

James A. Rieger, M.D.
Cosmetic Plastic Surgery Center
Wichita, KS

INSORB® Absorbable Subcuticular Skin Stapler

ADVANCEMENT IN PLASTIC SURGERY: ABSORBABLE SKIN STAPLER

Novel Skin Closure Device Enhances Productivity, Eliminates Needlesticks, Decreases Hand Fatigue And Increases Practice Longevity

Objective

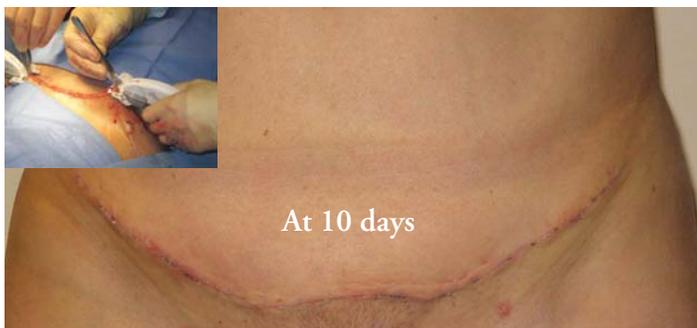
We have evaluated a novel absorbable subcuticular skin stapler (INSORB® Subcuticular Skin Stapler, Incisive Surgical, Inc., Plymouth, MN) in cosmetic surgery procedures to determine its clinical performance in terms of safety, efficacy and cosmesis. As in all surgical practices, we seek improved clinical outcomes while being watchful for opportunities to increase our productivity and efficiency which were also considered in this evaluation.

Background

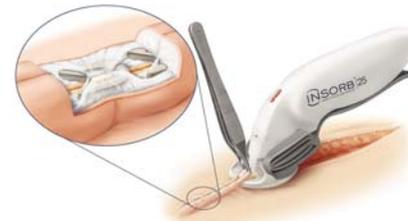
Our prior standard closure method utilized suture for all surgical procedures. The basic tenet of plastic surgery allows for good eversion of the edges and no wound dehiscence. These objectives were achieved with suture, placing an emphasis on relieving wound tension. For example, in a large reduction (1000 - 2000 grams or more), we reduce breast volume sufficiently to assure that the edges can be approximated without excessive tension. With the INSORB closure it is essential to apply this same discipline to achieve wound security and good eversion of the wound edges, and no excessive tension of the incision should be present.

Methods

In the past year the subcuticular stapler has been used to close 42 abdominoplasties, 39 breast reductions, and 31 mastopexies. The closures were observed immediately post-surgery and generally at one week, one month, and at 3 to 6 month follow-up visits. Incisions were closed with a layered technique. Wounds were closed with a layered technique utilizing INSORB Absorbable Staples in lieu of interrupted deep dermal stitches at 7mm intervals followed by a running (4-0) subcuticular stitch and 3M™ Steri-Strips™ to complete the closure. The final running stitch was quick and easy to place within the pre-approximated and everted incision. When closing the abdominoplasties, interrupted supporting sutures were utilized to relieve tension in the deep fascia layer prior to deployment of the INSORB Staples.



Photographs courtesy of Incisive Surgical, Inc.



INSORB|25 Skin Stapler

Results

The INSORB Stapler replaces the long and tedious process of a surgeon placing interrupted sutures, while providing the precision and perfection of an interrupted closure which never bunches or strangles soft tissue. The absorbable stapler was easy to use and demonstrated equivalent efficacy compared to our standard suture closure methods. We dramatically reduced the number of sutures utilized by approximately 50% to 80% in breast reductions and abdominoplasties, and significantly reduced operative and anesthesia time by 45 to 120 minutes. This decrease in operative and anesthesia time should reduce the risk of DVT's, even though none were noted, and should also decrease the need for a Foley catheter. This eliminates catheter costs and complications while encouraging early ambulation.

The dramatic reduction in number of sutures and operating time corresponded to a substantial reduction in hand fatigue from repetitive suturing. The author noted complete resolution of discomfort in the base of the thumb joint associated with long cases since using this device over the past year. We believe the INSORB Stapler will increase the longevity and enjoyment of a surgical practice. This especially applies to extensive procedures with longer operative times. It is important to note that no needlesticks occurred in any of the cases utilizing the INSORB Stapler. We believe this was due to the significant decrease in suturing, a reduction of fatigue, and the superb ability of the INSORB device to close in 'hard to suture' areas, e.g., the lateral convex surface of abdominoplasties and breast reductions.

Conclusions

We achieved excellent cosmetic healing that is comparable or better than the results with suturing. These are comfortable, low maintenance wounds that heal with no apparent inflammation from staples and an uncomplicated post-operative course. Some eversion is often still appreciated at 2 weeks, which evolve consistently to thin flat scars without contour irregularities or discoloration.

It would be unthinkable to revert back to the old standard of suturing considering the advantages of this new absorbable staple technology. Overall, our patients expressed a high degree of satisfaction with the absorbable staple closure.