

Case Report

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Laparoscopic reconstruction of traumatic lumbar hernia: A case report

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Abstract:

The traumatic lumbar hernia is an uncommon condition after blunt trauma. There are reported <100 cases in the English literature. Although open repair of traumatic lumbar hernia is a standard treatment, there is a possibility to use minimally invasive techniques in the laparoscopic era. We report the case of a 36-year-old male patient with a history of a blunt abdominal trauma. Seven months later, the patient was complaining of the enlarging mass and a chronic pain in a right lumbar area. A computed tomography scan revealed the traumatic lumbar hernia, with the hepatic flexure of the colon and a greater omentum inside the hernia sac. A laparoscopic intraperitoneal onlay method was chosen and the reconstruction with mesh was performed. The postoperative period was uneventful. The patient was discharged on the 3rd-day postoperatively. The laparoscopic approach can be safe and feasible for treating the traumatic lumbar hernia.

Keywords:

Laparoscopy, mesh, traumatic lumbar hernia

Introduction

Traumatic lumbar hernia is a rare clinical case with the pathology being a defect in the posterolateral wall that is congenital or acquired.^[1] The majority of lumbar hernias are acquired (80%) and can be either primary or secondary (incisional/traumatic). Traumatic lumbar hernias are only a minority of cases of acquired lumbar hernias. Surgical repair is often difficult with no consensus on the timing to repair or surgical approach because of the anatomy and associated injuries.^[2] There are reported <100 cases in the English literature.^[3] These defects may not be recognized initially or may appear in the delayed fashion. Due to the rarity of this type of hernia, this case report presents the delayed laparoscopic management of traumatic lumbar hernia.

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Case Report

A 36-year-old male was involved in motorcycle-car accident. Initially, after the accident, the patient was complaining abdominal and chest wall pain with subsequent inability to urinate. The patient was hemodynamically stable on arrival to emergency room. However, the physical examination revealed generalized tenderness to the right ribs and pain on the right side of the abdomen. Gross hematuria was noted on the insertion of a urinary catheter. Subsequent computed tomography scans identified multiple right side rib fractures with hemopneumothorax, Grade III liver injury (American Association for the Surgery of Trauma Scale) and Grade III right kidney injury, multiple fractures of process transverse of vertebrae, and large hematoma of the right lumbar area. No other internal injuries were identified. Urgent drainage of the right pleural cavity and stenting of the right kidney were performed. Liver injury was managed

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conservatively. No urgent abdominal operation was required.

Seven months later, the patient was complaining of the enlarging mass and a chronic pain in the right lumbar area [Figure 1]. After a detailed clinical examination, a computed tomography scan revealed the traumatic lumbar hernia with the hepatic flexure of the colon and a greater omentum inside the hernia sac [Figure 2]. The laparoscopic surgical, intraperitoneal onlay mesh, repair technique was suggested to the patient after the multidisciplinary team discussion because these types of hernias are extremely rare and our center has a lack of experience in other approaches. The patient gave the informed consent for this surgical approach.

Under the general anesthesia, the patient was placed on the left side on the surgical table in approximately 20° angle. A small incision above the umbilicus was performed. A Veress needle was inserted in the abdominal cavity and 12 mmHg pneumoperitoneum was created by blowing carbon dioxide gas. A 10 mm-diameter trocar was inserted for video camera in the abdominal cavity. The abdominal cavity was explored and the right lumbar hernia with the omentum and the hepatic flexure of the colon inside the hernia sac was identified. The three other 5 mm-diameter trocars were inserted under camera view: the first 2 cm below right costal arch by rectus abdominis muscle medial side, the second in the middle line between two mentioned trocars, and the third one in the right abdominal side 5–6 cm below the umbilicus by rectus abdominis muscle lateral side.

Abdominal adhesions between the greater omentum and front abdominal wall also with hernia sac were observed which were dissected by ultrasound scalpel. The right flexure of the colon was mobilized and extracted from the hernia sac. The margins of the hernia defect were marked on the skin. The size of hernia sac was about 10 cm × 15 cm. We did not close the defect because it was considered as a technically challenging because of large diameter and a costal margin on a side of a defect. Therefore, an expanded-polytetrafluoroethylene mesh 20 cm × 25 cm was chosen. Three polypropylene sutures were performed to fixate the edges of the mesh. After that, the mesh was inserted to the abdominal cavity through the 10 mm-diameter trocar. The mesh was positioned to close the hernia ring for 5 cm to the sides. Further, the mesh was fixated with tackers, and three polypropylene sutures were extracted with Bercy needle and fixated in the subcutaneous layer (extra three small incisions were performed). The carbon dioxide gas was released, and trocars were

removed. The incisions were sutured with individual skin sutures [Figure 3].

The laparoscopic procedure was undertaken successfully. The total operative time was 225 min. There were no intraoperative or postoperative complications recorded. The patient was discharged on the 3rd day postoperatively and returned to full activity and full-time work without restrictions after 4 weeks. There was no evidence of hernia recurrence at 12 months follow-up period [Figure 4].



Figure 1: Abdominal mass after the blunt abdominal trauma



Figure 2: Computed tomography revealed traumatic lumbar hernia

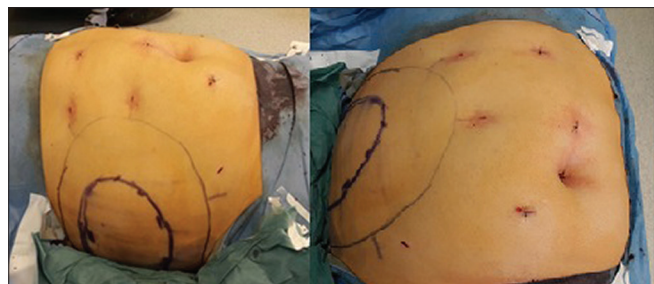


Figure 3: The marked hernia defect and mesh overlapping

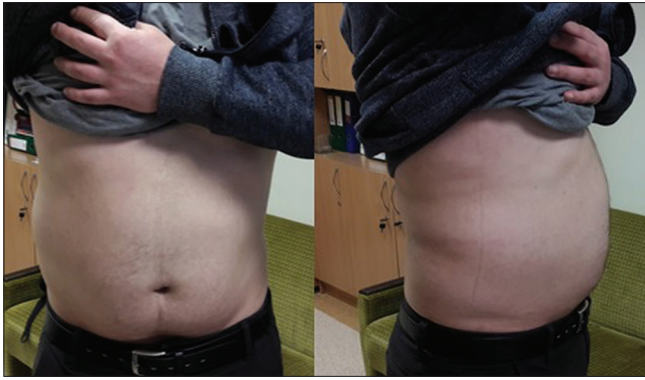


Figure 4: Cosmetic effect 1 year after the operation

Discussion

Traumatic lumbar hernia is an uncommon injury after the blunt trauma. The majority of these types of hernias are due to motor-car accidents, where combination of increased intra-abdominal pressure and lateral shearing forces is main mechanistic actions.^[3,4] Computed tomography scan with oral and intravenous contrast is a golden standard to establish the hernia defect with the abdominal organs inside.^[5] Immediate and delayed repair of these defects has been described in the literature.^[1,2] Benefits in minimally invasive surgery have brought new options to the management of this uncommon problem. Repairs of traumatic lumbar hernias using tension-free techniques and hernioplasty with meshes have been described and can be performed safely.^[6,7] Traumatic lumbar hernias can be managed according to the International Endohernia Society guidelines published in 2014.^[8] Therefore, there was presented a successful laparoscopic management for treating

traumatic lumbar hernias.^[1,9] Our experience revealed that delayed elective traumatic lumbar hernia repair might be performed laparoscopically with good early and late outcomes.

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Conflicts of interest

There are no conflicts of interest.

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