

Laparoscopic Excision of a Preperitoneal Incidentaloma

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ABSTRACT

Background: Dermoid cysts are rare well-differentiated benign tumors derived from ectodermal cell origins. Usually caught incidentally, they have the potential for mass effect, malignant degeneration, and rupture. Dermoid cysts can often present a unique surgical challenge.

Case Report: A 69-year-old male brought to the emergency department after a motor-vehicle accident had a preperitoneal incidental mass discovered on imaging. The patient was asymptomatic from the mass, though it was expanding in size. He was advised to have the mass removed, because of the possibility of malignant degeneration and rupture, and he was taken for laparoscopic surgical excision of the mass.

Discussion: Dermoid cysts develop from embryonic migration of ectodermal tissue to aberrant locations or implantation of epidermal tissue. Dermoid cysts in the abdominal cavity are rare, and only case reports exist characterizing these tumors. Rupture can result in a chemical granuloma when localized and can cause peritonitis when the rupture is throughout the entire abdomen. Rare reports of malignant degeneration are also reported in the literature. Surgical excision is the standard of care minimizing risk of rupture with removal.

Key Words: Dermoid cyst, Mature teratoma, Laparoscopy, Incidentaloma, Cyst, Abdominal mass, Benign.

INTRODUCTION

An asymptomatic tumor that is discovered incidentally while a workup is being conducted for other complaints is called an incidentaloma. It is a common problem, and up to 7% of all patients over 60 may harbor a benign growth, often of the adrenal gland. With the increased use of different forms of CT scanning, the chance of finding incidentalomas is expected to increase. Thirty-seven percent of patients receiving whole-body CT scan may have abnormal findings that need further evaluation.¹ In this report, we describe a mature cystic teratoma of the inner abdominal wall discovered incidentally during workup for blunt abdominal trauma.

CASE REPORT

During a workup for blunt abdominal trauma, a 69-year-old male was found to have an incidental mass on the inner aspect of the left abdominal wall that measured 8cm x 5cm (**Figure 1**). The mass appeared to be arising in the preperitoneal space with no evidence of invasion into any of the intraperitoneal structures. A follow-up CT performed after 3 months showed an increase in the size of the mass by 2cm. A CT scan guided biopsy revealed complex fluid with keratinous material. While this finding raises suspicion for epidermal inclusion cyst, malignant tumors could not be ruled out. Tumors that express keratin include carcinomas, mesotheliomas, thymomas, sarcomas, and trophoblastic tumors.² The patient was advised to have the mass removed, because of the possibility of malignant degeneration, infection, rupture, or all of these together. The patient was taken to the operating room for laparoscopic surgical excision of the mass.

Surgical Procedure

A pneumoperitoneum was established by a Veress needle without injury. A supraumbilical 5-mm trocar was placed. Two more 5-mm ports were placed superior and inferior to the supraumbilical port. A grasper and Harmonic scalpel were used to dissect a plane circumferentially around the mass taking the peritoneum and preperitoneal fat. The mass was placed into an EndoCatch plastic bag, and extracted through the superior trocar site after it was

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Figure 1. CT abdomen/pelvis showing well-circumscribed mass arising from the anterior abdominal wall on the left side. The mass appears to be free of intraabdominal structures and not involving the fascia. 8cm x 5cm in size.



Figure 2. Intraoperative dissection of the mass from the surrounding soft tissue keeping the cystic wall intact by using a Harmonic scalpel and grasper.

extended to 3cm in length. The patient tolerated the procedure well. He was monitored in the recovery unit and was discharged home the same day. Final pathology revealed mature cystic teratoma.

DISCUSSION

Dermoid cysts (cystic teratomas) are a rare cause of an isolated abdominal cyst. With only case reports identified

in the literature, it is difficult to determine their true incidence within our population. While they are commonly found as ovarian cysts, dermoid cysts can occur anywhere in the body including the central nervous system,³ abdominal cavity and organs,⁴ bones, oropharynx,⁵ and retroperitoneum.⁶ They are often discovered incidentally or through mass effect on nearby structures. Some may have the potential for malignant degeneration, infection, and rupture.⁷

Dermoid cysts develop from embryonic migration of pluripotent cell lines to aberrant locations or implantation and seeding most commonly from ovarian follicles. The origin is likely due to a nondisjunction during meiosis, which explains their predominance in women and ovarian origin. They are often referred to as mature teratomas, epidermal cysts, or dermoid cysts. They are true cysts containing an epithelial lining and contain tissue from all 3 germinal layers. Dermoid cysts are a subclass that contain mostly ectodermal components and often have keratin deposition within the cyst.

Dermoid cysts are best characterized as ovarian cysts and are rarely found in the abdomen. They comprise 25% of all ovarian neoplasms and most commonly occur in women younger than 40 years old. Complications include torsion (11%), rupture (1% to 4.6%), infection (<1%), and malignant degeneration (<1%).⁷ Torsion is typically more common when involving organs on a long pedicle like the ovaries or appendix and is rare in abdominal wall or retroperitoneal structures. Rupture can result in a chemical granuloma when localized and can cause peritonitis when the rupture is throughout the entire abdomen.⁸

Abdominal dermoid cysts are rare, and only case reports exist in the literature. Reported cases in the abdomen involve the cecum, mesentery, appendix, and ileum. Symptoms are rare, and usually the masses are found incidentally. Symptoms can vary depending on the organ involved, but are usually vague including abdominal pain, indigestion, nausea, back pain, bloating, changes in bowel habits, and bleeding. They can invade into adjacent structures secondary to rupture, chronic spillage of contents resulting in a localized inflammatory response, adhesion formation, and rarely fistulization.^{9,10} Malignant degeneration is a rare complication and is most commonly squamous cell carcinoma though malignant melanoma has been reported in the literature.¹¹

CONCLUSION

The goals of management are early surgical excision and prevention of rupture; minimal resection of adjacent or-

gans is ideal. Marsupialization of the cysts has been attempted in the past, but has led to fistula formation and is not recommended. A case of enucleation of a dermoid cyst involving the cecum⁴ has been described with good results. Complete surgical excision remains the preferred option and is curative given the benign nature of these tumors. Laparoscopy is the procedure of choice when amenable and is generally dependent on size, location, involved structures, and the comfort of the operating surgeon.

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