

Single Incision Laparoscopic Myomectomy

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ABSTRACT

Single port laparoscopic surgery (SPLS), also called SILS is the natural extension of multi-incisional laparoscopic surgery, in the quest for reduction of traumatic insult and residual scarring to the patient. Today with the evolution of newer instruments, bidirectional self-retaining sutures, and surgical experience we are able to perform many surgeries in gynecology.

Key words: Myomectomy, single incision laparoscopy, SILS

INTRODUCTION

A 28-year-old woman, with primary infertility of three years was referred for Laparoscopic Myomectomy with a history of severe dysmenorrhea and a diagnosis of posterolateral wall myoma. On pelvic examination, a palpable myoma was noted on the posterior uterine surface, and the uterus was felt to be approximately 10 gestational weeks in size. No adnexal masses were palpated. The transvaginal scan demonstrated an anteverted uterus measuring $9.4 \times 6.9 \times 5.0$ cms. A well-circumscribed mass measuring $5.16 \times 6.0 \times 4.25$ cms was seen in the posterolateral fundus and was found to be impinging on the endometrial stripe.

The patient was given a choice between conventional laparoscopic myomectomy and the single incision approach. The patient opted for SILS, as she strongly preferred a cosmetically appealing outcome.

SURGICAL TECHNIQUE

Diagnostic hysteroscopy was performed, which demonstrated a normal endometrial cavity. A 2 cm vertical incision was made at the base of the umbilicus and peritoneal access was gained. The SILS port (Covidien,

Inc., Norwalk, CT), [Figure 1]^[1] was inserted through the incision. The device, made from an elastic polymer, was slightly hourglass shaped and could be deployed through 2 cm fascial incision. It contained four openings: one for insufflation via a right-angled tube and three that could accommodate trocars 5 to 12 mm in size. The compressibility of the elastic polymer allowed for the access ports to expand and form fit the space in which they resided, and the ports also passed through the working channels.^[1]

After careful survey of the abdomen and pelvis, dilute vasopressin, 20 U, in 100 mL of saline solution, was injected subserosally over the posterior myoma. A transverse incision was made using a monopolar spatula over the myoma. Once the correct plane was entered, the myoma was dissected out of the uterus using a 5 mm myoma cork screw and blunt scissors. Using mostly blunt dissection, the enucleation of the myoma was done [Figure 2 and 3].

The myoma bed was closed in a continuous single layer. Hemostasis was ensured and a piece of adhesion barrier (Gynecare Interceed; Ethicon Inc., West Somerville, New Jersey) was then cut in half, introduced into the

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Figure 1: The SILS TM port has the capacity of up to three laparoscopic instruments of 5 to 12 mm



Figure 2: Right posterolateral intramural myoma

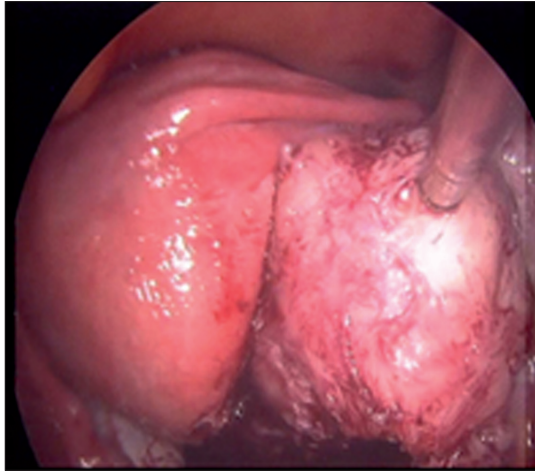


Figure 3: Enucleation of myoma



Figure 4: Morcellation (Rotacut)

abdomen through one of the 5 mm trocars, and placed over the hysterotomy incision. Excellent hemostasis was demonstrated. The myoma was then grasped with a 12 mm claw forceps and electric morcellation was done using Rotacut G1 morcellator (Karl Storz, Germany) [Figure 4].

The advantages obtained by electronic morcellation over manual morcellation from umbilical incision site are:

1. Reduction in operative time
2. Decreased risk of hernia formation due to absence of tearing or stretching of fascia
3. Lower risk of injury to the surrounding tissues.

As laparoscopic myomectomies are performed routinely in our center, Rotacut is preferred over Gynecare morcellax for its cost effectiveness and speed. It is reusable and can be used indefinitely with periodic replacement of the cutting blade.^[2]

The fascia was closed with a running 0 polyglactin 910 (Vicryl, Somerville, NJ) suture. The skin was then approximated with a series of interrupted 3/0 Monocryl sutures (Ethicon Inc.). Ten milliliters of 0.5% bupivacaine hydrochloride (sensorcaine) were injected into the incision site, and Dermabond adhesive (Ethicon Inc.) was applied. The total procedure time (time from first incision to end of procedure, D and C) was 2 hours 10 minutes.

DISCUSSION

Single-incision surgery has been reported to offer patients improved cosmetic outcomes as compared to multiport laparoscopic surgery, and possibly less postoperative pain, although these potential benefits have yet to be demonstrated in a well-designed prospective trial.^[3] A number of advantages have been proposed including cosmesis, less incisional pain, less blood loss, and the ability

to convert to standard multiport laparoscopic surgery. An additional morcellation port is avoided as specimen retrieval / morcellation can be done through the umbilical incision.^[4]

The primary limitations of SILS are the restricted degrees of freedom of movement, lack of triangulation,^[3] the number of ports that can be used, and the proximity of the instruments to each other during the operation – all of which increase the complexity and technical challenges of the operation. Many of these difficulties may be related to the technique of port placement and utilization during single incision laparoscopic surgery. A number of methods have been described for port access to perform SILS, including multiple fascial punctures through one skin incision and use of novel port access devices.^[5] To further overcome the technical challenges of SILS, different instruments that provide angulations and small profile trocars, Endostitch, are being developed.

The barbed suture greatly facilitates myometrial closure because there is no need to tie knots and there is no backsliding of the suture, which enables continuous wound closure with even distribution of tensile strength throughout the repair. These benefits of barbed suture are especially valuable in single-incision surgery, because intracorporeal knot tying can be more challenging here than in the multiport approach.^[3,6]

Currently, careful case selection is paramount, so that these procedures can be explored safely, with a low threshold to convert to standard laparoscopy, as indicated, for safety and quality of care. Single-access laparoscopic myomectomy is feasible with decreased morbidity and improved cosmetic results. The use of novel port access devices, articulated instruments, and Endostitch self-retaining sutures, makes the procedure easier, with a potential for saving time.

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