

# Single Incision Laparoscopic Surgery For Appendicectomy: A Retrospective Case Study Of 16 Patients

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## **Abstract:**

**Background:** Single-incision laparoscopic appendicectomy surgery is becoming a more widely accepted surgical approach. However, the feasibility and safety of single-incision laparoscopic appendicectomy are yet to be established. The present case study of 16 patients outcomes following the use of SILS on patients with acute appendicitis or perforated appendicitis.

**Subjects and Methods:** Data were prospectively collected and retrospectively analyzed for all patients who underwent SILS appendicectomy at our institution. This included patient demographic data, intraoperative, and postoperative outcomes.

**Results:** Sixteen patients underwent SILS appendicectomy between April 2014 and December 2014. The patients were studied in terms of age, gender ratio, body mass index, and diagnoses. Operative time was shorter with SILS appendicectomy. No patients in the SILS appendicectomy required conversion to open surgery. Patients stayed an average of 1.36 days after SILS appendicectomy.

**Discussion:** SILS appendicectomy seems to be a safe and efficacious technique. Further work in the form of randomized studies is required to investigate any significant advantages of this new and attractive technique.

## I. BACKGROUND

Laparoscopic appendectomy (LA) is becoming popular for the treatment of acute and perforated appendicitis. Since it was first described, LA has been modified various times. We present the results of a new technique of LA conducted through a single port without exteriorizing the appendix to perform the operation. Single-port laparoscopic surgery is a feasible way to perform appendicectomy. This includes obese patients, uncomplicated & complicated appendicitis as well as exploratory laparoscopy. In this modern era of minimally invasive surgery, cosmesis and early recovery are strongly emphasized. To reduce abdominal trauma and improve cosmesis, surgeons have adopted a single-port laparoscopic appendectomy for patients with acute appendicitis.

Single port appendectomy (SPA) is gaining quite an interest in the surgical community. Differently from single access cholecystectomy the operation is easily feasible and potentially safe, as the procedure can be carried out

approximately in the same manner as the three-port laparoscopic appendectomy (LA).

In 2008 the first special trocars to perform a laparoscopic operation through one small incision became available (single port laparoscopic surgery). From this time "standard" laparoscopy via 3 – 4 incisions had to compete with NOTES and single port laparoscopic surgery. Single umbilical incisions reported in previous studies are typically 15 to 20 mm in length, and the length of the fascia incision may be closely associated with postoperative pain. Although the technical feasibility and patient satisfaction with SILS appendectomy over conventional laparoscopy has been well documented, this technique has not to date been routinely adopted in widespread clinical practice in the India. Part of the reason for this reluctance may lie in the perceived technical difficulty of single port surgery, largely due to the loss of three-port triangulation. In addition, the majority of descriptions of SILS procedures utilise specialised and expensive ports and roticulated instruments.

In recent years, surgeons have developed a minimally invasive approach to surgery known as natural orifice transluminal endoscopic surgery (NOTES). It has been suggested that this approach, where access to the peritoneal cavity is gained through the mouth, anus, vagina or urethra, may reduce many of the complications associated with conventional surgical approaches, including hernias, wound infections and postoperative abdominal wall pain (Wagh and Thompson, 2007), as well as promote better cosmesis with the promise of potentially “scarless” surgery.

## II. METHODS

Clinical data were prospectively collected for SPLA cases performed at MGM MEDICAL COLLEGE & HOSPITAL, AURANGABAD by a single surgeon between April 2014 and December 2014, including operative time, peri operative complications, and length of hospital stay. Each case of SPLA was performed using conventional laparoscopic instruments through the single umbilical incision. To compare outcomes, a retrospective review was performed for those

**RESULTS:** The 16 study cases included 9 men and 7 women with mean age of 31 years (range 9-65 years) and mean body mass index (BMI) of 22.3kg/micr(range 15-29.7kg/m). The mean operation time was 61.3 min (range 24-120 min). Drainage was used in two caes with perforated appendicitis. Bowel movements returned at mean of 1.2 days, and oral feeding was resumed on postoperative day 1.2. The pathology showed negative inflammation in 6 cases, inflamed appendicitis in 5 cases, gangrenous appendicitis in 3 and perforated appendicitis in 2 cases. No patient required readmission due to pericecal inflammation, pain, percutaneous drainage of fluid collection or any umbilical wound complications.

## III. RESULTS

- ✓ Technical difficulty and anatomical variations are the most common factors for conversion of single incision multiport laparoscopy to conventional multiport laparoscopy procedure.
- ✓ No intra operative or postoperative complications occurred inspite of technical difficulty or anatomical variations. From this it can be concluded that single incision multiport laparoscopic procedures are equally safe compared to conventional multiport laparoscopy procedure.
- ✓ In Single incision multiport laparoscopy procedure, Operative time required is higher than conventional multiport laparoscopy procedure.
- ✓ Single incision laparoscopic appendectomy is a feasible and effective operative technique for uncomplicated acute appendicitis.
- ✓ Cosmesis is one of the advantage to patient in single incision laparoscopic procedure.
- ✓ The procedure can be selectively and judiciously performed by surgeons trained in regular laparoscopic surgery. Long learning curve is essential to prevent

conversion of single incision multiport laparoscopic procedure to conventional multiport procedure.



*Image 1: Image of single incision multiport laparoscopic appendectomy surgery*



*Image 2: Postoperative image of single incision multiport laparoscopic appendectomy surgery*

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