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Research Article

**GASTROINTESTINAL LARGE BOWEL INJURIES DURING
GYNECOLOGICAL LAPAROSCOPY.**¹Dr Jawaria Saeed,²Dr Mehreen Zahra,³Dr Zaib Nasir.¹MBBS,Fatima Jinnah Medical College,Lahore., ²MBBS,King Edward Medical University,Lahore., ³MBBS,Punjab Medical College,Faisalabad.**Article Received:** August 2019**Accepted:** September 2019**Published:** October 2019**Abstract:**

Laparoscopy is one of the most frequently preferred surgical options in gynecological surgery and has advantages over laparotomy, including smaller surgical scars, faster recovery, less pain and earlier return of bowel functions. Generally, it is also accepted as safe and effective and patients tolerate it well. However, it is still an intra-abdominal procedure and has the similar potential risks of laparotomy, including injury of a vital structure, bleeding and infection.

Apart from the wellknown risks of open surgery, laparoscopy also has its own unique risks related to abdominal access methods, pneumoperitoneum created to provide adequate operative space and the energy modalities used during the procedures. Bowel, bladder or major blood vessel injuries and passage of gas into the intravascular space may result from laparoscopic surgical technique. In addition, the risks of aspiration, respiratory dysfunction and cardiovascular dysfunction increase during laparoscopy.

Large bowel injuries during laparoscopy are serious complications because 50% of bowel injuries and 60% of visceral injuries are undiagnosed at the time of primary surgery. A missed or delayed diagnosis increases the risk of bowel perforation and consequently sepsis and even death.

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INTRODUCTION:

Decades ago, most of the procedures were limited to diagnostic laparoscopy and tubal sterilization and laparoscopic surgery was being performed by a very less number of surgeons. However with the passage of time, laparoscopy has developed more and become one of the crucial management choices for many surgical diseases [1].

Cameras and hand instruments with improved visual quality and better manipulation capabilities, respectively, along with the accumulation of the data obtained from previous studies and case reports have contributed to the evolution of laparoscopy. Now days laparoscopy is one of the most habitually used surgical option in gynecological surgery [2].

In the United States, roughly 350000 bilateral tubal sterilizations and 200000 hysterectomies are performed using laparoscopy each year. The popularity of laparoscopy has increased around the world and many gynecologists, including inexperienced and junior surgeons in training, have begun to perform laparoscopic procedures. Thus, the number of patients prone to complications during laparoscopy has increased[3]. Laparoscopy has been preferred over laparotomy due to many reasons such as small surgical scars, minimum pain, and fast recovery of bowel functions. Overall its very safe and effective and patients indulge well [4]. However, it is an intra-abdominal procedure which might have some possible risks of laparotomy which includes injury of essential structure, bleeding and infection [5]. 4 to 8 patients are lost per 100000 laparoscopic procedures and intra and postoperative complications are below 1%. Apart from all known risks for open surgery, laparoscopy has also its distinctive risks connected to abdominal access procedures, pneumoperitoneum created to provide sufficient operative space and the energy modalities used during this technique. Many of risks such as bowel, bladder or major blood vessel injuries and passage of gas into the intravascular space may result from laparoscopic surgical technique. In addition, the risks of aspiration, respiratory dysfunction and cardiovascular dysfunction increase during laparoscopy [6, 7].

Blood loss is generally lower than in open surgery; however, in some cases, massive blood loss necessitates immediate laparotomy. Because of its advantages over laparotomy, such as less pain, hospital stay and recovery time, laparoscopy is generally perceived as a minor surgical procedure by patients. Thus, the medico legal aspects of the complications of laparoscopy are prone to

exaggeration. To reduce the complications and inevitable significance, the surgeons must have the management

CLASSIFICATION, EPIDEMIOLOGY AND RISK FACTORS:

Laparoscopic surgery related complications can occur during intra or post-operative surgery phase. Intraoperative complications can further be divided into complications of access and complications of the operative procedure. More than half of complications occur at the setting up phase, particularly during the creation of the abdominal access pathways necessary for the telescope and trocars [8]. The complication rate during the placement of the initial abdominal access port is less than 1%. Complications following the initial access are also rare. 6% of patients have reported port site hernia as a complication [9] Although rare, severe complications including vascular and bowel injuries, may cause serious morbidity and even result in the death of the patient.

Death can also result in case of severe complication which include vascular and bowel injuries. Delay in the diagnosis of gastrointestinal perforation resulted in a mortality rate of 21%.

During the operative phase of laparoscopy one of the most common injury which is bowel injury may occur as a result of trauma. Bowl injury can occur as a result of trauma during the operative phase of laparoscopy secondary to tissue dissection and manipulation.

Serious complication occurs because 50-60% of bowel or visceral injuries are not properly diagnosed at the time of surgery. A missed or delayed diagnosis increases the risk of bowel perforation and consequently sepsis, and even death [10]. In the study conducted by Chapron et al, of the 56 patients suffering from gastrointestinal injury, 32 had injuries at the operative phase of the procedures and 26 injuries were due to sharp dissections [11]. Therefore experienced surgeons with preliminary skills are supposed to have less complication rate Not surprisingly, experience significantly decreases the complication rates of the operative phase and the surgeon's advanced skills in fine adhesiolysis also decreases the complication rates [12]. An author has compared the prevalence of injuries of laparoscopy performed between 1992 and 1999 with the injury incidence of 2000 and 2005, highlighting the importance of the learning curve in laparoscopic and vaginal hysterectomies. The occurrence of all kinds of injuries was significantly lower between 2000 and 2005. Likewise, bowel injuries during laparoscopic

hysterectomies decreased from 0.14% to 0.09% during the same period and large bowel injuries involved half of all bowel injuries [13,14]. The use of proper hand instruments while manipulating and dissecting the tissues may decrease the injury rates. The use of electrosurgical energy during operative laparoscopy causes injury of the target tissue. During the postoperative period the injured tissue may become necrotic or heal slowly [15].

Thus, in a case where the operative field is close to the bowel, the risk of bowel injury increases and the unnoticed injury may present postoperatively.

PREVENTION, DIAGNOSIS AND MANAGEMENT:

Most gynecologists learn traditional gynecological procedures during residency; however, they generally gain skills required for laparoscopic procedures during their postgraduate clinical practice without supervision. The learning curve is lengthy and becomes longer with the advancement of new techniques and instruments [16]. A comprehensive preoperative evaluation, proper consultations, patient selection and risk assessment help lessen the risk of complications. The operating room should be ready for an emergency laparotomy. During the laparoscopic procedures the substructure required for a multidisciplinary surgical approach should be maintained. During the earlier stages of the experience of laparoscopy, it is better for a surgeon to execute minor procedures. Literature has reported that the complication rates were higher in the first 100 procedures of surgeons beginning to perform laparoscopy. Sudden and uncontrolled Veress needle and trocar entry can lacerate the rectum and sigmoid colon [17]. A nasogastric tube helps to eliminate this potential risk. Obliteration of the pouch of Douglas and the presence of dense adhesions between the rectum and uterus increase the chance of bowel injury. In such situations, dull dissection may rise the chance of rectal laceration and thus sharp dissection with scissors or CO2 laser should be favored. In addition, preoperative bowel preparation may help in cases with high risks for bowel injury. One to two thirds of bowel injuries can be detected intraoperatively [5] and half of the injuries can be identified between first and seventh postoperative days. Most patients do not have the typical symptoms of bowel injury, such as low-grade fever, nausea, vomiting, ileus, severe abdominal pain, leucopenia or a normal leukocyte count, and the diagnosis is delayed. Thus, in many cases, patients present with peritonitis and the situation increases the rates of morbidity and mortality [18, 19]. Usually after 1-2 days of surgery any sepsis or acute abdominal pain

are observed.

In a saline aspiration test brownish fluid may sometimes diagnose large bowel perforation. In addition, fecal smell strengthens the suspicion. Whenever the of bowel intuition perforation arises, the Veress needle should be replaced with a sterile one and the field beneath the primary entrance should be examined after the introduction of the telescope [20]. Recently, in an experimental study conducted by Ülker et al, insertion of a rectal catheter attached to a urine bag was recommended to identify large bowel injuries.

In the connected bag any indication of gas accumulation would be a sign of small and hardly verified large bowel injuries. CT examination can disclose fecal material outside the large bowel and/or free air in the abdominal viscera. To detect exact injury site additional imaging would help. Large bowel injuries should be managed at the time when they are recognized, if possible, at the same operative section. Minor injuries secondary to a Veress needle may be managed conservatively with close observation in hospital, intravenous hyperalimentation and antibiotics [21].

In these conditions, incorporation of a general surgeon experienced with bowel surgery is advisable. Depending on the skills of the surgical team, bowel repair may be performed laparoscopically [22].

To minimize the risk of infection there must be extensive intra-abdominal lavage, use of combined broad-spectrum antibiotics and proper drainage. At the right ascending colon generally requires resection of the injured section and a primary anastomosis. Ileostomy with diversion of the intestinal contents speeds up healing.

If there is a such case where the bowel is not prepared preoperatively and the descending colon, sigmoid or rectum is injured, primary closure or resection with primary anastomosis are not good treatment options. In these circumstances, a diverting colostomy with resection of the injured portion is recommended [23].

CONCLUSION:

During gynecological laparoscopy large bowel injuries are rare but serious complications. Approximately one third can be diagnosed intraoperatively and delayed diagnosis increases the rates of morbidity and mortality. They should be managed immediately when recognized, if possible, at the same operative section.

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