



EVALUATION OF TRANSUMBILICAL ROUTE AS PRIMARY PORT IN LAPAROSCOPIC GYNECOLOGICAL SURGERIES

Obstetrics & Gynaecology

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ABSTRACT

Background: Minimally invasive surgeries such as laparoscopic surgeries have become the order of the day for many surgical diseases. Single-port transumbilical laparoscopy, also known as embryonic natural orifice transumbilical endoscopic surgery (E-NOTES), has emerged as an attempt to further enhance cosmetic benefits and reduce morbidity of minimally invasive surgery. The main aim of this study was to assess the port site infection, cosmetic, patient satisfaction and outcome. **Methods:** Retrospective review was conducted 100 patients who underwent laparoscopic surgeries were included in the study and demographic details were noted for all the patients. All of them were given prophylactic antibiotics before the surgery and the surgeries were performed under anesthesia. **Results:** A total of 100 cases were studied. Tubal ligation was the main indication of surgery. The mean time recorded to establish pneumoperitoneum was 15-45 seconds. Post-operative primary port site infection rate was 3%. No intra-abdominal injury was noted during the entry of primary port and there was no port site hematoma or recorded hernia over the period of month. **Conclusion:** Laparoscopy offers the advantage of rapid post op recovery. This technique of trans-umbilical primary port placement is one of the safest, fastest and easiest techniques to enter the peritoneal cavity.

KEYWORDS

Laparoscopy, primary port insertion, transumbilical route, port site infection, cosmetic outcome

INTRODUCTION:

Laparoscopic surgery is a well-established alternative to open surgery across disciplines. Minimally invasive surgeries such as laparoscopic surgeries have become the order of the day for many surgical diseases. Laparoscopic surgery became the standard care for many gynecological and surgical conditions with documented benefits and excellent outcomes.

The main reasons for preference of laparoscopic surgeries to abdominal surgeries are the low cost, less pain and scarring, faster convalescence and lesser hospital stay. Major complications are access related such as major vascular injury or inadvertent bowel injuries, which are life threatening. These complications are by far very rare. (1,2)

Current efforts are aimed at further reducing the morbidity associated with minimally invasive surgery and the rapid advancement in science in CCD cameras and the flexible light sources have made laparoscopic surgery more affordable and widely available.

To this end, two recent innovations are being developed, either pure or hybrid: (1) natural orifice transluminal endoscopic surgery (NOTES), whereby intraperitoneal access is gained through the mouth, anus, vagina, or urethra and the viscous-of-entry is perforated to reach the surgical target; and (2) embryonic natural orifice transumbilical endoscopic surgery (E-NOTES), wherein the surgical scar is virtually concealed within the umbilicus, an embryonic natural orifice.

Most important step in laparoscopy is access to the peritoneal cavity. It is estimated that 50% of complications in laparoscopy occur during the first port entry. Various ports are:- (5)

- 1) Superior crease of umbilicus
- 2) Inferior crease of umbilicus
- 3) Transumbilical
- 4) Palmer's point
- 5) Le-Huang's point
- 6) Jain point

Transumbilical point is least preferred due to fear of infection and loss of strength in tissue at the point. This study evaluates a trans-umbilical primary port placement, an open technique, which is being used in C.U. SHAH Medical college & hospital. In this technique small incision is made in the sub-umbilical region, opening the peritoneal cavity, blunt trocar is then inserted through this incision then insufflation with CO₂ is done creating pneumoperitoneum.

Counseling and Informed Consent

Patients undergoing laparoscopic procedures must be informed of the risks and potential complications as well as alternative surgical methods. Counseling before laparoscopy should include a discussion of the entry technique used and the risks associated with laparoscopic entry injury to the bowel; the urinary tract; blood vessels; omentum; and other surrounding organs. Potential complications at a later point in time include wound infections, pain due to adhesions, and the formation of hernias (4,5)

The counseling must include the patient's individual risk depending on her body mass index, potential obesity, or significant underweight, as well as any immunosuppression that may be present. Depending on the patient's medical history, it would be important to take anatomical malformations, midline abdominal incisions, and/or a history of peritonitis or inflammatory bowel disease into account. (6,7)

A. Aim of the Study:

evaluate transumbilical port as primary access to the peritoneal cavity in gynaecological laparoscopic surgeries with regards to approach, complications and cosmetic outcomes.

B. Objectives of the Study:

In transumbilical route as primary port in laparoscopic gynecological surgeries.

- 1) To find out the Feasibility of the approach.
- 2) To describe Intraoperative complications.
- 3) To describe Postoperative complications.
- 4) To describe Cosmetic outcomes.

MATERIAL AND METHODS

This study was carried out in the Gynaecology department at C.U. SHAH MEDICAL COLLEGE & HOSPITAL, SURENDRANAGAR, GUJARAT, INDIA 01/12/2021 To 01/06/2022. Around 100Pt who has been posted for various laparoscopic gynaecological procedure

Inclusion criteria:

Patient undergoing laparoscopy for the following :

- 1) Pain/Endometriosis Staging/Infertility
- 2) Hemodynamically stable patient with ectopic pregnancy.
- 3) Benign cysts of ovaries and Paraovarian cysts.
- 4) Dysfunctional uterine bleeding and uterine pathology within the uterus less than 12 weeks.
- 5) Sterilization.

Exclusion criteria:

Previous vertical scar of abdomen

Procedure:

All the patients were operated under general anesthesia. Umbilicus was cleaned with povidone-iodine solution 5%.

Umbilicus was then held and traction was applied with allis forceps in bilateral edges and was lifted up & then umbilical swab was taken for culture, to make sure if there are any microorganisms which can cause an infection later.

Surgical blade no.15 was used to give vertical trans-umbilical incision of around 1.5 cm- 2 cm in the umbilicus opening the peritoneal cavity . In some cases, if peritoneal cavity did not directly open, then the peritoneum was held with forceps and incision was given over to open the peritoneal cavity.

The lower edge of the incision, peritoneum was held with Kocher forceps and 1(4 metric) VICRYL*Plus Heavy Reverse Cutting (polyglactin 910) (port vicryl) was used to hitch the peritoneum, applying stay suture.

Maintaining the upward pull on the 1(4 metric) VICRYL*Plus stay suture, blunt cone trocar was screwed in to reach the peritoneal cavity. The trocar was then held in place (fixed) with the help of 1(4 metric) VICRYL*Plus stay sutures (which was already been hitched with the peritoneal cavity.Finally, pneumoperitoneum was established and laparoscope was introduced in peritoneal cavity. The time from incision to the establishment of pneumoperitoneum was recorded.

100 patients who underwent laparoscopic surgeries were included in the study. Demographic details such as age, weight height, body mass index were noted for all the patients.

Preoperative preparation was done by complete bath prior to surgery using antiseptic soap and the parts were prepared by shaving method. All of them were given prophylactic antibiotics before the surgery. The surgeries were performed under general anesthesia. For all the cases reusable ports were used after sterilization with ethylene oxide (ETO).

Pneumoperitoneum was created using veress needle in supra or infra umbilical incision and a 10 mm safety trocar (primary trocar) introduced in to the abdominal cavity. The time of the troca entry was noted. All the instruments carefully after surgery and in cases where the ports were ≥ 10 mm, the fascia was closed by sewn intermittent suture.

RESULT:

All of the patients were under go various laparoscopic gynaecological procedure via transumbilical route like tubal ligation, Diagnostic laparoscopy for infertility, cystectomy & hysterectomy.All patients who were posted for various gynecological laparoscopic producer were tubal ligation followed by Total laparoscopic hysterectomy, Diagnostic scopy (for infertility), cystectomy and BMI, Feasible time of approach , outcome and satisfaction of patients were been listed in following table

Table 1: Age wise distribution of patients

Age group(in years)	Number of patients
21-25	02
26-30	24
31-35	64
Above 35	10
Total	100

Table 2: Type of operation

Type of operation	Number of patients
Tubal ligation	
Cystectomy	
Total laparoscopic hysterectomy (TLH)	
Diagnostic scopy (for infertility)	

Table 3: Body mass index of patients

BMI of patients	Number of patients
Below 18.5	00
18.5 - 24.9	72

25 - 29.9	20
30 - 34.9	06
35 - 39.9	02
Above 40	00

Table 4 : Time of approach

Time of approach (in seconds)	Number of patients
0-30	58
30-60	40
Failure	02

Table 5 : Outcome of patients

Outcome of patients	7th day	14th day
Wound gapping	00	00
Pus discharge	01	03
Blood discharge	02	05
Healthy tissue	97	95

Table 6 : patients satisfaction

Patients satisfaction	7th day	14th day
Yes	97	92
No	03	08

DISCUSSION:

There is no debate that laparoscopic surgery has had a tremendous positive impact on patients and the healthcare system. Patients tend to have less pain, less morbidity and return to their daily activities more quickly. Thus, the number of laparoscopic procedures done each year continues to rise substantially.

Just like the open surgeries, laparoscopic surgeries are also not without complications.Insertion of the primary port to create a pneumoperitoneum is a critical step in laparoscopy procedures.

Port site complications can be grouped into postoperative complications and access-related complications, and these have been reported in all age groups. It has been reported that obesity is one of the risk factors for increased morbidity related to port site due to various factors such as the need for longer trocars, thick abdominal wall, need for larger skin incision to expose fascia adequately, and limitation in mobility of the instrument due to increased subcutaneous tissue. So, care must be taken during placement of trocars to align their axes as needed for the procedure.(8)

In this present study maximum number of patients in the 31-35 year age group was 64 , followed by 26-30 year age group 24 , above 35 year 10 and 21-25 year 2. (Table 1)

In this present study patients underwent tubal ligation were highest around , then total laparoscopic hysterectomy, Diagnostic scopy, and cystectomy. (Table 2)

In this study time of Feasible of approach less than 30 sec 58 patients and 30-60 sec 40 patients and not able to enter in to abdominal cavity (failure) 2 patients. (Table 4).

In this study out of 100 patients 97 patients having healthy tissue, 01 patient having pus discharge and 02 patients having blood discharge. (Table 5) and patient satisfaction at 7 day were 97 % and at 14 day were 92 % (Table 6).

CONCLUSION:

This study demonstrated a technique which is one of the simple, safe, fast and easy approaches to enter the peritoneal cavity. The methods used in this study gives a quick entry in the abdominal cavity without injury. Only 6% cases had minor complications and there were no major complications or mortality.(16-20) It is easy to learn and safe to use. Therefore, this method can be one of the safe and easy techniques. This method simplifies and makes the procedures less tedious this technique.

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