

Inguinal Hernia Preperitoneal Mesh and Internal Hernia with Caecal Volvulus

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Abstract : We report a case of a caecal volvulus in a 52-year-old female who had an internal hernia from adhesions originating at the region of a previous inguinal hernia mesh repair. The patient described epigastric and right lower quadrant pain for the preceding two weeks that seemed to worsen with oral intake. She had previous laparoscopic preperitoneal hernia repairs with mesh bilaterally; the left in 2007 and the right in 2012. Further surgical history included an open Spigelian hernia repair with mesh in the left lower quadrant and a laparoscopic cholecystectomy 20 years earlier. In addition to this, she had had a colonoscopy done three months prior, which showed no masses or polyps. The patient was hemodynamically stable on review with a soft abdomen. The right lower quadrant was exquisitely tender with a rebound. There were no palpable masses. Blood tests revealed hemoglobin of 155 g/L, a white cell count of $8 \times 10^9/L$, and a C-reactive protein of 37 mg/L. A computed tomography scan with portal venous contrast demonstrated a mechanical small bowel obstruction with the terminal ileum and caecum looped around itself in a whirlpool appearance, and the colon collapsed distally. There was a trace of free fluid in the right paracolic gutter and no abdominal free air. Hernia meshes were visible in the inguinal orifices bilaterally and at the left lower quadrant. The mesh on the right inguinal canal appeared to be displaced intraperitoneally. The patient then underwent emergency diagnostic laparoscopy. Intraoperatively, there was a caecal volvulus caused by internal herniation underneath a thick band adhesion at the right iliac fossa. This band appeared to arise from the anterior abdominal wall just posterior to the right inguinal hernia preperitoneal mesh. There was no mesh or tacks exposed and there was no recurrent hernia. A right hemicolectomy was performed with a stapled side-to-side anastomosis. The postoperative course was uncomplicated, and she was discharged on day 6. At follow-up two weeks later, the patient was well and bowel function had returned to normal. Histopathology was negative for dysplasia or malignancy. Inguinal preperitoneal mesh has not been definitively linked to intraabdominal adhesion formation. There has been a study in 2016 that examined the formation of adhesions after ventral hernia repair as detected by MRI and laparoscopic correlation. However, this included intraperitoneal mesh, and the results were not stratified by mesh location. There was an overall 60% rate of adhesions after ventral hernia mesh. There has also been one case report in the literature that describes an adhesional small bowel obstruction that was attributed to a tack that had been placed during a laparoscopic inguinal hernia repair. In our case report, there was clearly a band adhesion from the preperitoneal mesh that had led to an internal hernia and caecal volvulus; however, whether the mesh had initiated the adhesion is uncertain. While inguinal hernia repair with mesh remains the gold standard, the formation of intra-abdominal adhesions may need to be a consideration in fixation techniques.

Keywords : internal hernia, inguinal hernia mesh, caecal volvulus, adhesion

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