Spontaneous Unilateral Adrenal Haemorrhage in Adult: A Rarity
Published on 09.11.2006

DOI: 10.1594/EURORAD/CASE.5309
ISSN: 1563-4086
Section: Uroradiology & genital male imaging
Case Type: Clinical Cases
Authors: Dr Manas Sharma MD; Dr Kalidas Singh MBBS; Dr SC Dutta FRCS; Dr AJ Rai Barua MCh; Dr M Saikia MD; Dr Gazi S Ahmed MD; Dr Atanu Barua MS;
Patient: 45 years, female

Clinical History:
A 45 yr old female presented with dull aching left flank pain relieved on taking anti-inflammatory drugs, occasional sweating and palpitation with a non tender lump in the left hypochondrium for one year. Imaging revealed a large left retroperitoneal complex cystic mass displacing the left kidney inferiorly.

Imaging Findings:
A 45-year-old female patient had dull aching left flank pain, sweating and palpitation off and on for one year. There were no other associated symptoms or aggravating factors. Symptoms were relieved with medication during the episodes. Severity of pain gradually decreased after treatment with NSAIDs and beta blockers. Past history didn’t reveal any significant trauma or major illness. General examination was normal. A non tender lump in the left hypochondrium was found per-abdominally. Haemogram and biochemical investigations were normal. Ultrasonography of abdomen revealed a large left-sided complex cystic retroperitoneal mass approximately (80 x 60) mm size. Plain CT study of the abdomen showed a large left-sided well-defined rounded retroperitoneal mass lesion, (85 x 66 x 65) mm in size, with few linear calcifications, displacing the left kidney inferiorly. On contrast-enhanced scans, it had heterogenous enhancement with non-enhancing cystic areas within. Left renal vein was in close proximity with the lesion but there was no evidence of luminal invasion. An imaging diagnosis of a pheochromocytoma was considered. Urinary catecholamines was found to be normal. The patient underwent abdominal exploration under general anesthesia; via a left renal incision and a firm mass over the superior pole of left kidney of about the same size was seen. The mass was excised by ligating the adrenal vessels, peroperative period was uneventful and postoperatively there was no evidence of adrenal insufficiency. Histopathology confirmed the diagnosis of hemorrhagic adrenal necrosis with focal hyperplasia. No clear cause of the adrenal hemorrhage was identified.

Discussion:
Adrenal hemorrhage is uncommon and is mostly an incidental finding unless it is obvious with history of trauma. A single explanation for the pathophysiology of adrenal hemorrhage is not universally accepted. This condition occurs in the setting of blunt abdominal trauma, sepsis, neonatal asphyxia, or as a complication of systemic coagulopathy and is likely multifactorial. Nontraumatic adrenal hemorrhage is uncommon and may be associated with a variety of conditions. The clinical manifestations of nontraumatic adrenal hemorrhage are varied and probably depend on the amount of hemorrhage, its effect on hemodynamics, rate of onset, ability of surrounding structures to contain the bleed, presence or absence of rupture into the perinephric space, and functional status of the patient’s haemostatic system. Patients may have sudden or gradual onset upper abdominal, flank, or back pain and signs of massive blood loss. Causes are largely classified into five categories: stress, hemorrhagic diathesis or coagulopathy,
neonatal stress, underlying adrenal tumors, and idiopathic disease. The large majority of patients with adrenal hemorrhage do not have clinically obvious signs of adrenal insufficiency or symptoms are non specific. Those with adrenal insufficiency usually present with shock, nausea, vomiting, abdominal pain, fever, hypoglycemia and electrolyte imbalance while those with pre-existing chronic adrenal insufficiency may give history of weight loss, anorexia and weakness. Bilateral adrenal infarction, caused by hemorrhage or sepsis (Waterhouse-Friderichsen syndrome) is rapidly fatal unless appropriately treated. The most common laboratory abnormalities are hyponatremia, hyperkalemia, azotemia, and hypercalcemia, which are typically present in the chronic stage of adrenal insufficiency. Imaging usually reveals a heterogeneous mass lesion in the adrenal gland with mass effect depending on its size, sometimes proving difficult to differentiate from a tumor. Sonography, CT and MRI help in diagnosis. Angiography and nuclear scans may be needed to exclude other causes. CT is the preferred method for identifying adrenal hemorrhage in all but neonates. Rapid, accurate, and widely available CT permits rapid concurrent evaluation of multiple abdominal organ systems. A hemorrhagic adrenal tumor should be suspected when CT or MR imaging reveals a hemorrhagic adrenal mass of heterogeneous attenuation or signal intensity and demonstrates enhancement. Treatment is determined by the lesion size and symptoms. Conservative management is appropriate for the newborns with adrenal hemorrhage. Surgical excision is done for large and symptomatic hemorrhage. Recent trends include laparoscopic adrenalecetomy. In case of our patient, there was no history of trauma and clinical as well as imaging features were rather suggestive of an adrenal tumor. Surgical and pathological evidence ultimately proved it to be adrenal haemorrhage likely spontaneous as there was no history of trauma or other preceding illness. Thus, non-traumatic adrenal hemorrhage, a known rare condition, may present as an asymptomatic adrenal mass which is most of the time diagnosed incidentally and should therefore be considered in the differential diagnosis of all adrenal mass lesions. Adrenal insufficiency may be present infrequently with remission and recurrence. Excision of the affected gland relieves the symptoms in most of the cases.

**Final Diagnosis:** Spontaneous unilateral adrenal gland haemorrhage with focal hypertrophy

**References:**


Description: Ultrasound image reveals a rounded largely hypoechoic well demarcated heterogeneous left supra-renal mass lesion. Origin:
Description: Plain CT axial section showing a well defined left supra-ranal mass with a small hyperattenuated component within. Origin:
Description: Post-intravenous contrast axial CT scan reveals rim enhancement of the left supra-renal lesion with internal septations and non-enhancing necrotic areas. Origin:
Description: Post-intravenous contrast CT image at an inferior level showing the left kidney to be separate from the mass lesion. It is seen displaced postero-inferiorly by the lesion. Origin:
Description: Delayed post-contrast CT image shows increased internal enhancements from the periphery with persistent central non-enhancing areas. Origin:
**Description:** Coronal and para-sagittal reformatted CT images show the lesion in proper perspective in relation to the adjacent structures including the left kidney.

**Origin:**
Figure 3

a

Description: The lesion as seen per-operatively in situ. Large lobulated left supra-renal mass

b

Description: The supra-renal mass after being excised in toto
Description: Cut section of the resected supra-renal mass lesion showing presence of haemorrhages and fibrosis within Origin:
Figure 4

Description: Microscopic views of cut section of the lesion under different magnifications

Origin: