Non-Adnexal Cystic Pelvic Mass

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Case Presentation

A 67-year-old woman presented with an incidental pelvic mass that was found during a total abdominal hysterectomy and bilateral salpingo-oophorectomy (TAH-BSO). She denied pelvic pain or vaginal discharge. Past medical history and review of systems were non-contributory. Physical exam was unremarkable. The patient was referred for a CT of the abdomen and pelvis and subsequent pelvic ultrasound for evaluation of the incidentally found pelvic mass (Fig.).

Figure. Coronal (A) and axial (B) CT images through the pelvis demonstrate a well-circumscribed hypodense cystic lesion in the left pelvis abutting a loop of small bowel (arrows). The mass is remote from adnexal structures. Corresponding transabdominal gray-scale ultrasound image of the pelvis (C) shows a round hypoechoic lesion with a hyperechoic wall.
Key clinical finding

Incidental pelvic mass on TAH-BSO.

Key imaging finding

Non-adnexal cystic pelvic mass abutting small bowel.

Differential diagnoses

Enteric duplication cyst
Peritoneal inclusion cyst
Cystic lymphatic malformation

Discussion

Incidental findings during abdominal and pelvic surgery are a fairly common occurrence. Surgeons will subsequently turn to imaging in order to further characterize the incidental finding. The role of imaging is to narrow the differential diagnosis when possible and provide assistance in determining the need for potential future intervention. For pelvic masses in particular, CT, MRI, and ultrasound are often complementary modalities.

Enteric duplication cyst.

Duplication cysts may occur anywhere along the alimentary tract but most commonly occur in the small bowel. A review of 281 cases of GI tract duplications found that 47% occur in the small bowel with the majority (33%) in the ileum.

Duplication cysts are hollow, epithelium-lined, spherical or tubular structures. They share a common wall and common mesenteric arterial supply with the adjacent GI tract. They do, however, have a separate mucosal lining.

One-third of small bowel duplications are symptomatic in the neonatal period. The majority present by two years of age. Complications include bowel obstruction, intussusception, abdominal pain, and GI bleeding. As in our case, they may also be silent in presentation and remain undetected into adulthood.

On CT, these cysts are recognized by their location and morphology. In the case of small bowel duplication cysts, they will be adjacent to a loop of bowel, most often the ileum. Typically, they will measure simple fluid attenuation and will have round, smooth borders and thin, slightly enhancing walls.

The characteristic sonographic appearance includes a fluid-filled structure with an inner hyperechoic rim (mucosa) and outer hypoechoic layer (muscular wall) and posterior acoustic enhancement. This “double-layered” appearance, however, is not pathognomonic for an enteric duplication cyst. Chang, et al., has described an artifact which simulates this “double-layered” appearance in multiple non-enteric cysts, leading to incorrect diagnoses.

Peritoneal inclusion cyst:

Peritoneal inclusion cysts are seen exclusively in women and are a fairly common entity. They form around an active ovary in the area of peritoneal adhesions. Ovarian fluid resorption is limited by the adhesions and an inclusion cyst subsequently forms.

Patients will typically present with pelvic pain or pelvic mass. These occur almost exclusively in premenopausal women with history of prior abdominal or pelvic surgery.

On ultrasound, this will have an appearance of a complex, multicystic adnexal mass. They will appear adherent to the ovarian surface but will not extend to the parenchyma. These can often mimic other pathology, including hydro- or pyosalpinx. CT findings include a non-specific cystic lesion near the adnexae which contains simple or complex fluid.

Cystic lymphatic malformation.

Pelvic lymphatic malformations are relatively rare and are thought to result from abnormal development of venolymphatic structures or lymphangioma formation secondary to injury, inflammation, or hemorrhage. They are typically congenital and present before two years of age with pain. The most common location is in the mesentery of the small bowel.

Ultrasound shows a single or multi-locular lesion with a thin wall, which helps to distinguish it from a usually thick-walled duplication cyst. The malformation is typically anechoic but may contain some internal echoes.
Diagnosis

Enteric duplication cyst

Summary

Incidental cystic mass lesions found during pelvic surgery can present a diagnostic challenge. While keeping in mind certain pitfalls, cross-sectional imaging can help to distinguish between diagnostic considerations, which include enteric duplication cysts, peritoneal inclusion cysts and cystic lymphatic malformations. Knowledge of typical imaging patterns is pivotal for proper interpretation of these studies.

References