hair and the location and number of surgical sites. Following hair preparation, skin antisepsis and sterile draping are performed according to standard surgical protocol.

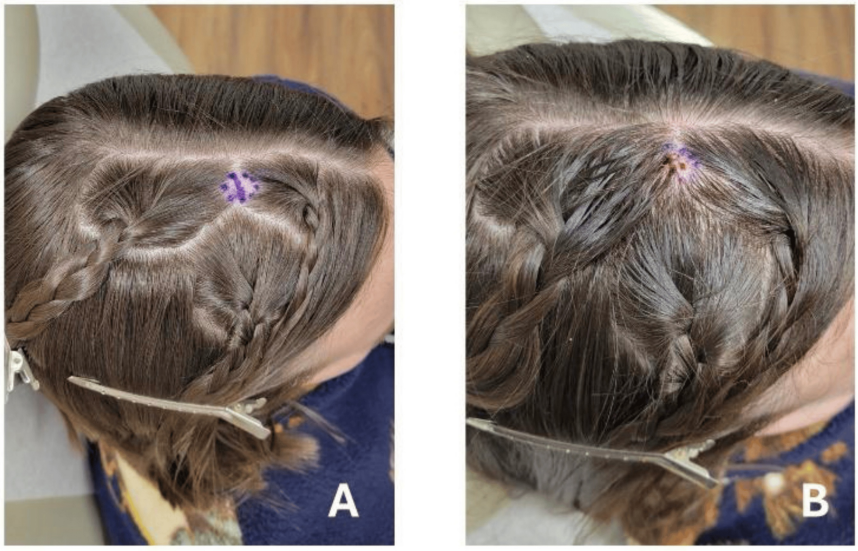


FIGURE 1: Patient 1 with a 1.1 cm pilar cyst undergoing excision. Preoperative view with the surgical site marked and hair braided and clipped away (A), and postoperative view demonstrating preservation of the surrounding hair without interference with the surgical site during the procedure (B).

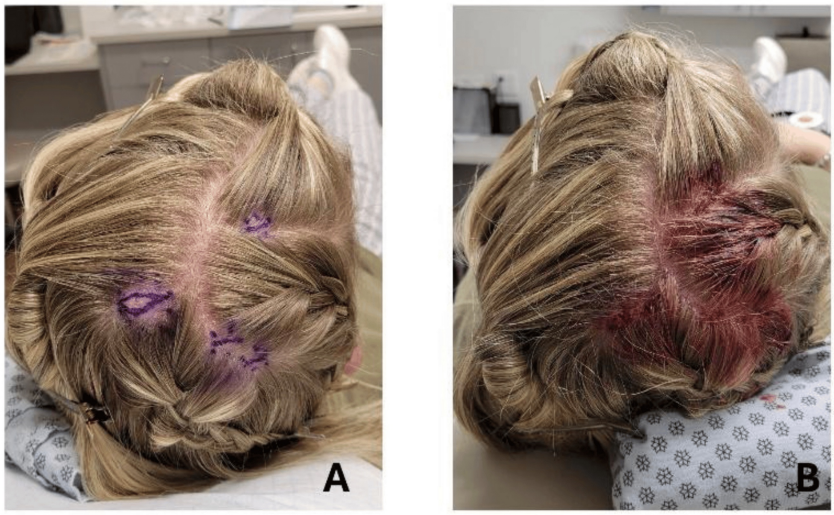


FIGURE 2: Patient 2 with four pilar cysts (1.0, 1.0, 1.2, and 1.8 cm) undergoing excision. Preoperative view demonstrating the hair-braiding technique used to secure the hair and maintain visualization of the surgical sites (A), and postoperative view demonstrating the surgical field and preservation of the surrounding hair (B).

At the conclusion of the procedure, the surgical clips can be removed and the braids undone to release the hair. In the authors' clinical experience, some patients have reported that undoing the braids was painless. This technique also allows longer hair to be secured away from the operative site without requiring hair removal or the application of topical products to hold the hair in place. Although these observations suggest potential practical benefits, comparative studies are needed to evaluate patient comfort and the effectiveness of hair control relative to other hair-management techniques.

Discussion

Effective hair management is an important consideration in scalp surgery because hair can obstruct visualization, limit access to the operative site, and complicate maintenance of the surgical field. Several approaches have been described to manage hair during surgery, including shaving, clipping, adhesive products, and braiding. Mitsukawa et al. described a hair-braiding method designed to prevent hair from entering the operative field during scalp surgery, establishing precedent for braiding as a practical hair-management technique [6]. Although Mitsukawa et al. previously described hair braiding to prevent hair from entering the operative field during scalp surgery, the present report describes its application in dermatologic surgery, with an emphasis on practical implementation during cutaneous procedures. This report provides a procedural description of the technique and illustrates its use as an option for maintaining surgical-field visualization while preserving hair. Rather than proposing an entirely new technique, the present report highlights its practical application in dermatologic scalp procedures. In particular, braid placement can be adapted to the location and number of lesions being treated, including procedures involving multiple surgical sites. This allows hair to be maintained away from the operative field while preserving surrounding hair and avoiding unnecessary trimming or shaving. Further evaluation is needed to determine whether this approach offers advantages over previously described braiding methods or other hair-management techniques.

Preserving hair may also be relevant to patient preferences and the psychological experience of surgery. A study of shave-free craniotomy reported high patient satisfaction, highlighting the potential importance of hair preservation in surgical planning [7]. Although these findings arise from neurosurgical rather than dermatologic procedures, they illustrate the potential value of considering hair preservation when planning scalp surgery. Braiding may offer a practical way to organize hair while avoiding unnecessary alteration of the patient's hairstyle.

The rationale for minimizing unnecessary hair removal is also supported by evidence regarding preoperative hair-removal practices. A systematic review and meta-analysis by Aleid et al. found no statistically significant difference in surgical-site infection rates between patients who underwent hair removal and those who did not [8]. Similarly, a Cochrane systematic review by Tanner and Melen concluded that shaving with a razor may increase surgical-site infection risk compared with clipping, while evidence regarding other hair-removal approaches is less conclusive [9]. These findings provide context for hair-preserving approaches; however, they do not establish that braiding reduces infection risk or is superior to other hair-management techniques.

Hair braiding may be particularly useful when patients have sufficient hair length to secure it away from the operative site and when preserving the existing hairstyle is a priority. Nevertheless, the technique has limitations. It may be less practical for patients with short hair or hair that cannot be reliably secured, and braiding requires additional preparation and appropriate positioning to avoid interference with surgical access. As with other hair-management methods, the technique does not replace appropriate skin antisepsis, sterile draping, or ongoing assessment of the operative field.

Although hair braiding has been described in other surgical specialties, further evaluation in dermatologic surgery would help establish its practical advantages and limitations relative to existing methods. Future studies could compare preparation time, operative-field accessibility, hair displacement, patient satisfaction, and maintenance of the sterile field. Such evaluation would help clarify the clinical settings in which braiding may be a useful option for scalp surgery.

Conclusions

Hair braiding is a practical technique for surgical field preparation in scalp surgery that can help manage medium-to-long hair while maintaining visualization of the operative site. By allowing hair to remain in place and permitting painless removal after the procedure, braiding may help minimize discomfort and cosmetic concerns associated with other hair-management methods. The technique is a useful option when preservation of the patient's existing hairstyle is desired, although it may not be suitable for all hair types and lengths. Hair braiding may also require additional preparation time, although this was not formally measured. This report demonstrates the practical application of the technique rather than establishing its superiority over other hair-management methods; the effectiveness and durability of hair control were not formally assessed.

Additional Information

Author Contributions

All authors have reviewed the final version to be published and agreed to be accountable for all aspects of the work.

Concept and design: Isabella M. Detienne, Lydia A. Luu

Acquisition, analysis, or interpretation of data: Isabella M. Detienne, Lydia A. Luu

Drafting of the manuscript: Isabella M. Detienne, Lydia A. Luu

Critical review of the manuscript for important intellectual content: Isabella M. Detienne, Lydia A. Luu

Disclosures

Human subjects: Informed consent for treatment and open access publication was obtained or waived by all participants in this study. **Animal subjects:** All authors have confirmed that this study did not involve animal subjects or tissue. **Conflicts of interest:** In compliance with the ICMJE uniform disclosure form, all authors declare the following: **Payment/services info:** All authors have declared that no financial support was received from any organization for the submitted work. **Financial relationships:** All authors have declared that they have no financial relationships at present or within the previous three years with any organizations that might have an interest in the submitted work. **Other relationships:** All authors have declared that there are no other relationships or activities that could appear to have influenced the submitted work.

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