Laparoscopic Excision of an Omental Leiomyoma with a Giant Cystic Component

Deepraj Bhandarkar, MS, FRCS, Ashish Ghuge, MBBS, Gaurav Kadakia, DNB, Rasik Shah, MS, MCH, MD

ABSTRACT

Primary tumors of the omentum are uncommon, and leiomyomas arising in the omentum are exceedingly rare. We report on a patient who presented with a large abdominal cyst presumed to be an omental cyst. At laparoscopy, after aspiration, the cyst was found to be attached to a solid mass arising from the greater omentum. The entire tumor was successfully excised laparoscopically. Histopathology and immunohistochemistry revealed it to be an omental leiomyoma with a large degenerative cystic component. Treatment by a minimal access approach allowed the patient to recover rapidly with a short convalescence. Our case confirms the feasibility and safety of a minimal access surgical approach to a rare pathological entity.

Key Words: Laparoscopy, Omental neoplasm, Leiomyoma, Cyst.

INTRODUCTION

Omentum is a common site for secondary tumors, but primary omental tumors are unusual. Leiomyoma of the omentum is a rare pathological entity, and only a handful of cases have been reported. We report, to the best of our knowledge for the first time in the surgical literature, a case of an omental leiomyoma with a giant cystic component successfully resected by laparoscopic surgery.

CASE REPORT

A 32-year-old man presented with progressive abdominal distention of 6-months duration. He complained of some loss of appetite but had no gastrointestinal or urinary symptoms. On examination, he had a massively distended abdomen dull on palpation in the center and tympanic at the periphery. A provisional diagnosis of a mesenteric or omental cyst was entertained. All hematological and biochemical investigations were normal. Computerized tomography (CT) showed a large (30cm x 25cm) intraperitoneal cystic mass, but its organ of origin could not be determined.

The patient was offered laparoscopic excision of the cyst. An indwelling urinary catheter and a nasogastric tube were placed. With the patient under general endotracheal anesthesia in a supine position, a 10-mm port was placed by the open method in the left upper quadrant. Preliminary examination revealed a giant cyst almost completely occupying the abdominal cavity. Additional 5-mm and 10-mm ports were placed on either side of the first port. The cyst was aspirated dry without any spillage of its contents, and the aspiration site was closed with an endoloop. Intraoperative fluid cytology did not reveal any malignant cells. After decompression the collapsed cystic sac could be traced upwards to a solid mass of around 5cm x 4cm arising from the greater omentum near the splenic flexure. The solid element was not attached to the bowel or adjacent structures. The entire mass along with a portion of greater omentum was excised using an ultrasonic shears (Harmonic Scalpel, Ethicon Endosurgery, Mumbai, India). A disc of the dome of the bladder, to which
the lowermost part of the cyst was attached, was excised. The bladder was closed in 2 layers with 2-0 polyglactin sutures (Vicryl, Johnson and Johnson, Mumbai, India). The specimen was placed in an extraction bag and extracted after extending the midline 10-mm port slightly. The patient made an uneventful recovery and was discharged 3 days later with a urinary catheter in place. The catheter was removed after a week. Histopathological examination showed the tumor to be a leiomyoma with cystic degeneration. Immunohistochemical examination showed the tumor cells to be positive for smooth muscle actin (SMA) and desmin, confirming it to be a leiomyoma. Negativity for S-100 excluded a schwannoma, and negativity for CD-34 and C-Kit ruled out a gastrointestinal stromal tumor. The patient remains well at follow-up, and his abdominal CT scans at 1 year and 2 years have been normal.

DISCUSSION

Omental cyst is an uncommon entity first described by Gairdner in 1852 and has a reported incidence of 1:100,000 hospital admissions. The pathogenesis of an omental cyst is unclear. Abdominal cysts are divided into embryonic or congenital (enteric, dermoid, mesenteric, omental, retroperitoneal), traumatic (hemorrhagic, chylous), neoplastic (lymphangioma, lymphangiendothelioma), or infective (mycotic, echinococcus). Mesenteric and retroperitoneal cysts are considered benign lesions; however, cases of malignancy arising within the cyst wall have been reported.6 The pathological spectrum of omental tumors is diverse. The greater omentum is composed mainly of fat, but it contains various tissues: vessels, lymphatics, and the immune system. Although rare, the reported primary omental tumors include leiomyosarcoma, fibrosarcoma, hemangiopericytoma, spindle cell sarcoma, liposarcoma, leiomyoma, lipoma, desmoid tumor, fibroma, mesothelioma, and others.7,8 Leiomyoma of the omentum is a rare tumor, and the large cystic component associated with this tumor has not been described in the surgical literature. In our patient, the SMA and desmin positivity on immunohistochemical staining unequivocally confirmed the smooth muscle origin of the tumor. Although the larger cystic component of the tumor was attached to the bladder, because the solid component originated in the omentum, the most likely site of origin of the leiomyoma in our patient was the wall of an omental blood vessel.

Both omental cysts and leiomyomas often tend to be asymptomatic and are identified incidentally on imaging studies or at laparotomy. Large omental cysts may produce either nonspecific symptoms, symptoms due to compression of other viscera, or present acutely due to torsion, intracystic hemorrhage, or rupture. Clinically, omental cysts have been described as being mobile in all directions in contrast to mesenteric cysts, which are usually mobile in one plane only. Ultrasonography is a useful preliminary investigation in assessment of patients suspected of having a cystic abdominal mass but may fail to determine the precise location. Computed tomography and magnetic resonance imaging help establish a correct diagnosis in patients with large cystic masses, because they are generally able to differentiate mesenteric, omental, and retroperitoneal cysts from other cystic lesions, such as enteric duplication, ovarian cyst, and pancreatic pseudocyst.

Once diagnosed, complete excision is the treatment of choice for omental cystic lesions, and in most, a laparoscopic approach may be adopted safely. In a patient with
a large cyst, it is preferable to introduce the primary port by using an open method away from the midline. Complete aspiration of the cyst (taking precautions against spillage) allows it to be manipulated and dissected safely. There are only a handful of cases of laparoscopic excision of omental cyst: Giovani et al. resected a 12-cm omental cyst in a 25-year-old female, Conlon et al. described excision of a 13-cm omental cyst in a 33-year-old male, and Yao et al. operated on a 15-year-old girl who had torsion of an omental cyst.

Laparoscopic excision of omental leiomyoma has not been previously reported in the surgical literature. In our patient, the laparoscopy was undertaken with a presumed diagnosis of a large omental cyst, and the solid component arising from the omentum was identified only after decompression of the cyst. Laparoscopic resection was carried out after the benign nature of the lesion was confirmed by negative intraoperative cytology. To ensure a complete excision, the portion of the dome of the bladder to which the cystic component was attached was resected. Due to the rare nature of omental leiomyomas and cystic lesions, follow-up protocols for these tumors are not well established. In our patient, we plan to perform yearly CT scans for 5 years. Laparoscopic excision of a tumor occupying the whole abdomen allowed the patient to recover rapidly with minimal pain, and the cosmetic result was excellent.

CONCLUSION

Our case confirms the feasibility and safety of laparoscopic resection in the rare pathological entity of omental leiomyoma with a large cystic component.

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