View point

Single-incision two port laparoscopic appendicectomy – How we do it?

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Abstract

The next advancement in the field of minimally invasive surgery, in the recent times, has been the use of single-incision for accessing the abdominal cavity. Potential benefits of single-incision laparoscopic surgery (SILS) are decreased postoperative pain, reduced port site complications and early recovery. We report a novel technique of SILS for performing appendicectomy by employing two ports and conventional laparoscopic instruments without the need for any expensive specialized equipment.

Key words: Single-incision laparoscopic surgery, laparoscopy, appendicectomy

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The gynecologists are credited for performing single-incision laparoscopic surgery (SILS) as early as 1969 by doing tubal ligation through a single incision at the umbilicus. In 1992, this technique of SILS was adopted by the surgeons for performing appendicectomies. There is still no consensus among the surgical community with regard to any additional benefits of SILS to the patient or the surgeon or the health care industry in comparison with the conventional laparoscopic approach. We report a novel technique for performing this advanced procedure, using conventional instruments and not employing any specialized SILS port equipment, with an objective to bring down the cost factor.

Surgical technique-How we do it?

Placement of the ports

The SILS procedure is done by making a 1-1.5 cm vertical sub-umbilical incision. With minimal dissection, a small fascial plane is created to allow placement of two 5 mm ports – an optical and a working port. We utilized only 2 ports (both 5 mm size) which is a further modification of the standard 3 port SILS technique described in the literature. The optical port is placed close to inferior part of umbilicus, cranial to the working port. We used a 5 mm 30 degrees telescope for a wider optimal vision. A diagnostic laparoscopy is done routinely as the initial step.

Control of appendix

The appendix is held in position using an indigenously devised needle based suture loop introduced in the RIF region (Fig 1). A 20 gauge cannulae...
la threaded with a 1-0 polypropylene loop is inserted in the RIF region under vision. A grasper is passed into the loop and the appendix is pulled across the loop. This loop is tightened from outside so that the appendix is held in a vertical position (Fig 2). This enabled an easy dissection of the mesoappendix with the diathermy.

The suture loop is now released and the appendix is made to lie in a horizontal axis. An endoloop is passed through the port and the loop is slid across the appendix to reach the base. This is then tightened and cut. Similarly, one more loop is placed and the base of the appendix is divided in between. The retrieval of the appendix is done through the 5 mm port. In case of difficulty in delivering, the 5 mm port could always be converted to 10 mm and the appendix can be brought out easily. The ports are removed and the defects in the linea alba are closed with 1-0 vicryl sutures. The wound is infiltrated with local anesthetic and the skin is approximated with 3-0 polyamide sutures.

Post-operative care
Early ambulation and oral feeds is encouraged and the patient is usually discharged on the next day. Follow up is arranged on the 8th post-operative day for suture removal (Fig 3).

Discussion
With progressive technological advancements, SILS may represent the future of laparoscopic surgery. A wide range of operations has been reported using the SILS technique, right from appendicectomy to nephrectomy and sleeve gastrectomy. Most of these reports are usually in the form of case reports or series. Only few randomized controlled studies are available in the literature that compare conventional laparoscopic surgery with the SILS technique.

There is no standard, universal technique for single-port access to the peritoneal cavity for SILS. Many descriptions are available in the literature ranging from the usage of simple glove as in glove-port SILS, using gelport or other modifications depending on the manufacturing companies. We have avoided using any form of expensive SILS ports and directly accessed the peritoneal cavity in the sub-umbilical plane. This method would be of great benefit to the surgeons practicing in hospitals with cost constraints or limited resources.

Potential advantages include less risk of complications like port site hernias, hematomas, wound infection and less postoperative pain scores. The duration of SILS may be longer than equivalent laparoscopic procedures, but this would come down with experience.

Conclusions
SILS technique, though technically and ergonomically challenging procedure, can provide less postoperative pain, early recovery and discharge from the hospital and superior cosmetic results. In the current scenario, one should make a judicious choice in selecting the appropriate patients for this very advanced procedure that requires a long
learning curve. Further, randomized controlled studies will establish the exact place of this technique in the existing armamentarium of the practicing laparoscopic surgeons.

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**References**


