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CASE REPORT

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Laparoscopic gastroscopy : an avoidable blunder we committed

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Case report

Mrs. KR a 51 year old multigravida, a lean and thin female, presented with the complaint of post-menopausal bleeding for the last 2 months. Cervical biopsy indicated squamous metaplasia. She was posted for LAVH. Pre-operative ultrasound scan indicated a normal sized uterus. There was no history of previous abdominal surgery.

Under spinal anesthesia with injection sensorcaine-heavy, she was put in frog-leg position. Trendelenburg's position was given to displace the small bowel away from the pelvis. A small infra-umbilical nick was given and Veress needle was inserted pointing inferiorly. The needle was aspirated with a syringe to rule out intravascular placement and then saline was instilled to confirm intraperitoneal placement of the needle. Following all other standard precautions, insufflation of CO_2 was begun until an intraperitoneal pressure of 13 mmHg was attained. The initial and subsequent pressure readings on the insufflator (Karl Storz, Germany), indicated normal readings for the corresponding situations. The patient did not complain of right shoulder pain, which was not considered unusual since a vast number of patients never complain of this pain even with the correct placement of the needle. There was gradual fullness of the abdomen. This fullness extended well beyond the umbilicus. However, the fullness of the abdomen was more localized to the left side than to the right. This observation was disregarded because it was thought to be due to some intraperitoneal adhesions. After a pressure gradient of 13 mm was achieved, the needle was removed and replaced with a 10 mm trocar through which the videolaparoscope was inserted. The entry of the trocar also appeared to be smooth. Introduction of the telescope presented an unusual picture. There was no bleeding and no loops of gut that a surgeon normally expects but only a smooth distended cavity with a little clear fluid in it. The folds of the pylorus made the authors suspect that the telescope was inside the stomach. The telescope along with trocar was gradually withdrawn out of that cavity and slowly it became evident that both these instruments came out of a small rent in the anterior wall of the stomach. No separate rent for the Veress needle could be identified. Fortunately we were able to carry out the LAVH successfully with two more 5 mm ports placed one in the left iliac fossa and the other in the supra-pubic region. This was followed by repair of the anterior gastric wall through a vertical 5 cm incision in the epigastrium. Off the three ports, only sub-umbilical 10 mm port was sutured with a single stitch. A Ryle's tube was inserted and she was given standard post-operative care for bowel repair surgery. Her bowel function returned within 24 hours after which the Ryle's tube was removed and she was allowed liquids after another 24 hours. Her post-operative stay was uneventful.

Discussion

Establishing the pneumoperitoneum is believed to be the most dangerous step. Bowel injuries do occur. They are thankfully rare but are at the top of the list in terms of seriousness. Of intestinal injuries, the most common ones occur in the small bowel, followed by large bowel and rarely the stomach. These may be caused by electro-coagulation or by scissors or may be entry-related. Some can be avoided by good technic. Inadvertent injuries of the intra-abdominal organs and vessels caused by trocars and Veress needles are rare but serious complications of laparoscopic surgery. Four options exist for

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initial entry into the peritoneum –Veress needle, cut down and a Hasson trocar, direct insertion of a trocar, and the use of an optical trocar. We use the Veress needle. The veress needle has a hollow center and a blunt tip controlled by a spring-loaded mechanism to protect the intestine.

Many surgeons are shifting to performing a mini infraumbilical cut down to insert a Hasson trocar under direct visualization. Certainly this is the preferred method in patients with previous abdominal surgery. The additional time spent is compensated by rapid abdominal insufflation and rapid fascial closure. An optical trocar allows the surgeon to continually visualize the layers as the trocar dissects in a controlled fashion through the abdominal wall. Direct insertion of a trocar armed with blade is the least controlled entry method.

Clinically significant gastric or intestinal injury from needle or trocar insertion has been reported in approximately 0.01 to 0.4% of patients [1-2]. The overall incidence of visceral injury in several large series ranges from 0.05 to 0.2% [1].

A larger number of these injuries may, however, go unrecognized because of the ability of the stomach and intestines to heal small injuries. Undetected bowel injury is a major contributor to postoperative mortality. Such patients present with sepsis or peritonitis. Intra-abdominal abscess or a fistula may occur at a later date. In a survey of over 75,000 laparoscopic surgeries, 4.6% of patients with gastrointestinal injuries died [3].

A significant proportion of bowel injuries may result from initially recognized thermal burns from electrocautery devices. However, when an injury presents late, it is often difficult to determine the exact cause. Management of an intestinal injury depends on the etiology and severity. Thermal injuries from laser or electrocautery devices are generally more severe than they appear, and surrounding areas of the intestine may necrose after several days as a result of intramural spread of energy at the time of the injury. For this reason, resection of the involved area should be undertaken [2]. Mechanical injury from a needle, trocar, or other instrument can be managed by simple observation, primary repair, or resection. Repair or resection can be performed either laparoscopically or by laparotomy, depending on the level of experience of the surgeon.

Trocar and needle injuries are rare complications of laproscopy. However, if not recognized intra-operatively and repaired immediately, they induce increased morbidity and mortality. Both open and closed establishment of the pneumoperitoneum are related to a potential danger of perforating lesions, but inserting the first trocar under direct vision allows early recognition and immediate repair. A careful observation of unequal distention of the abdomen following Veress needle insertion and insufflation may enable the surgeon to diagnose stomach injury at the stage of injury by the needle only. If such an injury is suspected, the Veress needle should be kept in situ, its valve kept open till all the gas escapes out and abdomen is flattened again. Only then, re-insertion of the needle should be attempted. If such an injury is not compounded by introduction of trocar, as was done in the present case, nothing (except insertion of a Ryle's tube) needs to be done because needle tip injury of the stomach does not require any specific treatment, as the stomach has a remarkable capacity to heal itself.

We were not very sure that the scope was in the stomach until it was removed form the stomach. It we were sure we should have deflated the stomach before withdrawing the scope out from it. Lastly, the stomach injury should ideally have been repaired laparoscopically avoiding the laparotomy. But since we lacked the expertise and experience needed for this, we resorted to laparotomy.

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