Gynecology and Minimally Invasive Therapy 3 (2014) 43–46

Contents lists available at ScienceDirect

Gynecology and Minimally Invasive Therapy

journal homepage: www.e-gmit.com

Original article

A modified three-port "hidden scars" surgical approach in gynecology: A surgeon's experience of an initial 72 cases

Felix Wu Shun Wong [a,*], Eric Tat Choi Lee [b]

[a] School of Women's and Children's Health, University of New South Wales, Sydney, New South Wales, Australia
[b] Canossa Hospital, Hong Kong SAR, China

ARTICLE INFO

Article history:
Received 13 October 2013
Received in revised form
7 February 2014
Accepted 7 February 2014
Available online 16 June 2014

Keywords:
gynecology
hidden scars
laparoscopy
surgical approach

ABSTRACT

Objective: The study objectives were to determine the surgical outcomes of a personal series of gynecological patients treated with a modified three-port "hidden scars" surgical approach (HS surgical approach) for the treatment of benign gynecological diseases.
Study design: This was a retrospective series performed by one of the study authors FW to analyze 72 women treated with a modified three-port HS approach for the treatment of benign gynecological diseases from January 2013 to August 2013.
Results: Patients' characteristics, pathology, outcome, and gynecologic procedures performed using this HS approach are presented. The surgical procedures included 34 laparoscopic adnexal ovarian and tubal surgeries, 28 laparoscopic hysterectomy (including pelvic lymphadenectomy for the treatment of uterine cancer in 1 patient), eight laparoscopic myomectomy, one laparoscopic adhesiolysis, and one laparoscopic excision of severe pelvic endometriosis. Laparoscopic myomectomy and excision of advanced pelvic endometriosis took longer time to perform with this approach, but there was no significant difference in the amount of blood loss and length of stay in the hospital. There was no perioperative complication in this personal series.
Conclusion: The HS approach in gynecological surgery is feasible, safe, and reproducible when applied in women with gynecological diseases. The operation time, length of stay, and outcome would be comparable to conventional laparoscopic surgery.

Introduction

Scars are the hallmarks of surgery, and therefore, no surgery is scarless. Even the single-incision laparoscopic surgery (SILS) technique, which is the latest innovation in the advancement of endoscopy, produces scarring. It only requires a single incision, but produces a reduced number of scars that are not obvious to others except for the doctor and the patient. SILS works by replacing the three- to four-portal incisions of conventional laparoscopy with a single 2–3-cm incision at the umbilicus. The entire surgical procedure is completed through this single incision. This laparoscopic approach aims at eliminating the use of accessory ports and minimizing the potential complications related to those ports, and provides a safe, "scarless" and esthetic option.[1,2] Patients often enjoy speedy postoperative recovery times and are impressed by the "scarless" technique.

However, many surgeons had found it clumsy to perform this type of surgery because of its technical limitations. Even though modified laparoscopic instruments and flexible cameras have been developed to facilitate the operative performance, additional instrumentation is costly and new techniques to overcoming this intrinsic difficulties are needed to make SILS more applicable.

SILS also requires the use of specially designed umbilical port devices developed by various medical equipment manufacturers. These devices enable gynecologists to achieve and complete their SILS. However, they impose additional costs without any documented operative advantages. Using the same concept, some surgeons used multiple conventional trocars placed at the umbilicus to perform single-site multiple incisions laparoscopic surgery, yet they encountered the same technical difficulties as with SILS. In this paper, FW reports and shares his experience of a modified three-port "hidden scars" (HS) laparoscopic surgery technique. Using this approach, the author demonstrates that this new approach

Conflicts of interest: All contributing authors declare no conflicts of interest.

* Corresponding author. School of Women's and Children's Health, University of New South Wales, Sydney, New South Wales, Australia.
E-mail address: fwong3@hotmail.com.hk (F.W.S. Wong).

http://dx.doi.org/10.1016/j.gmit.2014.05.003

possesses the technical advantages of both SILS and conventional laparoscopy.

Surgical techniques

Ports

The patient was positioned in a lithotomy position with her legs held apart, similar to that while performing a conventional laparoscopy. The key to this approach is to position the port incisions on the abdomen that can hardly be noticeable. This modified three-port HS laparoscopic approach is described as follows:

The positions of the three ports

A small 5-mm incision is made at one side (8 o'clock) of the umbilicus, followed by a direct entry of an optic tip trocar and cannula under direct laparoscopic vision as described previously by the same author.[3] Another 5-mm trocar/cannula is introduced 0.5 cm apart, but at the other side (4 o'clock) of the umbilicus. An additional port is placed at the mid-suprapubic point just below the level of pubic hairline. If the insertion of the trocar above the hairline is deemed necessary for augmented triangulation in manipulation, a 3- or 5-mm trocar and cannula can be positioned over the left lower quadrant of the abdomen if a surgeon stands on the patient's left side. This side port using a 3-mm mini-port trocar and cannula can result in a smaller or almost invisible scar. The port positions of the laparoscope and operative instruments are shown in Fig. 1.

Instruments

A conventional straight laparoscope and operative instruments are used with this approach. No angulated instruments or flexible camera are required. A 5-mm laparoscope, preferably a 30° angled laparoscope, should be used to provide an angled view. This would minimize the risk of clashing with other operating instruments. However, it is worth noticing that the head of the portal cannula at the umbilicus should be small, to allow enough space between the laparoscope and the operating instrument in order to operate without any interference. At the time of specimen retrieval, it is also necessary to enlarge one of the 5-mm incisions at the umbilicus into a 10–12-mm incision, followed by an insertion of a blunt 10–12-mm trocar and cannula. This serves to allow the introduction of an Endobag for collection and retrieval of specimen, and for inserting a 10-mm grasping forceps or a 12-mm electric morcellator for myomectomy and morcellation. When surgical suturing is required, the enlarged incision is also used for the introduction of needle and stitches.

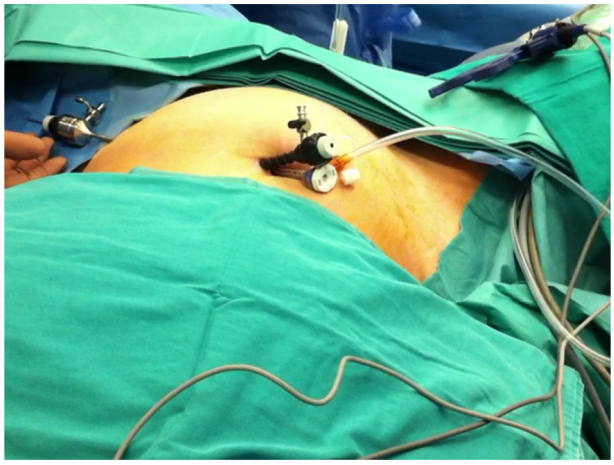

Fig. 1. The positions of two ports in the umbilicus and one in the left lower abdominal quadrant as described. Note the size of the two 5-mm cannula heads, which can sit comfortably next to each other.

The surgical steps used for the various gynecological conditions in this series were similar to those of conventional laparoscopic procedures such as ovarian cystectomy, salpingo-oophorectomy, myomectomy, and hysterectomy. The key points are briefly presented as follows:

Adnexal disease (salpingo-oophorectomy/oophorectomy/ovarian cystectomy)

Adnexal surgery was performed using this HS approach without the need for specialized instruments. Mobilization of the adnexal cyst or tumor was achieved using a uterine manipulator. At the same time, the operating instruments can work from the umbilical port, the low midline port, or a left lower quadrant port. The surgery was completed in a similar manner to that of conventional laparoscopy. The adnexal ovarian and tubal specimens were removed from the abdomen using an Endobag, which was inserted through a 10-mm cannula placed over an enlarged 5-mm port at the umbilicus. The 10-mm cannula can still allow the subsequent use of a 5-mm instrument by the addition of port-size reducer.

Myomectomy

The number of cases is small in this series because of the technical difficulty associated with surgery on large fibroid(s). If uterine size was larger than 12 weeks, it would be difficult to manipulate the fibroid if the position of the port was placed below the hairline. Cases that required a much higher lower port placement for instrument manipulation were excluded from series, because the scars would then become too conspicuous and would not fit into the concept of HS. After myomectomy, laparoscopic suturing using the V-lock suture facilitates an easy completion of two-layer myomectomy wound closure. The leiomyomas were then morcellated and removed piece by piece using a 12-mm electrical morcellator inserted through an enlarged umbilical port under direct visualization with a 5-mm laparoscope placed at the lateral port or an angled laparoscope over the suprapubic port.

Hysterectomy

In this series, laparoscopy-assisted vaginal hysterectomy [LAVH ± bilateral salpingo-oophorectomy (BSO)] was performed in the 28 patients who underwent hysterectomy. No technical difficulty was encountered while performing these procedures. LAVH was successfully performed and the uterus was removed through the vagina with or without vaginal morcellation. LAVH is most suitable using this approach because it did not require laparoscopic suturing of the vaginal vault as in the case of total laparoscopic hysterectomy (TLH) or morcellation of the uterus as in the case of laparoscopic subtotal hysterectomy (LSH). Technically, with the HS approach, both TLH and LSH can be performed, but they were not done in this series.

Results

Laparoscopic surgery using the HS approach was performed in 72 women. The patients' characteristics, pathology, gynecologic procedures, and outcomes are listed in Table 1.

Thirty-four patients underwent laparoscopic adnexal surgery, including 20 for salpingo-oophorectomy and 14 for ovarian cystectomy. Twenty-eight patients had LAVH ± BSO and eight patients