

CHALLENGING SITUATIONS IN GYNAECOLOGICAL LAPAROSCOPY - CASE REPORT AND SHORT LITERATURE REVIEW

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Abstract: *Laparoscopy is a surgical procedure that can be chosen for benign gynaecological conditions. It is considered the gold standard diagnostic procedure for pelvic inflammatory disease. We report the case of a 20 years old woman who was admitted in our clinic for fever, vaginal discharge and lower abdominal pain. The established diagnosis was right hydrosalpinx. After antibiotic therapy she underwent laparoscopy. During the procedure, we observed adhesions that involved the small bowel, sigmoid, uterus, ovaries, large omentum and Fitz-Hugh-Curtis syndrome. Difficult dissection was performed due to the adhesion process extended from the umbilicus to the pelvic floor. Neosalpingostomy was performed for right hydrosalpinx. The outcome of the patient was favourable. The peculiarity of the case is the important adhesion process in a patient with no surgical history and pelvic inflammatory disease symptoms.*

Key words: *laparoscopy, hydrosalpinx, adhesions, neosalpingostomy, Fitz-Hugh-Curtis syndrome.*

1. Introduction

Laparoscopic surgery is defined as the surgical procedure performed through one or multiple small incisions through the abdominal wall [9]. The advantages are: quicker recovery, small scars, less bleeding, fewer complications, shorter intervention time and decreased adhesion formation [4]. Potential advantages of laparoscopy over laparotomy include shorter operative time (for some, but not all the procedures), smaller scars, faster recovery, decreased adhesion formation,

and decreased costs [2]. Laparoscopy has complications such as: pulmonary embolus, other unplanned surgery, transfusions [1].

A meta-analysis of 27 randomized trials that compared laparotomy to laparoscopy for benign gynaecological conditions exposed the lower risk for minor complications such as urinary tract infections or fever in women after laparoscopic interventions. Both groups had similar risk for major complications (pulmonary embolus, fistula formation or

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transfusion, and additional unplanned surgery) [5].

2. Case report

We present the case of a 20 years old Caucasian patient who was admitted in our clinic for lower acute abdominal pain. She had a body mass index of 25.6 kg/m^2 , she was not a smoker, she had no abortion, no pregnancy or surgical intervention in the past. In the last year, she reported lower abdominal pain. She was hospitalized three times in a surgical department prior to the gynaecologic consult. The symptoms were lower abdominal pain and fever. Each time she was diagnosed with inflammatory pelvic disease she received antibiotics, with a complete symptoms relief.

She was admitted in our clinic for fever (38.4 Celsius degrees), vaginal discharge and lower abdominal pain. The physical examination was suggestive for inflammatory pelvic disease. The lab test also revealed an acute inflammatory process (18,000 leucocytes/ μL , serum C-Reactive protein = 9.8 mg/dL).

Transvaginal ultrasound showed normal uterus volume and shape, a hypoechoic mass of 6/2 cm, tubular in shape, with two septations, in the right abdominal uterus fossa – suggestive for left hydrosalpinx. Both ovaries had normal aspect and free pelvic fluid was observed.

We performed laparoscopy using open Hasson access. The abdominal cavity inspection revealed important adhesion process of the small bowel, sigmoid, descendent colon, Fitz-Hugh-Curtis syndrome, deep pelvic adhesions, and right hydrosalpinx.

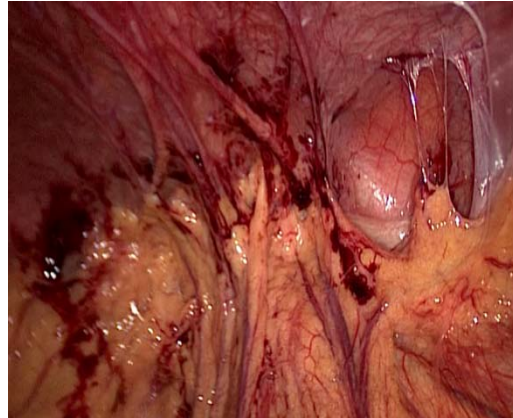


Fig. 1. *The laparoscopic approach (beginning of the intervention)*

The diagnosis was acute pelvic inflammatory disease.

The dissection was difficult (*Fig. 1 – 4*), and after a laborious dissection for the intestines, we performed laparotomy for safety reasons. Right neosalpingostomy was also performed.

The subsequent evolution was favourable, and the patient was discharged 4 days after the intervention.

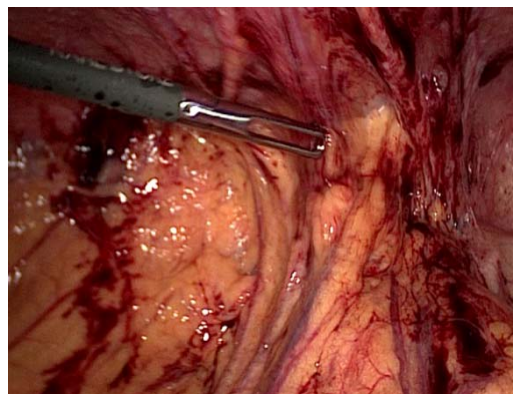


Fig. 2. *The laparoscopic approach (adhesion dissection)*

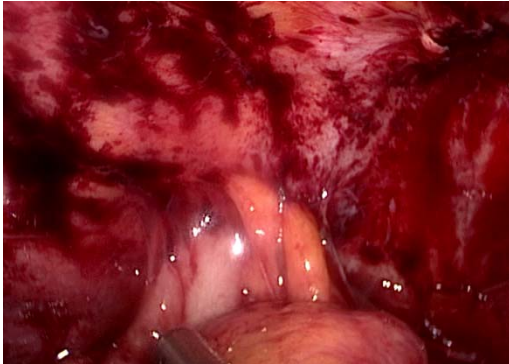


Fig. 3. *The laparoscopic approach (adhesion dissection)*

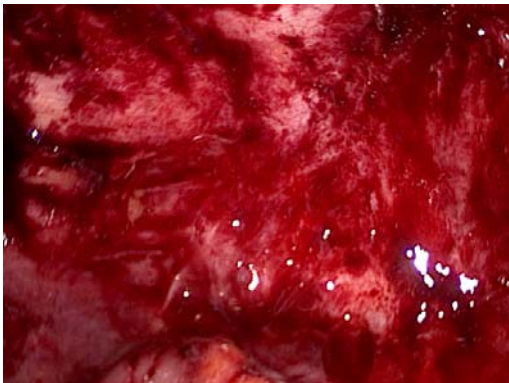


Fig. 4. *The laparoscopic approach (adhesion dissection)*

3. Discussions

Laparoscopy is considered as a revolutionary technique in gynaecological surgery, being safer and less invasive. In the beginning its use in gynaecology was restricted to the diagnosis of infertility and sterilization procedures. By the time, as the surgeons experience increased, laparoscopy became therapeutic in certain gynaecological situations. Recently, laparoscopy has become the most common procedure for benign conditions in the gynaecological field.

It is a major diagnostic and therapeutic procedure for infertility, endometriosis and benign ovarian tumours. For larger

interventions like hysterectomy, lymphadenectomy, and oncologic procedures, its use is also rapidly increasing [12].

The laparoscopy has also indications in pregnant women. Laparoscopic treatment for acute abdominal pain is the same in pregnant and non-pregnant patients. Haemodynamic instability represents a contraindication for laparoscopic approach. Laparotomy is preferred to laparoscopy in the presence of a large solid ovarian mass, or in case the patient has a history of multiple prior surgical interventions and/or a history of adhesive disease [8].

Laparoscopy is the gold standard in the diagnosis of inflammatory pelvic disease [14]. Our case-reported patient had a history of recurrent pelvic pain and an ultrasound image of left hydrosalpinx. The surgical intervention was mandatory in our patient's condition. Pelvic pain is the most frequent symptom related to an adnexal mass. Patients with symptoms suggestive of an adnexal mass should undergo pelvic imaging investigations to confirm the presence of a pelvic mass. Symptoms also suggest the aetiology and help to guide further evaluation or management. The correlation of a tubal mass with a history of pelvic inflammatory disease may suggest a hydrosalpinx [3].

In ultrasound examination hydrosalpinx is tubular in shape and may have septations or nodules in its wall [10]. The nodules appear because of thickened endosalpingeal folds and may raise concern for ovarian malignancy if one does not recognize the extraovarian location of the mass. The septations typically appear as incomplete and are not really, true septations, simulated by the folded wall of the tube. These incomplete or partial septations are suggestive for a hydrosalpinx, though can be also observed in other types of lesions. The waist sign, *i.e.* indentations along the opposite walls,

was found to be a useful feature in identifying a hydrosalpinx [7].

Laparoscopic access: gynaecologic laparoscopic entry is generally through the umbilicus. Initial entry can be performed through other sites on the abdominal wall, or through the vagina or uterus. It is important to consider alternative access sites when umbilical entry is risky.

The classical technique for laparoscopic approach in gynaecologic laparoscopy is to blindly pass a sharp Veress needle through the umbilicus, insufflate, and then passing a sharp trocar. In our case the laparoscopic access was an open access through Hasson technique.

In multi-port laparoscopic gynaecology, port placement involves a primary port through the umbilicus with two accessory ports in the bilateral lower quadrants. To avoid injury of nerves or blood vessels in the abdominal wall (ilioinguinal and iliohypogastric nerves, superficial and inferior epigastric arteries), the lower quadrant ports are placed approximately 2 cm superior and 2 cm medial to the anterior superior iliac spine, lateral to the border of the rectus [6].

A fourth port may be useful, particularly in cases involving extensive dissection or laparoscopic suturing, and can be placed suprapubically or in the lateral abdominal wall at the level of the umbilicus. In cases of enlarged uteri, when the fundus approaches the level of the umbilicus, it may be necessary to place the ports higher on the abdominal wall to ensure proper distance for visualization and instrument operation.

Certain factors increase the risk of complications when an umbilical access site is used. These include periumbilical adhesions, umbilical or ventral hernia, large pelvic mass, and pregnancy. In addition, umbilical entry may be dangerous, difficult or impossible in women who are obese, extremely thin,

highly muscular, or have extreme abdominal wall laxity.

Non-umbilical access (abdominal or non-abdominal) may be preferred under these circumstances, the choice of the proper site to use being discussed below.

Non-umbilical abdominal access sites can be used for initial entry and/or insufflation. Sites commonly used in gynaecologic laparoscopy include the left IXth intercostal space or the left costal margin at Palmer's point (3 cm below the left costal margin in the left mid-clavicular line), but other sites in the midline abdomen and hypogastric region can also be used. Anatomy and techniques to access these other sites are discussed in detail elsewhere. Non-abdominal access through the uterus or vagina has been reported, but is rarely used.

The pouch of Douglas or posterior cul-de-sac is posterior to the uterus and cervix. It has long been accessed through the posterior vaginal fornix for diagnostic purposes (culdocentesis) or for surgical access (colpotomy). Access through this site is also referred to as culdolaparoscopy.

Although rarely used in current practice, the posterior vaginal fornix is a useful site for laparoscopic entry. It has primarily been used for insufflation, but vaginal port placement was also reported [11]. Data regarding this approach belong to 1970s and 1980s, a time period when gynaecologists were more familiar to culdocentesis and to colpotomy for procedures other than vaginal hysterectomy [13]. Nevertheless, this is still a valid approach for a surgeon familiar to the use of this site. There is renewed interest in vaginal entry for non-gynaecologic procedures using a natural orifice transluminal endoscopic approach.

The posterior cul-de-sac is proximal to the uterine vessels, ureter, and rectum. However, the uterus may be adherent to the rectum if the patient has had prior

posterior fornix surgery or if fixed uterine retroversion is present. Thus, these represent relative contraindications for using the posterior vaginal fornix approach.

There are some challenging situations in laparoscopic gynaecology. Pelvic infiltrative endometriosis is an example. The adhesion syndrome is other particular situation. We would have expecting to find abdominal adhesions if the patient had endometriosis or previous surgical interventions in her medical history. In our case the patient had no suggestive clinical or imaging for endometriosis and no other abdominal intervention. The images from this intervention reveal the adhesions in the entire lower abdomen. The dissection was difficult and finally it imposed the laparotomy for safety reasons. In our case neosalpingostomy for right hydrosalpinx was performed. The evolution was favourable.

4. Conclusion

Pelvic inflammatory disease can be a challenging situation in laparoscopy because of the adhesion process. One may consider that this condition represents a simple intervention, but our case proved its complexity.

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