Hemorrhagic Pseudocyst of the Adrenal Gland Causing Acute Abdominal Pain

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Abstract
Acute abdominal pain is a common clinical entity with varied etiology. Hemorrhagic pseudocysts of the adrenal gland are rare lesions that might be considered in the differential diagnosis of acute abdominal pain. Herein, we report a case of young married female presenting with acute pain abdomen and fever, who was diagnosed to have hemorrhagic pseudocyst of the adrenal gland.

**INTRODUCTION**

Acute pain abdomen is a common clinical entity for which various causes could be responsible. With the currently available imaging techniques it is easier to diagnose space-occupying lesions in the abdomen causing acute pain abdomen accurately. Cystic lesions of the adrenal gland are rare, which may present with acute abdominal pain due to hemorrhage inside the cyst. An “adrenal pseudocyst” is the term given to non-neoplastic, non-parasitic cysts of the adrenal gland in which an epithelial or endothelial lining is not demonstrated. Although the first description of an adrenal cyst was in 1670, only a little more than 300 cases of adrenal cysts and about 125 cases of pseudo cyst of the adrenal gland have been reported in the subsequent literature.

**CASE REPORT**

A 26 years old lady presented to us with a 3 days history of continuous, dull aching pain in the epigastric and right upper quadrant of the abdomen of moderate-severe intensity radiating to the back and right shoulder. Pain was associated with nausea, but not vomiting and relieved by pain killer drugs. She felt feverishness along with pain. There was no relation of pain with the food intake, no history of altered bowel or bladder habits, chest pain, cough, or hemoptyisis. There was no history of episodic headache, palpitation, or excessive perspiration. She had no history of trauma to the abdomen, no history of prolonged illness, hospitalization or surgery in the past. She was married 9 months back with normal menstrual cycles. There was no history of intake of oral contraceptives, and there was no history of amenorrhoea.

On examination she was febrile with temperature of 102.2 F. There was fullness and diffuse tenderness over right upper quadrant of the abdomen. Laboratory investigations revealed hemoglobin of 9.4 gm/dl with normocytic and mild hypochromic blood picture; erythrocyte sedimentation rate of 50 mm at the end of first hour, total leukocyte count was within normal limit with normal differential count. Fasting blood sugar, renal functions, and liver functions were within normal limits. Serum amylase level was within normal limit; urine and stool examination and chest X-ray did not reveal any abnormalities.

She underwent radiological investigations (Fig. 1). Ultrasonic of the abdomen, revealed 10x10cm, homogenously hypoechoic lesion in right adrenal area with peripheral anechoic rim and peripheral curvilinear calcification, indenting liver surface with well maintained facial planes. A CECT of the abdomen revealed large heterogeneous hypodense (hemorrhagic) soft tissue mass lesion in right adrenal region with surrounding inflammatory changes with hemorrhagic fluid measuring 9.6x8.9cm indenting over inferior aspect of right lobe of liver and displacing inferior vena cava with no abdominal lymphadenopathy. A MRI of abdomen revealed well defined lobulated heterogeneous soft tissue mass with hemorrhagic component in right suprarenal region.

Basal cortisol, stimulated cortisol 1hr after 250 µg of synthetic ACTH, plasma ACTH level and 24 hour urinary catecholamine levels were within the normal limits. Serum hydatid serology was negative.

She underwent midline laparotomy and right adrenal cyst excision on 8th day of admission to the hospital. Old clots were evacuated and the cyst was removed intact. She made an uneventful recovery in the postoperative
period and was discharged on 7th postoperative day.

Pathologic examination of the excised lesion (Fig. 2) revealed a cyst measuring 10.5 x 7.5 cm and weighing 80 grams. Examination of cyst wall revealed fibrocollagenous tissue along with adipose tissue and skeletal muscle. There were extensive areas of fresh and old hemorrhages in the cyst wall with organization and granulation tissue formation. No cyst lining or vascular malformations were seen. Adrenal tissue was compressed at the periphery of the cyst wall. A final diagnosis of hemorrhagic pseudocyst of the right adrenal was made.

**DISCUSSION**

Most adrenal cysts are asymptomatic and are found incidentally. An estimate of true incidence, based on post-mortem studies done on 13,996 cases is 0.06%. They occur at all ages, with a peak incidence in the 4th to 5th decades with male: female ratio of about 1:3. Adrenal pseudocysts make up 40% of adrenal cysts. Abdominal pain, is the most frequent symptom, followed by abdominal mass or swelling, incidental finding and hypertension.

True origin of adrenal pseudocyst remains a mystery. One theory suggests that these lesion result from intra-adrenal hemorrhage caused by trauma, a sepsis event, or another form of shock. This initial injury leads to the development of a cavity with a scarred, fibrous lining that slowly enlarges over time. Another theory suggests that these lesions are true cysts that have lost their cellular lining because of inflammation and bleeding within the cyst.

The treatment options for pseudocysts include simple observation, percutaneous drainage, surgical drainage and surgical resection. Although observation may be indicated in the small, asymptomatic lesions; larger lesions (i.e. greater than 6 cm) should be treated more definitively. In general, percutaneous drainage is the preferred option for the treatment of adrenal cysts. However it is difficult to drain these pseudocysts, because they are filled with old, hemorrhagic fluid. In addition, this makes differentiation between a cyst and a necrotic, malignant neoplasm impossible. The most definitive treatment is surgical excision. This can be performed safely and provide the pathologist with tissue for a definitive diagnosis. In addition, it guarantees a cure. Surgical resection should be performed for all symptomatic lesions and asymptomatic, large lesions where the concern for malignancy is high. It is reasonable to screen for catecholamine excess before operation, because a missed functioning pheochromocytoma could have grave consequences.

In summary adrenal pseudocysts are rare, with a slight female preponderance. The most common origin is degeneration of an endothelial cyst after repeated hemorrhage and inflammation. Small, asymptomatic pseudocysts can be observed without treatment, but symptomatic pseudocysts or those greater than 6 cm should be excised.

**REFERENCES**