SKIN

SHORT COMMUNICATION

Fascial Plication Sutures: Insights and Potential Applications in Dermatologic Surgery

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ABSTRACT

Fascial plication sutures redistribute closure forces to the deep fascia, offload the dermis and epidermis, decrease dead space, and may reduce complications in high tension dermatologic closures. We summarize technique fundamentals, anatomic indications, and safety considerations informed by plastic surgery literature and early dermatologic reports. Plication is particularly useful for trunk and shoulder defects when layered closure is insufficient, improving stability, scar quality, and seroma risk. Contraindications include contaminated or ischemic wounds, superficial neurovascular structures at risk of entrapment, and very thin patients with limited fascia. Modified approaches, including buried vertical mattress and fascial tensile reduction sutures, have been associated with less scar spread and lower keloid recurrence. Evidence in dermatology remains limited; prospective studies should define patient selection, defect characteristics, and cosmetic and functional outcomes. This research letter offers a practical framework and priorities for evaluation to guide responsible adoption of fascial plication in dermatologic surgery across practice settings.

Fascial plication sutures may represent an underutilized technique in dermatologic surgery that holds promise in improving outcomes in high-tension wound closures. While widely employed in other surgical fields, their potential benefits in dermatologic surgery remain largely underexplored. This technique can enhance wound stability, reduce complications, and provide better cosmetic results, especially in high tension and/or deep defects where conventional closure techniques might be inadequate.[1]

Surgical wounds under high tension present significant challenges in dermatologic procedures as they carry a higher risk of dehiscence, infection, and delayed healing[1]. Similarly, deep defects with significant dead space may foster hematoma development, seroma formation, and infection.[2] Standard layered sutures in the dermis and epidermis aid in distributing tension; however, they may be inadequate for closing high tension defects or eliminating dead space. Given these challenges, additional surgical steps for wound closure are essential to provide the optimal outcome.

One such approach is the fascial plication suture, which involves anchoring sutures at the fascial layer to more effectively distribute tension.[3] This technique starts by undermining the wound edges to form a plane for suture placement. The suture is then threaded through the fascia and subcutaneous tissue on one side of the wound, crossed over the defect, and anchored on the opposite side.[1] Redistributing tension to the deeper fascial layer decreases dead space, reduces stress at the superficial layers, and subsequently lowers the risk of postoperative complications (**Figure 1**).

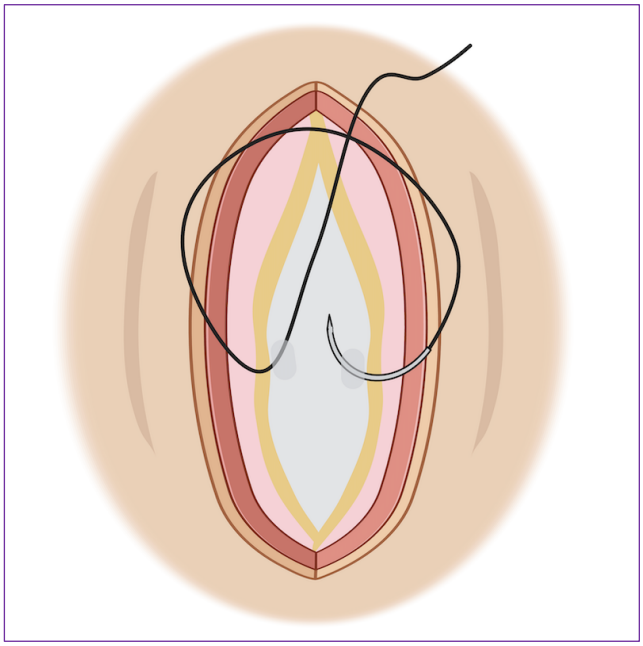

Figure 1. Schematic of fascial plication suture.

Fascial plication sutures have demonstrated effectiveness in high-tension closures, such as on the shoulders and trunk, by enhancing wound stability and minimizing complications.[1,5] However, despite promising anecdotal observations, the absence of robust clinical data or randomized controlled trials leaves their efficacy in dermatologic surgery largely unexamined. Furthermore, not all high-tension defects are suitable for fascial plication. We avoid deep plication in contaminated or infected wounds, in ischemic or poorly perfused tissue, and where critical neurovascular structures are superficial and at risk of entrapment, such as the face, periorbital region, and distal digits. In very thin patients or in sites with limited robust fascia, deep plication can tether skin and produce contour irregularity.

Evidence from other surgical disciplines supports the benefits of fascial plication sutures. Plastic surgeons frequently employ variations of this technique in procedures such as rhytidectomy, dermolipectomy, and abdominoplasty, demonstrating improved tissue stability, reduced seroma formation, better scar outcomes, and higher patient satisfaction.[3]

Preliminary studies suggest similar benefits in dermatologic surgery. Modified fascial plication techniques, such as the buried vertical mattress suture, have been associated with significantly lower rates of keloid and hypertrophic scar formation and reduced scar spread compared to standard bi-layered closures.[4] Additionally, fascial tensile reduction sutures have been reported to lower anterior chest keloid recurrence rates to approximately 5.2%, demonstrating their potential to improve patient outcomes.[5]

In conclusion, fascial plication sutures represent a promising technique with potential applications in dermatologic surgery. Drawing from evidence in other surgical specialties, this research letter highlights the need for further investigation into their role in minimizing complications, enhancing scar outcomes, and improving high-tension closures. Future studies should assess the efficacy of fascial plication sutures in reducing complication rates and improving both cosmetic and functional outcomes. Additionally, research should identify specific defect characteristics (anatomic site, size, and depth of defect) that may benefit most

from this approach. Addressing these questions could provide valuable insights to guide the implementation of this technique in dermatologic practice.

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