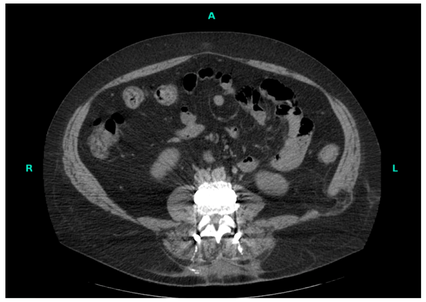
Robotic assisted transabdominal pre-peritoneal repair of an incisional lumbar hernia with mesh: a case report.

Wei Liu, MD[1], Karina Lo, MD[2], David Blitzer, MD[3], Christopher You, MD[4].

[1] Department of Surgery, MedStar Health Baltimore, Baltimore, Maryland. [2] Department of Surgery, Baystate Medical Center. Springfield, Massachusetts. [3] Department of Vascular Surgery, University of Maryland, Baltimore Maryland. [4]Department of Surgery, MedStar Franklin Square Medical Center, Baltimore, Maryland.

Introduction

Lumbar hernias are the protrusion of intra-abdominal contents through the posterolateral abdominal wall. It is quite rare and there are only approximately 300 reported cases in the literature. In the adult population, the majority are primary lumbar hernias associated with conditions that cause an increase in intra-abdominal pressure. The rest is composed of secondary lumbar hernias associated with trauma and previous retroperitoneal operations, known as lumbar incisional hernias. The main approaches to lumbar hernias include open tension free repair with mesh and minimally invasive approaches. Despite limited date, many studies have shown better outcomes including shorter length of stay, fewer wound complications and less postoperative pain in patients who undergo laparoscopic repair compared to open repair. However, there are no studies on outcomes for robotic assisted repair, despite its superior technical adaptability and visualization. Here, we present a successful case of robotic assisted transabdominal pre-peritoneal repair of a lumbar incisional hernia with mesh.



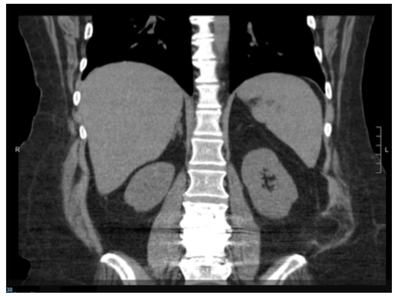


Figure 1 & 2: Axial and coronal view of left lumbar incisional hernia on CT scan.

Presentation of case

The patient is a 49-year-old female with pertinent past surgical history of an L3-L4 interbody fusion via left lateral approach. Patient developed a left lumbar incisional hernia 2 months postoperatively (figure 1& 2) and presented with consistent discomfort with the hernia. Therefore she was offered a robotic-assisted lumbar incisional hernia repair with mesh.

Patient was placed in right lateral decubitus position with the operating bed flexed, exposing the left flank region. Three 8mm Da Vinci trocars were placed along the left midclavicular line 8cm apart and 20cm medial to the hernia defect, and the Da Vinci XI robot was docked into position.

Upon entry, a pre-peritoneal plane was created medial to the hernia defect, but no hernia sac was seen. There was herniated fat through the defect. Once the fat was dissected and reduced, another 5cm defect through the transversus abdominis and internal oblique muscle was seen. Both defects were then closed primarily with V-lock running sutures and a 10cmx15cm polypropylene mesh was placed into the pre-peritoneal plane and secured to the transversus abdominis with running sutures. The pre-peritoneal flap was closed with V-lock running suture. Patient recovered unremarkably and was discharged home the same day.

Background

Lumbar hernias are located within Grynfelt's and Petit's triangle. The triangles are bounded by the 12th rib superiorly, erector spinae muscles medially, iliac crest inferiorly and external oblique muscles laterally, with Grynfelt's located more superior than Petit's triangle.

Discussion

Incisional lumbar hernias are rare but associated with 25% and 8% risk of developing incarceration and strangulation respectively and therefore timely surgical management is indicated. However, due to the lack of adequate amount of fascia and complex anatomy surrounding the defect, surgical repair is difficult.

In addition, it is challenging for surgeons to make a definitive operative plan. Some studies advocate for open repair for defects smaller than 2.5cm and minimally invasive approach for larger defects. Other studies advocate for open approach for defects larger than 15cm for proper management of skin and soft tissue. The only consensus on robotic assisted approach is that it is reserved for patients at higher risks for wound infections including obesity, active smoking and poorly controlled diabetes.

Conclusion

Robotic-assisted repair of lumbar hernia is safe and feasible, but more studies need to be conducted to shine guidance on the choice of approach pertained to individual situations.