

A cause of pelvic pain: inclusion peritoneal cyst

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Section: Genital (female) imaging

Area of Interest: Pelvis Abdomen

Procedure: Diagnostic procedure

Imaging Technique: Ultrasound

Imaging Technique: CT

Special Focus: Pathology Case Type: Clinical Cases

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Patient: 25 years, female

Clinical History:

A 30-year-old female patient underwent laparotomy for endometriosis. Six months later, she presented with recurrent lower abdominal pain. Per-vaginal examination revealed a 4-5 cm cystic mass localised mainly at the left adnexa.

Imaging Findings:

Ultrasound images of the pelvis revealed an irregular, anechoic, cystic lesion containing septations; the ovary was not seen (Fig. 1). Abdominopelvic CT followed and showed a cystic adnexal mass with a normal ovary eccentrically located in the collection (Fig. 2a-d).

Routine haematological and biochemical investigations were normal.

Based on the existence of a cystic mass without clearly defined walls, encircling a normal-appearing ovary, in a young female with history of pelvic surgery a diagnosis of peritoneal inclusion cyst was made and the patient was managed conservatively. The patient improved clinically after one month.

Discussion:

Peritoneal inclusion cysts (PIC), present with a variety of imaging representations that may be confounded with various adnexal masses.

A complex cystic adnexal mass refers to a long list of differential diagnoses, including ovarian cancer. Yet, imaging findings will confirm diagnosis of PIC if they are correlated with appropriate clinical findings [1]. The correct diagnosis allows conservative treatment, preventing unnecessary surgery.

The development of a PIC relies on the existence of an active ovary and peritoneal adhesions [2].

When the peritoneum is infected or mechanically injured, its properties of transport are modified and fluid absorption is slower, leading to a decrease in the clearance of ovarian fluid [3].

The higher concentration of ovarian steroid hormones in peritoneal fluid than in plasma support the ovarian origin of the fluid [4, 5]. Furthermore, inflammation may cause exudate.

Most women with PICs present with pelvic pain or a pelvic mass [1].

PICs occur almost exclusively in premenopausal women; the most common peritoneal insults are endometriosis, pelvic inflammatory disease, previous abdominal or pelvic surgery, and trauma.

Ultrasound, CT or MRI typically show cystic masses with septations or loculated fluid collection within the pelvis but no enhancing solid component. The ovaries are usually normal or entrapped by but clearly separate from cystic

locules. The entrapped ovary appears like a spider in a web and may be mistaken for a solid nodular portion of the tumour with surrounding septations. Sometimes, the ovary may be eccentrically located to the adhesions [6, 7]. Haemorrhage occasionally may be seen within a cyst; the cyst will show attenuation higher than that of simple fluid at CT, hypersignal at T1-weighted MR imaging, and hyposignal at T2-weighted MR imaging [8]. The correct clinical diagnosis of peritoneal inclusion cysts is helpful in planning treatment. Conservative treatment should be considered for patients with peritoneal inclusion cysts. It includes the use of oral contraceptives to suppress ovulation, pain medication as needed; and transvaginal fluid aspiration if symptoms from large collections exist. Laparoscopic or surgical resection of adhesions is required only in selected cases [6].

Differential Diagnosis List: Inclusion peritoneal cyst, Paraovarian cyst, Malignant ovarian neoplasm

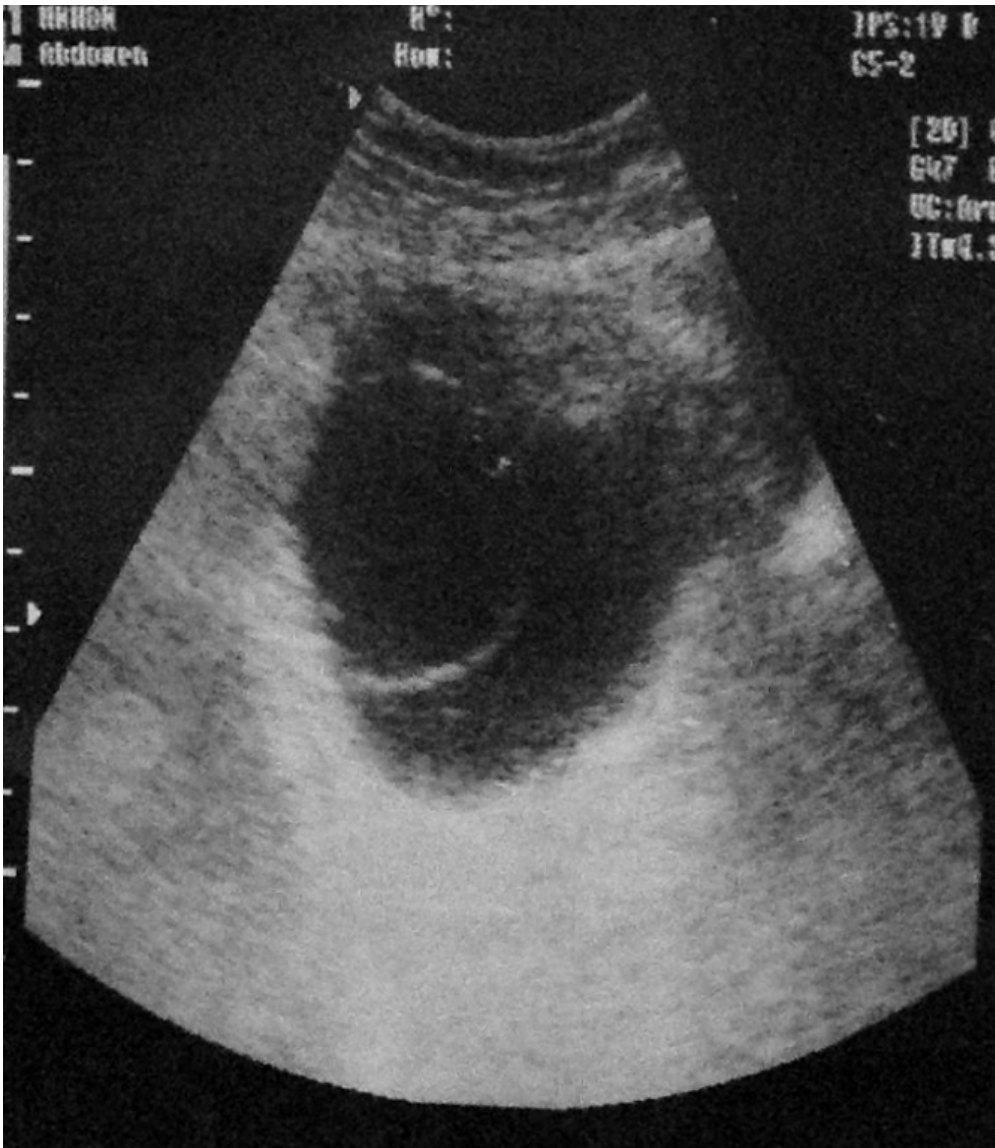
Final Diagnosis: Inclusion peritoneal cyst

References:

- Sohaey R, Gardner TL, Woodward PJ, Peterson CM. (1995) Sonographic diagnosis of peritoneal inclusion cysts. *J Ultrasound Med* 14:913–917. (PMID: [8583527](#))
- Kim JS, Lee HJ, Woo SK, Lee TS (1997) Peritoneal inclusion cysts and their relationship to the ovaries: evaluation with sonography. *Radiology* 204:481–484. (PMID: [9240539](#))
- Hoffer FA, Kozakewich H, Colodny A, Goldstein DP (1988) Peritoneal inclusion cysts: ovarian fluid in peritoneal adhesions. *Radiology* 169:189–191 (PMID: [3047785](#))
- Maathuis JB, Van Look PFA, Michie EA. (1978) Changes in volume total protein and ovarian steroid concentrations of peritoneal fluid throughout the human menstrual cycle. *J Endocrinol* 76:123–133 (PMID: [624877](#))
- Komickx PR, Renaer M, Brosens IA. (1980) Origin of peritoneal fluid in women: an ovarian exudation product. *Br J Obstet Gynaecol* 87:177–183. (PMID: [7387917](#))
- Kiran A. Jain. (2000) Imaging of Peritoneal Inclusion Cysts. *AJR* 174:1559–1563. (PMID: [10845480](#))
- Sitthipong Srisajjakul 1, Chanika Tiengsittiwat 2, Sirikan Bangchokdee 3. (2014) Imaging of uncommon peritoneal diseases. *International Journal of Diagnostic Imaging*, Vol. 1, No. 2:79-87.
- Levy AD, Arnaiz J, Shaw JC, Sobin LH (2008) Primary peritoneal tumors: imaging features with pathologic correlation. *RadioGraphics* 28(2):583–607; quiz 621–622. (PMID: [18349460](#))

Figure 1

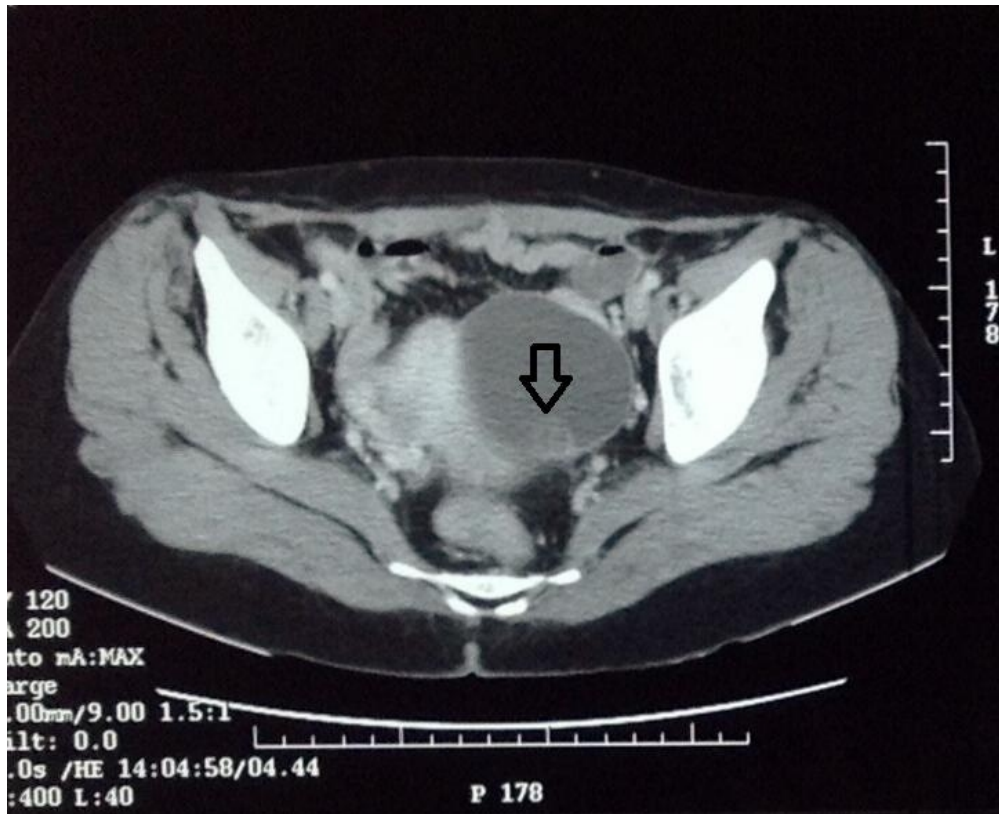
a



Description: Ultrasound image of the pelvis shows an irregular, anechoic, cystic lesion containing septations; the ovary was not seen. **Origin:** Ammor H, Department of Radiology, Moulay El Hassan Ben El Mehdi hospital, Laayoune, Morocco

Figure 2

a



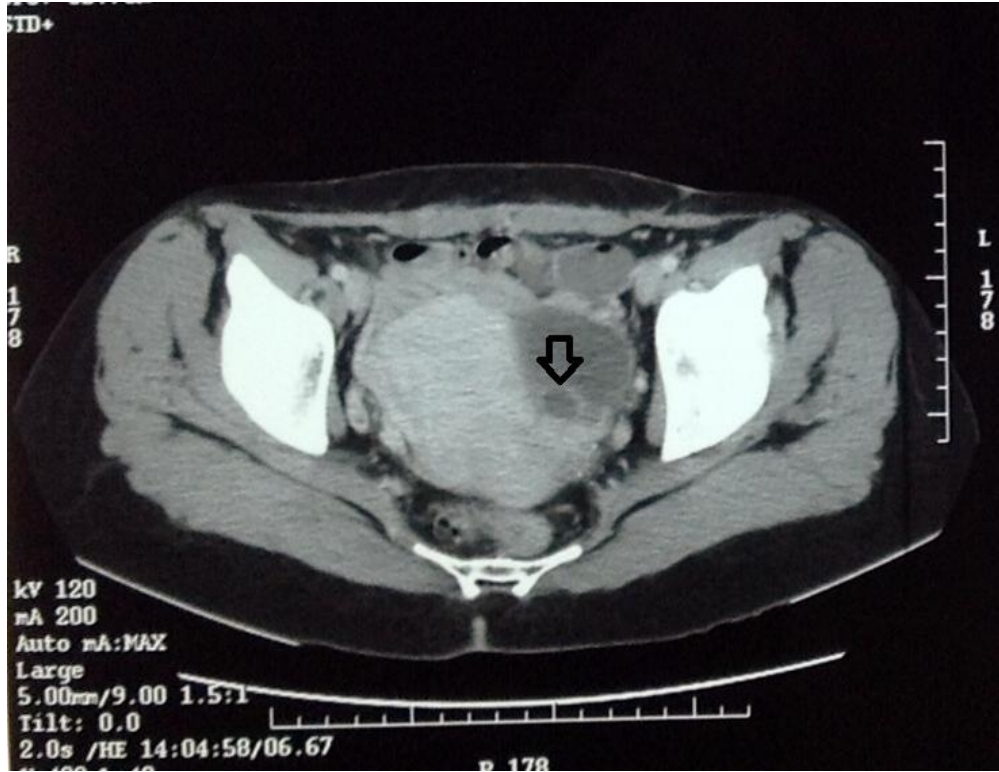
Description: Abdominopelvic CT after injection of contrast media shows a homogeneous ill-defined hypodense pelvic collection with a normal ovary eccentrically located in the collection (arrow). **Origin:** Ammor H, Department of Radiology, Moulay El Hassan Ben El Mehdi hospital, Laayoune, Morocco

b



Description: Abdominopelvic CT after injection of contrast media shows a homogeneous ill-defined hypodense pelvic collection with a normal ovary eccentrically located in the collection (arrow). **Origin:** Ammor H, Department of Radiology, Moulay El Hassan Ben El Mehdi hospital, Laayoune, Morocco

C



Description: Abdominopelvic CT after injection of contrast media shows a homogeneous ill-defined hypodense pelvic collection with a normal ovary eccentrically located in the collection (arrow). **Origin:** Ammor H, Department of Radiology, Moulay El Hassan Ben El Mehdi hospital, Laayoune, Morocco

d



Description: Abdominopelvic CT after injection of contrast media shows a homogeneous ill-defined hypodense pelvic collection. **Origin:** Ammor H, Department of Radiology, Moulay El Hassan Ben El Mehdi hospital, Laayoune, Morocco