

General Data

- Sex: female
- Age: 8 years old
- Birth date: 84/07/17
- Date of admission: 92/10/08

Chief Complaint

- Severe abdominal pain and vomiting for one day

Present Illness

- Lower abdominal pain and dysuria for about one month
- Pain located over anterior and left side and was tenderness and intermittent
- Pain relieved after enema or voiding
- Pain become severe the day before admission and had vomiting and mild hematuria noted

Personal History

- Drug and food allergy: to some sea food
- Birth history: full term, NSD
- Developmental history: normal
- Immunization history: as scheduled
- Family history: no contributory

Past History

- Past surgical history: nil
- Past medical history: admitted into our hospital on 89/07/14 due to pneumonia
- Had visited our ER on 92/9/15 and 92/9/21 due to abdominal pain

Physical Examination

- Abdomen:
 - Soft and flat
 - Single palpable roundly mass, soft, 10*8 cm in size, mild tenderness

Laboratory Data

- CBC/DC, CRP, BUN, Crea, gamma-GT, amylase, electrolyte: no specific data
- Tumor markers (AFP, CEA, CA-125): negative
- Blood HCG: negative
- U/A: OB:2+, WBC:1+, Ketone:3+

Image Study

- X-ray
- Sonography
- VCUG
- Abdominal CT

Sonography

- 92/9/19
- Distended urinary bladder after urination
- Suspect one mass with irregular margin within urinary bladder, 2.7*1.7 cm

KUB (I)

- 92/9/19: fecal material within colon, fecal impaction is considered



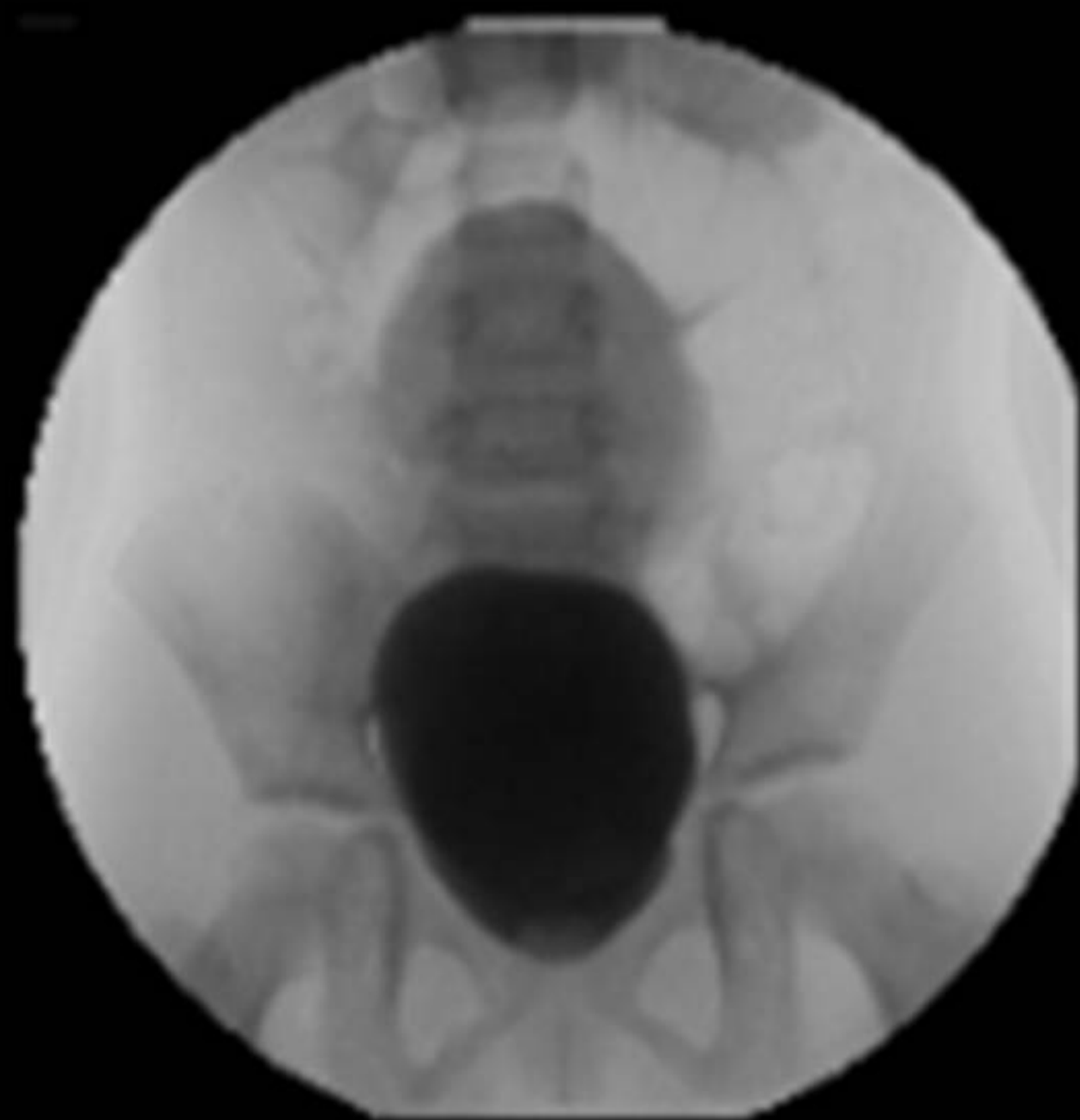
KUB (II)

- 92/10/9
- Negative of the abdomen
- Contrast medium in the collecting system
- Well expansion of the bladder, but deformity



VCUG

- 92/10/09
- A well defined soft tissue mass noted in the lower abdominal cavity just above the urinary bladder
- Well expansion of the bladder



Abdominal CT

- 92/10/9
- A large, relatively well-defined cystic mass (5.4cm*7.9cm) with enhanced soft tissue components at its central part and peripheral part
- Located at r't anterior-middle abdominal cavity
- Small fat and tooth like calcified components within the mass
- Large teratoma is considered, but superimposed malignant change can not be completely r/o



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Impression

- Intra-abdominal mass r/o teratoma

Surgery

- OP day: 92/10/15
- OP procedure: expand laparotomy and left ovarian resection
- OP finding:
 - Left ovarian tumor about 5 cm in diameter
 - Heterogeneous content, soft
 - No adhesion to surrounding tissue

Pathological Findings

- Reported on 92/10/17
- Gross:
 - 9*7*6 cm ovarian has gray and smooth wall
 - Cystic like with focal hemorrhage
 - Clear fluid, hair like and oil material contain
- Micro: skin, hair, sebaceous gland and some mature brain tissue
- Imp: mature cystic teratoma

Discussion

Ovarian Teratoma

Cause

- Benign transformation of germ cell after first meiotic division
- Contain ectodermal, mesodermal and endodermal elements

Epidemiology

- Most common in young reproductive females
- 15% of all ovarian tumors
- 20-40% of all ovarian tumors of pregnancy

Symptoms and signs

- Symptoms: Pain with hemorrhage into hemorrhage, torsion or rupture, usually asymptomatic
- Signs: Pelvic mass; 10-20% are bilateral

Differential Diagnosis

- Ovarian cyst
- Abdominal abcess
- Ectopic pregnancy
- Urachal cyst
- Bladder duplication

Differential Diagnosis – Ultra Sound of Ovarian Cyst (I)

- Ultrasound is the primary imaging tool for a patient considered to have an ovarian cyst.
- Simple cysts - unilocular and have a uniformly thin wall surrounding a single cavity that contains no internal echoes
- Complex cysts - more than one compartment (multilocular), thickening of the wall, projections (papulations) sticking into the lumen or on the surface

Differential Diagnosis – Ultra Sound of Ovarian Cyst (II)

- Hemorrhagic cysts, endometriomas, and teratoma tend to have characteristic ultrasound features that may help to differentiate them from malignant complex cysts

Transabdominal ultrasound image demonstrating a large, complex, cystic mass with septations



Differential Diagnosis – CT of Ovarian Cyst

- CT scanning is inferior to ultrasound and MRI for helping define ovarian cysts and pelvic masses
- CT scan allows examination of the abdominal contents and retroperitoneum in cases of malignant ovarian disease

Differential Diagnosis – MRI of Ovarian Cyst

- MRI with gadolinium allows clearer evaluation of lesions deemed indeterminate after performing ultrasound.
- MRI images have better soft tissue contrast compared to CT scan images, particularly for identifying fat and blood products, and can give a better idea of the organ of origin of gynecologic masses.
- MRI is not necessary in most cases.

Differential Diagnosis –KUB of cystic teratoma

- KUB may show bone or teeth within the cyst sometimes

Differential diagnosis – abdominal abscess

- Plain abdominal radiographs, though rarely diagnostic, frequently indicate the need for further investigation
- Ultrasonography has an accuracy rate greater than 90% for diagnosing intra-abdominal abscesses
- CT scan has greater than 95% accuracy and is the best diagnostic imaging method
- Radioactive agents, such as leukocytes labeled or tagged with gallium-67 or indium-111, may localize the area of inflammation.

Abdominal abscess. Percutaneous CT-guided drainage of postoperative subhepatic collection



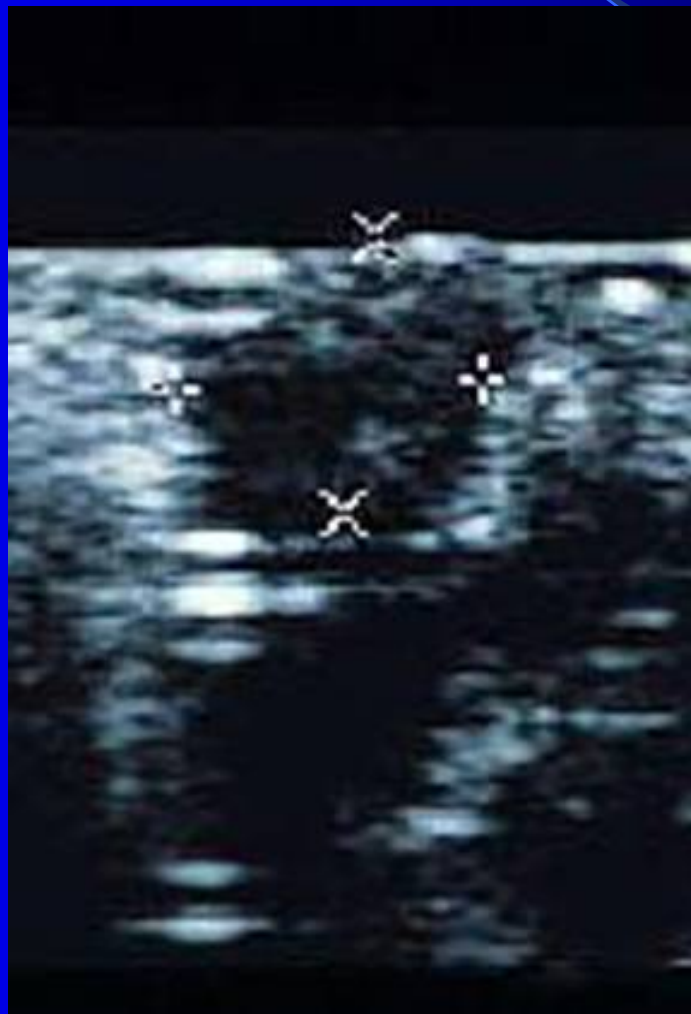
Differential Diagnosis – Ectopic Pregnancy

- Elevation of Beta-HCG
- Ultrasonography - the most important tool in diagnosing an extrauterine pregnancy
- Doppler US - demonstrated to improve the diagnostic sensitivity and specificity of transvaginal US

Differential Diagnosis – Urachal cyst

- Ultrasonography is the best test for detecting urachal cyst
- CT scanning or MRI can help to delineate the size and location of the cyst
- With infected urachal cysts, CT scanning is used to determine involvement of adjacent structures secondary to the inflammatory mass

Ultrasound demonstrating urachal cyst.
Ultrasound cursors mark the extent of the cyst



Differential Diagnosis – Bladder Duplication

- The full evaluation is best performed with IVP and VCUG
- These 2 tests delineate both upper tract and lower tract anatomy

Bladder Duplication

IVP



VCUG



Laboratory and Pathology

- Lab: non specific data finding, tumor markers usually negative
- Pathology: bone, teeth or hair noted by gross. Micro showed all 3 layers of embryonal tissue

Treatment

- Surgical intervention is the only choice
- Any teratoma with mature elements can be assumed to be benign
- Simple ovarian cystectomy could preserve both ovaries

Thank You !