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# Application of SurgiWrap® Bioresorbable Sheet in Laparoscopic Surgery, Cesarean Section, and Findings during Secondary Pelvic Surgery

## INTRODUCTION

Complications following the repair of soft tissue in abdominal or pelvic surgery include the attachment of scar tissue. As part of the body's natural healing process, this undesirable and seemingly uncontrollable phenomenon can lead to pelvic pain,<sup>1,2</sup> fertility impairment in women,<sup>2,3</sup> and bowel obstruction.<sup>4,5,6,7</sup> In addition, secondary abdominal or pelvic surgery is often made more complicated by the need to dissect through scar tissue formed subsequent to the initial procedure. The demanding process of dissection through scar tissue can increase the risk of injury to the patient and prolong the operative time.<sup>8,9</sup>

### Case 1:

A 32 year-old Hispanic female, Gravida 3, Para 2, presented with a two-year history of pelvic pain, dysmenorrhea, and menorrhagia. An endometrial biopsy done during the initial visit showed secretory endometrium. She previously had a bilateral tubal ligation. The pelvic sonogram reported bilateral complex adnexal masses, measuring approximately 3 cm in diameter. For the treatment of the pelvic pain, and bilateral adnexal masses the patient agreed to undergo laparoscopic ovarian cystectomy. The patient also consented to have an endometrial ablation to treat her menorrhagia.

Review of the pelvis (Figure 1) showed enlarged ovaries adhered to the posterior uterine wall, above the cul-de-sac. Next, the ovarian capsules were opened and bilateral endometriomas were encountered (later confirmed by pathology).

After removing the endometriomas the dense STA between the ovaries and the uterus were taken down

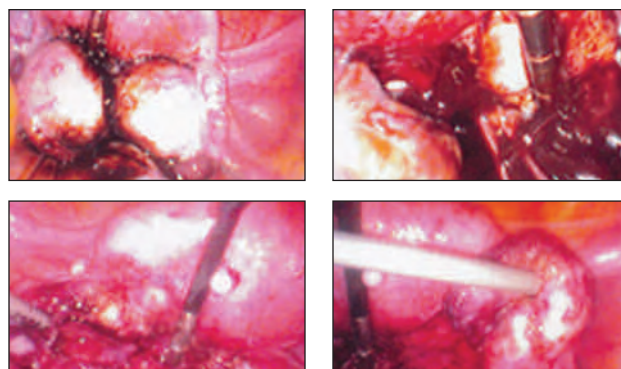


Figure 1: STAs noted between the uterus, ovaries, and posterior uterine wall.

with blunt and sharp dissection. Because of the adhesiolysis, the posterior uterine wall had multiple areas of minimal bleeding. If left untreated, scar tissue would have formed as part of the body's natural healing process. To support the soft tissues and to minimize soft tissue attachments (STAs) to the device, SurgiWrap® Bioresorbable Sheet (MAST Biosurgery, San Diego, CA) was used. The SurgiWrap sheet was inserted into the abdomen through the 10-mm umbilical trocar. Next, the sheet was unrolled and placed between the ovaries and uterus to support the soft tissues and minimize the attachment of surrounding tissues. At the conclusion of the laparoscopy, the endometrial ablation was performed. Both surgeries were performed without any complication.

The patient's endometriosis was treated with intramuscular GnRH agent for six months. The ovarian function was suppressed with intramuscular contraceptives. During the six months of GnRH agent therapy, and the subsequent intramuscular

contraceptives, the patient continued to report pelvic pain. After discussing several options with the patient, a total abdominal hysterectomy with bilateral salpingoophorectomy was performed.

A year after the laparoscopic ovarian cystectomy, the patient underwent a total abdominal hysterectomy with bilateral salpingoophorectomy. A Pfannenstiel incision was used to perform the procedure. Upon entering the abdominal cavity, it was noted that no STAs had formed (Figure 2) between the ovaries and the posterior uterine wall. There was no residual SurgiWrap found in the pelvis. The cul-de-sac was also free of STAs. Due to the absence of any STAs the total abdominal hysterectomy with bilateral salpingoophorectomy was completed in less than one hour. The post-operative period was uneventful and the patient was discharged two days later.

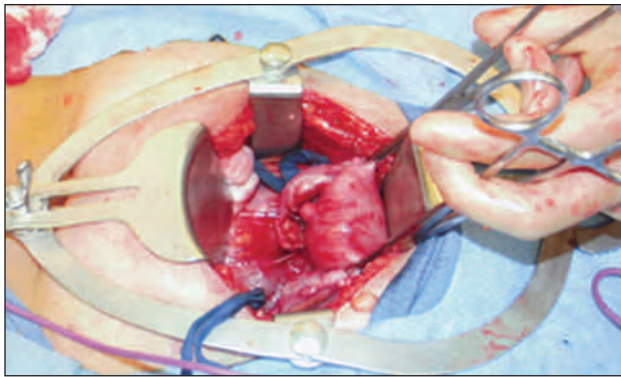


Figure 2: Findings during secondary laparotomy. No attachments are noted between the uterus and ovaries.

## DISCUSSION

This patient suffered from endometriosis which had caused extensive scar tissue. During a first laparoscopic procedure the scar tissues were lysed and a resorbable barrier sheet was placed to control wound healing. In a secondary pelvic surgery one year later no STAs were found resulting in decreased operating time, as well as an uneventful post-operative recovery.

### Case 2:

A 39-year-old, white female, Gravida 4, Para 4 underwent a repeat cesarean section because her previous three pregnancies were all abdominal deliveries. During her third cesarean, scar tissues were found between the omentum, the bladder, and the lower uterine segment. After closing the uterine incision, SurgiWrap was placed over the uterus and the bladder flap. SurgiWrap was then held in place

using two interrupted sutures through the Rectus muscle on either side and in through the sheet. In this case, SurgiWrap was also used to support the soft tissues and to minimize STA to the device because the patient was planning to get pregnant in the future and abdominal delivery would be necessary.

A year and a half later, the same patient had her fourth cesarean performed by the same surgeon. On entering the abdominal cavity no STAs were found between the omentum, uterus, bladder, and lower uterine segment.

## CONCLUSION

Several reports have shown scar tissues carry an increased risks of injury during subsequent pelvic surgery and may prolong operation time.<sup>8,9</sup> In our practice, we make every effort to enhance patient outcomes by utilizing appropriate options. Using a protective sheet like SurgiWrap Bioresorbable Sheet to minimize STAs to the device is an option that supports the independent healing of adjacent tissues at the surgical site. "SurgiWrap has been placed in over one hundred (100) patients seen by us in the last eighteen months. Repeat surgeries are now being done on some of these patients and to date SurgiWrap has shown great promise in minimizing STA, as shown in these case reports." Dr. Lamoutte and Dr. Chatterji

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