Ovarian cyst mimicking ascites on abdominal ultrasonography in a prepubertal female

R Pathak[1] and DB Karki[2]

[1]Department of Obstetrics and Gynecology and [2]Department of Radiology, Nepal Medical College Teaching Hospital, Jorpati, Kathmandu, Nepal

Corresponding author: Dr. Ranjan Pathak, Nepal Medical College Teaching Hospital, Jorpati, Kathmandu, Nepal; Phone: 9779841498309 (mobile), e-mail: ranjanrp@gmail.com

ABSTRACT

Ultrasonography has been commonly used in the diagnosis of intraabdominal cysts like ovarian cysts. Massive ovarian cysts can mimic ascites clinically (a condition termed pseudoascites) and ultrasonographically and can cause delay in the diagnosis and management. Clinicians should therefore consider other differential diagnoses in cases of large intraabdominal fluid collection. We report such a case in a prepubertal female which was diagnosed as ascites by ultrasonography initially but later turned out to be an ovarian cyst.

Keywords: Ovarian cyst, ascites, pseudoascites, ultrasonography.

Ultrasonography is commonly used in the diagnosis of ovarian cysts. However, enormous ovarian cysts can mimic ascites clinically and ultrasonographically.[1,2]

We describe a young girl with accumulation of fluid originally diagnosed as ascites by ultrasonographic examination which ultimately proved to be an ovarian cyst.

CASE PRESENTATION

A 13 year old girl presented to NMCTH medical outpatient department with distension of abdomen of two months duration. The patient complained of gradually increasing abdominal distension (pants did not fit anymore), shortness of breath even at rest, poor appetite and weight loss. There was no history of vomiting, fever, jaundice, swelling over the face or limbs, or change in bowel habit. Her past history was unremarkable and she had not attained menarche. General physical examination revealed pallor but no icterus, pedal edema or lymphadenopathy. Vitals were stable. Abdominal examination showed generalized distension of abdomen with dilated veins but no tenderness. The liver and spleen were not palpable. Percussion note was dull all over the abdomen with a positive fluid thrill. Rest of the systemic examination was unremarkable. Laboratory evaluation revealed Hb 10 gm/dl, total leukocytes count 7 400/cumm with normal differential count. Platelet count, ESR, serum urea, creatinine, albumin, amylase, bilirubin, AST, ALT, sodium and potassium were within normal limits. Urinalysis and Chest radiograph were also normal. An abdominal ultrasonogram showed large amount of free fluid in abdomen with appearance of bowel loops floating into the free fluid (Fig. 1). As a result, the ultrasonographic impression was made as gross ascites. An abdominal tap revealed serous fluid with normal total and differential counts, amylase and ADA levels; the cytology, culture, Gram stain and Ziehl-Neelsen smear were negative. Patient was initially treated non-operatively comprising of fluid restriction and diuretics (spironolactone) and oral iron supplementation for iron deficiency anemia. But the patient did not respond. Later on plain and contrast enhanced abdominal CT was performed which demonstrated a huge abdomino-pelvic cystic lesion (Fig. 2). It consists of solid components, bowel like extensions and calcifications which indicated ovarian cyst instead of a large fluid collection only. On laparotomy a huge ovarian cyst arising from the left ovary was identified containing both solid and multiple cystic areas. Cyst wall was smooth, with no adhesions and minimal ascitic fluid. Left salphingoopherectomy was done. The cyst was histologically identified as struma ovarii with benign cystic teratoma. Seen two months after discharge, the patient was doing well.

Fig. 1. Ultrasonography showing fluid collection and bowel loop-like areas

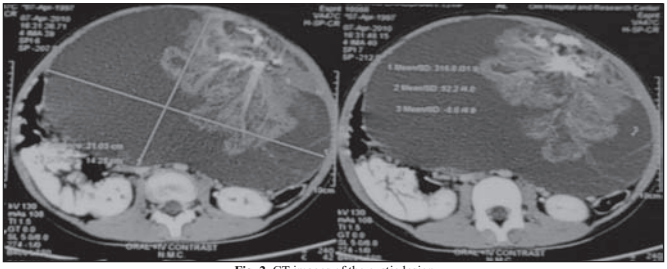

Fig. 2. CT images of the cystic lesion

DISCUSSION

Abdominal distension, bulging flanks, shifting dullness and a palpable fluid thrill usually denote the presence of ascites which is an abnormal collection of free fluid within the peritoneal cavity.[3] While this diagnosis is correct in most cases, occasionally similar signs are observed in patients without free fluid in the peritoneal cavity. In those cases the term pseudoascites is used, indicating that although the physical findings are highly suggestive of ascites, no free fluid is present in the peritoneal cavity. Fiedorek *et al* and Brophy *et al* have reviewed the various causes of pseudoascites of which some are giant mesenteric cysts, giant omental and giant ovarian cysts.[4-6]

Massive ovarian cysts fill the entire abdomen and can be easily mistaken for ascites.[7] Giant ovarian cysts mimicking ascites have been reported previously but not in prepubertal female. Our patient had no systemic disease known to cause ascites. There were also no clinical or laboratory findings of local peritoneal disease such as tuberculosis. She was evaluated in other hospitals and diagnosis of ascites of unknown origin had been made. She had undergone abdominal paracentesis as part of the laboratory investigations. Unwitting ovarian cyst paracentesis yields non-specific information on biochemical, microbiological and cytological examinations.[5] When in doubt about the nature of such abdominal distension, abdominal paracentesis should be avoided.[8,9]

Considering the ultrasound of our case retrospectively, echogenic areas were seen but they were assumed to be bowel gas shadows instead of calcifications. Similarly, peristaltic waves in bowel loops like areas were not assessed which is a common phenomenon in routine scan. These two things could have altered the diagnosis and therefore should be kept in mind while performing the ultrasound of such large abdominal collections.

Ultrasonography is commonly used as the first step in the evaluation of patients suspected of intra-abdominal pathology. It is the investigation of choice for clinicians because it is very useful, widely available and without the risk of harmful radiation. However, clinicians should also recognize the limitations of ultrasonography and should consider conditions other than ascites in the differential diagnosis of large intra-abdominal fluid collection. And they should use other diagnostic modalities like abdominal CT or laparoscopy to find out other differential diagnoses as well as to explore the cause of ascites.

REFERENCES

1. Menahem S, Shvartzman P. Giant ovarian cyst mimicking ascites. *J Fam Pract* 1994; 39: 479-81.
2. Lombardo L, Babando GM. Giant ovarian cyst mimicking ascites. *Gastrointest Endosc* 1986; 32: 245-6.
3. Cattau EL, Benjamin SB, Knuff TE, Castell DO. The accuracy of the physical examination in the diagnosis of suspected ascites. *J Amer Med Assoc* 1982; 247: 1164-6.
4. Fiedorek SC, Casteel HB, Reddy G, Graham DY. The etiology and clinical significance of pseudoascites. *J Gen Intern Med* 1991; 6: 77-80.
5. Fiedorek SC, Gopalakrishna GS, Bloss RS. Giant omental cysts presenting as pseudoascites in children. *Tex Med* 1986; 82: 42-5.
6. Brophy CM, Morris J, Sussman J, Modlin JM. "Pseudoascites" secondary to an amylase-producing serous ovarian cystadenoma. A case study. *J Clin Gastroenterol* 1989; 11: 703-6.
7. Bernal MS, Luna BI, Olivares CV *et al*. Giant cyst of the ovary: Report of a case. *Ginecol Obstet Mexico* 2001; 69: 259-61.
8. So CS, Schiedermayer D. Pseudoascites in the clinical setting: avoiding unwarranted and futile paracenteses. *Wis Med J* 2000; 99: 32-4.
9. Bar-Maor JA, Lernau OZ. Giant abdominal cysts simulating ascites. *Amer J Gastroenterol* 1981; 75: 55-6.

NMC Academic Building & Academic Activities

FOR FUTHER INFORMATIONS: Attarkhel, Jorpati VDC-7, Kathmandu, P.O. Box: 13344, NEPAL
Phone: 4911008, Fax: 00977-1-4912118, Email: nmcrc@nmcth.edu Website: www.nmcth.edu