

BILATERAL ADRENAL ABSCESSSES - A RARE ENTITY: A case report with review of literature

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ABSTRACT:

Objective: To report a very rare condition of bilateral adrenal abscesses in an infant. From literature it appears to be the third case being reported. On ultrasound imaging on several occasions it was considered to be bilateral adrenal hemorrhage. Hence our objective is to highlight the possibility of such masses to be adrenal abscesses.

Design: Report of an unusual problem in an infant.

Setting: Department of Pediatric Surgery, Children's Hospital, PIMS, Islamabad.

Results: Successfully treated with surgical drainage.

Conclusion: Bilateral suprarenal abscesses usually results as an uncommon complication of bilateral adrenal hemorrhage. Ultrasound is the most helpful examination in distinguishing a suprarenal lesion from an intrarenal pathology and in demonstrating the morphology of an abscess. Percutaneous biopsy of supra renal mass should be avoided if pheochromocytoma is in the differential as was in our case.

KEY WORDS: Bilateral adrenal abscesses, Hypertension.

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INTRODUCTION

Bilateral adrenal abscesses are very rare in children^{1,2}. There are only two reported case in the literature^{3,4}. Ours is the third case. Adrenal abscess occurs through haematogenous route in pre-existing adrenal hemorrhage during a period of sepsis or often supportive

therapy for adrenal hemorrhage may lead to formation of adrenal abscess⁵. Non-traumatic hemorrhage of the adrenal gland is uncommon and such hemorrhage sometimes occurs prenatally as a result of difficult labor, particularly in infants of diabetic mothers or infants who are large for their gestational age or after birth due to neonatal stress such as asphyxia, hypoxia and septicemia. Hemorrhagic disorders like disseminated intravascular coagulopathy, hypoprothrombinemia may also result in adrenal hemorrhage⁶. Adrenal hemorrhage is often associated with fulminant meningococemia (Waterhouse-Friderichsen syndrome), pseudomonas infection or infection with other gram-negative bacteria. The prognosis of a patient with adrenal hemorrhage is strongly related to the primary disease than to the extent of adrenal hemorrhage. Superimposed infections further alters the mode of management which entails parenteral antibiotics therapy,

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ultrasound guided aspiration or surgical drainage.

Our case is interesting because of the fact that it was treated with multiple antibiotics for septicemia and adrenal hemorrhages were diagnosed but abscesses were not suspected.

CASE REPORT

A two months old male child, was treated with history of high grade intermittent fever without rigors and chills and high blood pressure since 9th day of life in another hospital. Various (third generation cephalosporin aminoglycosides and others) broad spectrum antibiotics were administered. The patient was born through spontaneous vaginal delivery and had birth asphyxia. There was also history of febrile fits. There were no urinary or bowel complaints. He was brought to us with bilateral lumbar masses. On examination child was sick looking, febrile and hypertensive (90/60 mmHg). On abdominal examination there were bilateral lumbar masses each of about 7 cm circumference, firm in consistency, surface was smooth with diffuse edges.

Hemoglobin of patient was 6.2 gm/dl with a total leukocyte count of elevated 16000/cmm. He had elevated Bilirubin of 8 mg/dl. Renal function tests were normal. Blood and urine cultures revealed E.coli. Prenatal ultrasound had shown bilateral suprarenal masses which were considered to be bilateral adrenal hemorrhage. Kidneys had appeared normal. After birth, repeat USG Fig. 1, showed bilateral cystic mass lesions of adrenal areas compressing upper pole of respective kidney. The lesions were filled with echomixed debris. No vascularity was noted within these lesions. Subsequently USG from three different sources were reported these lesions to be bilateral adrenal hemorrhages. On intravenous urography there was crescentic displacement of the right pelvicalyceal system and non-opacified left pelvicalyceal system. Suspicion was of bilateral adrenal masses. However, the excretory functions of both kidneys appeared normal.

The patient's blood pressure was treated with

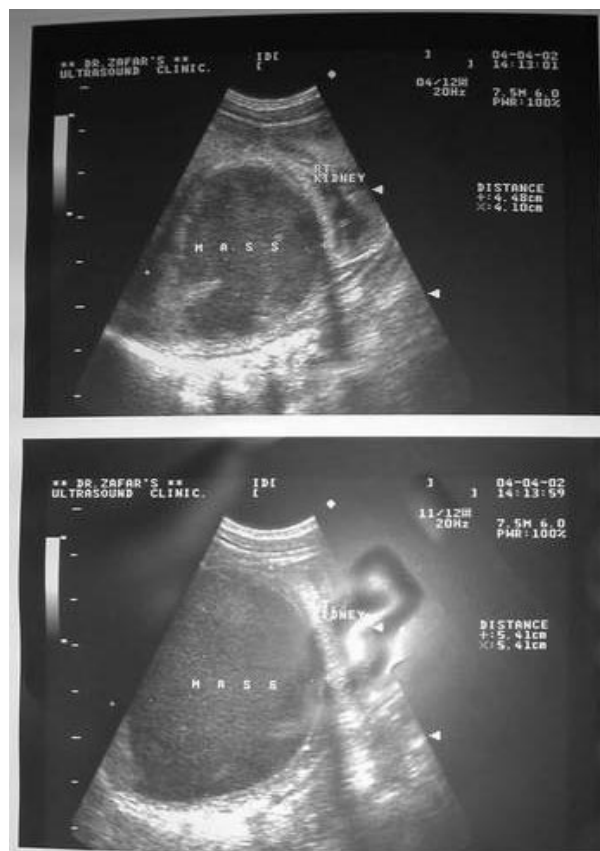


Fig. 1: Ultrasound image of right and left adrenals shows homogenous cystic masses with echo mixed contents. These were interpreted as bilateral adrenal hemorrhages. But the baby was running high hectic fever, had leucocytosis, and was hypertensive.

antihypertensives drugs (Captopril). Febrile fits were treated with phenobarbitone. Anemia was corrected by blood transfusions on two different occasions. Exploratory laprotomy was performed through transverse upper abdominal incision. On left side, there were lots of inflammatory adhesions between the spleen and lateral chest wall and between the mass and overlying gut loops. These observations lead to the possibility of some underlying inflammatory process. The adhesions were separated. The left kidney was looking normal. The mass was occupying the adrenal area. Aspiration with wide bore needle (Fig-2) revealed thick yellowish green pus which confirmed right sided adrenal abscess. The abscess was drained and gentle curettage of the cavity done to obtain tissue for histopathology. Exploration on right side revealed similar adhesions be



Fig. 2: At operation there were marked surrounding inflammatory adhesions. Diagnostic tap from both sides yielded frank yellowish greenish pus as seen here. Adrenal abscesses of both sides were drained with complete eventual recovery.

tween the mass and gut loops. Aspiration confirmed right sided adrenal abscess containing the same type of pus as was present on the left side. This Abscess was also drained. Corrugated rubber drains were placed in both cavities. Pus culture and sensitivity did not reveal any bacterial growth and histopathology did not show any adrenal tissue or any evidence of malignancy. Postoperatively, the patient recovered well and he has been seen on two different occasions. He is thriving well and has put on weight and his appetite has improved tremendously. Repeat ultrasound reveals complete resolution of abscesses.

DISCUSSION

Adrenal hemorrhage is more common in neonates than in children or adults. Bilateral massive adrenal hemorrhage is particularly associated with a stressful critical illness. Adrenal hemorrhage can lead to volume loss and shock in infants, pseudocysts, calcifications and rarely to an adrenal abscess. The clinical manifestations of adrenal abscess consists of a palpable abdominal mass associated with anemia, fever and lethargy, hypertension and elevated WB Count⁷. Elevated blood pressure is usually due to compression of renal pedicle. Adrenal

abscess could resemble a malignancy. The observation of a rapid growth and colliquation of the mass helps in distinguishing it from a malignancy^{8,9}. Sonography is the most reliable examination in distinguishing a suprarenal lesion from an intrarenal mass and in demonstrating the morphology of the abscess². Ultrasonography is recommended in the evaluation of pediatric abdominal masses. This is a safe, non-invasive, rapid and easily performed study. Color doppler and power doppler imaging allow confirmation of the avascular nature of the mass^{10,11}. On computed tomography (CT) adrenal abscess is suggested if a thick-walled cystic mass with rim enhancement is observed. On magnetic resonance imaging (MRI) adrenal abscesses often display central necrosis and rim enhancement after contrast administration. In the presence of abscess, the normal high signal characteristics of heme may be lost. CT and MRI are considered the criterion standard for imaging the adrenal in patients older than 6 months. A radionuclide renal imaging demonstrates a "rim sign" which may be suggestive of the diagnosis¹².

US or CT-directed aspiration is useful to obtain culture material in patients with sepsis who are unresponsive to antibiotics. Percutaneous biopsy should be avoided if pheochromocytoma is in the differential diagnosis and should be preceded by serologic studies to exclude a functioning tumor¹³. Early diagnosis is important, so the surgical intervention which is the only successful therapy can be kept as conservative as possible¹⁴. In a study surgical drainage, subtotal excision of the abscess wall under cover of antibiotics and preservation of the ipsilateral kidney were followed by survival⁵. In our patient bilateral abscesses persisted despite multiple broad-spectrum antibiotics and patient suffered weight loss, anemia, and loss of appetite. Hypertension, fever and febrile fits further complicated the management. But with surgical drainage rapid recovery occurred as well as the blood pressure returned to normal enabling us to discontinue the antihypertensive therapy on fourth postoperative day.

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