



A Randomized Clinical Trial Comparing Skin Closure with Tissue Adhesives vs. Subcuticular Suture after Robotic Urogynecologic Procedures

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Introduction: Traditionally, staples and adhesive tapes have been the most commonly used methods of skin incision closure. The choice of which method to use is solely based on the surgeon's preference. Although repairing surgical wounds with suture is the most common method, it is operator dependent, carries an increased risk of needle sticks to the practitioner, and requires more operating room time. The ideal method of incision closure should be simple, safe, rapid, inexpensive, painless, bactericidal and result in optimal cosmetic appearance of the scar.

Objective: To compare skin closure via subcuticular suture versus tissue adhesive (Dermabond) in urogynecological robotic surgeries.

Materials and Methods: We performed a randomized control trial of adult women who underwent any urogynecologic robotic procedure at our hospital from 12/1/17-11/30/18. Skin closure was performed with either tissue adhesive or subcuticular suture. The primary outcome was closure time. Secondary outcomes were cosmesis and wound complications. Cosmesis was evaluated at the 12-week postoperative visit. Data were analyzed using the chi-squared test, Student's t-test and the Mann-Whitney U test.

Results: Forty-seven out of 50 patients (94%) completed their 12-week postoperative visit (n=23 in the tissue adhesives group, n=24 in the suture group). Time for incision closure was significantly shorter in the tissue adhesive group versus the suture group, 5.4 ± 2.0 vs. 25.0 ± 5.7 minutes, respectively, $p < 0.0005$. The cosmesis score was higher in the tissue adhesives group (median=4.0, IQR 25th=3.0, IQR 75th=4.0) than in the suture group (median=3.0, IQR 25th=2.0, IQR 75th=4.0) ($p=0.025$). There was no significant difference in bleeding ($p=1.0$), infection ($p=0.61$) or any extra wound treatment ($p=1.0$).

Conclusions: Our study shows that tissue adhesives had a significantly shorter closure time and resulted in a superior cosmetic appearance of the scar without increasing the risk of wound complications.