



INCISIONAL HERNIA THROUGH A 5 MM LATERAL PORT SITE FOLLOWING LAPAROSCOPIC CHOLECYSTECTOMY

General Surgery

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ABSTRACT

Less than 10 mm port-site hernia is a rare complication after laparoscopic surgery. We report a case of uncomplicated herniation through the 5-mm lateral trocar port site.

KEYWORDS

Incisional Hernia, Port Site, Laparoscopic Cholecystectomy

Laparoscopic surgery has quickly developed, becoming in some cases the gold standard procedure as the preferred mode of access to the peritoneal cavity.[1] Despite the minimal invasiveness, some laparoscopic procedures-related complications can be directly attributed to abdominal access with laparoscopic trocars. The postoperative port-site hernia formation, which is defined as the development of a hernia at the cannula insertion site, is one of them.[2] The trocar site hernia is a rare but potentially dangerous complication of laparoscopic surgery ranging from early small Omental herniation's to delayed hernia formation with or without bowel entrapment.[1,2] The prevalence of herniation followed by laparoscopic surgery is reported to be 0.0002%–6%.[2–7] In contrast, the true prevalence of such complications may be higher because some patients have no symptoms and do not return to the surgeon for follow-up.[5]

Almost all trocar site hernias have been found in sites greater than or equal to 10 mm with only few cases reported of 5 mm site herniation.[6–8]. We report a case of the patient who developed late uncomplicated incisional hernia at the lateral 5 mm trocar insertion site that was produced during the elective laparoscopic treatment of symptomatic cholelithiasis.

Case Report:

A 60-year-old male patient was admitted to our hospital due to intermittent upper abdominal pain, nausea, vomiting. It was known that the patient had undergone an elective laparoscopic cholecystectomy 6 months ago but due to dense adhesions, inflamed gall bladder on diagnostic laparoscopy, procedure was abandoned. The major symptoms were revealed on examination: pain right upper abdomen, and nausea. All haematological and biochemical parameters were within normal limits. Ultrasound revealed cholelithiasis and bilateral renal concretions.

After that patient was taken for laparoscopic cholecystectomy intra-operatively it was visualised that there was herniation of part of greater omentum through previous laparoscopic right subcostal 5mm port insertion site through fascial-muscular defect. Part of Omentum was resected. The fascial-muscular defect was closed with interrupted Vicryl 2-0 sutures. The patient recovered well after the procedure.



DISCUSSION:

Following issues regarding this case can be disputable: first, what is the place of 5 mm port site hernia within suggested classifications regarding post-trocar hernia; second, what might be factors which had causal relationship to the development of the port-site hernia; third, what might be additional options for diagnostics and best management of this disease; lastly, whether the 5 mm port-site hernia is preventable or not.

The classification of trocar port-site hernias was suggested in 2004.[7] they were classified into three types. The early onset trocar port hernia type was defined as having dehiscence of fascia and peritoneum within 2 weeks, most commonly with small bowel obstruction. When hernia occurs after 2 weeks and has dehiscence of fascial plane with a sac consisting of peritoneum, it is classified as a late onset type port-site hernia. Only a small part of late onset hernias present with intestinal obstruction. The third category includes special types of hernia which have dehiscence of the whole abdominal wall.[2,7,9] We would refer the case to the category of late onset type trocar 5 mm port-site hernia with the late progressive dehiscence of peritoneum, muscular and fascial planes resulting herniation of omentum.

Many factors causing intra-abdominal hernias after laparoscopic surgery have been emphasized. Such as the number of trocars used and their diameters, the duration of the procedure (the longer it takes, the higher risk is), the aponeurotic defects in trocar place (incomplete closure of fascia), the insertion technique, the method of withdrawing the trocar, midline trocars, stretching the port site for organ retrieval, the effect of a partial vacuum while port withdrawal, obesity, poor nutrition, and operation site infection.[1,2,4,7–9]

Laparoscopic procedures that require multiple trocars are associated with a higher frequency of hernias. It is known that using 10 mm and larger trocars results in increased risk of hernias.[1] Trocar made aponeurotic defects smaller than 10 mm, like in our case, rarely can cause herniation. In an experimental study of wounds relative to the type of trocar, it was found that a non-bladed trocar created smaller peritoneal port site wounds than a conventional pyramidal tip.[9] Some authors have also reported a lower prevalence of hernias with the use of a Para median incision and non-bladed trocars which have a conical tip.[2]

A careful protocolling of every surgical step which includes formation even 5 mm trocar port site and, later, possible manipulations through this port should be a concern of great importance. Unknown risk factors could be involved in a process of herniation through 5 mm size trocar port in our patient.

Clinical courses of port-site hernia are varied and depend on the cause of intestinal obstruction, degree of intestinal entry to the abdominal wall defect and some constitutional features such as a presence of obesity. In our view, the key point at this stage of discussion is the following: even such rare entity as postoperative hernia at the previous site of introduction of the smallest laparoscopic trocar in most lateral side of the abdomen can be responsible for acute intestinal obstruction and, therefore, must be kept in mind during diagnostic differentiation because time of surgery is a most crucial thing in the management of incarcerated hernias.

Finally, there are some measures suggested to prevent trocar port-site hernia.[7,10–12] To the best of our knowledge they are as follows: the use, whenever it possible, of trocars of smaller diameter, avoiding extreme manipulation of trocars, introducing trocars with a Z-incision technique, closing fascial defect, direct vision deflation air and removing of trocars. Many authors have recommended the deflation of pneumo-peritoneum prior to port removal so that omentum and intestines would not be drawn into the fascial defect.[1,7,13] The trocar must be removed under direct visualization, and the wound should be digitally explored, assuring that no bowel has been entrapped. Adequate closure of the fascia for wounds larger than 10 mm is necessary. In general, the closure of the fascia in a wound of 10 mm or smaller is questioned.[12] However, some surgeons recommend closing 5 mm port in patients who are older than 60 years of age with a BMI above 25, whose laparoscopic surgery duration is longer than 90 min and after extensive trocar manipulation.[5] The peritoneum should be incorporated into the fascial closure to obliterate the preperitoneal space, thereby preventing herniation. Some authors mentioned that closure should be done under direct vision, and it should incorporate all layers of the abdominal wall to eliminate the peritoneal defect.[12] Some surgeons recommended the use of a fascial closure device, a spinal cord needle, a suture carrier, a 2-mm trocar, an Endoclose suture device, or a Deschamps needle to close the fascia and the peritoneum together.[10,12] All that means that surgeon performing laparoscopic operation must follow recommendations mentioned. If not, every specific step of surgery should be protocolized and justified in order to give a suitable chance for correct and prompt clinical audit and review.

CONCLUSIONS:

Herniation through a 5 mm size most lateral trocar port site is a very rare complication of laparoscopic surgery. It should always be included in the differential diagnosis of bowel obstruction when a patient has undergone any laparoscopic procedure. Additional steps for clarifying risk factors for this type and site trocar port-site hernia should be undertaken.

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