

Case Report

An unusual presentation of a birth trauma in a newborn: A case report

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ABSTRACT

A term, male infant weighing 4.725 kg, was born vaginally to a grand multipara, diabetic mother. The birth was difficult and needed assistance with ventose. At 48 hours of birth, the infant noted to be febrile (temperature of 38.5C) with dry skin. Shortly after that, he developed vomiting, loose motions, irritability, and seizure. Examination revealed a macrosomic, normotensive infant, with slightly prolonged capillary refill time (3 sec), clear lung fields, normal heart sounds, bilaterally palpable renal masses which was ovoid, smooth, and 10 × 5 cm in size. Other systems were normal including normal male genitalia. Investigations were normal, apart from hypoglycaemia (random blood sugar of 48 mg/dl), hyponatraemia (Na = 129 mmol/l), and hyperkalaemia (K = 6.7 mmol/l). A salt losing congenital adrenal hyperplasia was suspected and the abdominal ultrasound (U/S) scanning showed isolated bilateral adrenal haemorrhage. The infant started on hydrocortisone and fludrocortisone. In conclusion, we here report an isolated adrenal haemorrhage that caused adrenal insufficiency in an infant of diabetic mother.

Keywords:

birth trauma, Adrenal haemorrhage, Adrenal insufficiency, Infant of a diabetic mother (IDM).

INTRODUCTION

Birth Trauma is trauma encountered during birth due to traction or compression. Large for gestational age (LGA) infants are mostly at risk. The commonest trauma is soft tissue injury like cephalohematoma, caput succedaneum, subgaleal haemorrhage, and intra abdominal organ trauma, commonly liver and spleen, and rarely adrenal glands [1, 2].

Neonatal adrenal haemorrhage (NAH) is rare. It can occur secondary to many causes including abdominal trauma in large infants, perinatal hypoxia, sepsis, coagulation disorders, and, rarely, spontaneously [3, 4]. It can be bilateral, but more frequently, unilateral, and on the right side more than on the left side due to the difference in blood supply [5]. The manifestation of adrenal haemorrhage (AD) in neonates is nonspecific and has a variable clinical presentation, thus needs a high index of suspicion. It manifests as prolonged neonatal jaundice, anaemia, scrotal swelling, shock with abdominal distension, isolated hyperkalaemia or be asymptomatic [6]. Rarely, it can cause adrenal insufficiency [2, 3, 7], or death [8, 9], especially if unrecognized and treatment is delayed. Here, we report on an isolated adrenal haemorrhage that caused adrenal insufficiency in infants of diabetic mothers.

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CASE REPORT

A male infant was born at term to a grand multipara, gravida 10 para 9, diabetic mother who insisted to deliver her baby through vagina. The birth was difficult and needed assistance with ventose. The infant was large (birth weight = 4.725 kg), cried immediately, not needed any intervention, but remained tachypnoeic (respiratory rate 70–80/min) and with no retractions. Admitted to the neonatal unit as an infant of a diabetic mother (IDM) with transient tachypnoea of the newborn (TTN), and to be observed and treated for the anticipated hypoglycaemia. At around 48 hrs of birth, he was noted to be febrile (temp. 38.5°C) and had dry skin. Shortly then, he developed vomiting and loose motions. He remained conscious but irritable, and developed a generalized tonic clonic seizure (GTC), for which he received a loading dose of phenobarbitone. No obvious risk factor for neonatal bacterial infection was detected in the mother. Nevertheless, septic screening was unremarkable and the patient received broad spectrum antibiotics.

Physical examination revealed a non dysmorphic infant, pink while breathing 1L O₂/min/nasal canula, pulse 172/min, CRT = 3 sec, and blood pressure was 70/45. Chest and cardiac examination was normal. Abdominal examination revealed bilaterally palpable renal masses, ovoid, with smooth surfaces, around 10 × 5 cm in size, with normal male genitalia and scrotum, and normal other system examination.

Laboratory tests revealed normal complete blood counts. His biochemistry panel revealed glucose of 48 mg/dl, hyponatraemia (Na 129 mmol/l), hyperkalaemia (K 6.7 mmol/l), normal calcium, magnesium, phosphorus, and serum creatinine levels.

A salt losing congenital adrenal hyperplasia was suspected on the bases of his clinical features, electrolytes derangement, and the high prevalence of the disease in that vicinity (Aflaj/Saudi Arabia). The infant started on hydrocortisone injection (shifted to oral after 48 hours) plus 9-alpha-flurohydrocortisone (Florinef) tablet 0.3 mg once a day. Abdominal

ultrasound (U/S) scanning showed isolated bilateral adrenal haemorrhage. The infant responded well to treatment. Other hormones (serum cortisol, ACTH, CRH, Aldosterone and urinary 17 ketosteroid, were not done, as they were not available at that time in that vicinity.

The infant continued to be well on treatment with no decompensation. He was followed with serum electrolytes and dose adjustment for the first year, then the drugs gradually discontinued. Follow up with serum electrolytes remained normal for six months after discontinuation of therapy. Abdominal U/S scanning at one year of age revealed complete resolution of haemorrhage, but abdominal X-ray revealed a thin intermittent rim of calcification around each gland.

DISCUSSION

Neonatal adrenal haemorrhage is an increasingly recognized medical emergency after birth [1, 2]. It can occur secondary to many causes including abdominal trauma in large infants, along with perinatal hypoxia, sepsis, coagulation disorders, and rarely, spontaneously [3-6]. Adrenal haemorrhage in neonates can present as prolonged neonatal jaundice, anaemia, scrotal swelling, shock with abdominal distension, isolated hyperkalaemia or be asymptomatic, but rarely, adrenal insufficiency. There were few reports of neonatal adrenal insufficiency due to adrenal haemorrhage, however, isolated adrenal haemorrhage that causes adrenal insufficiency, in infants of diabetic mothers is extremely rare [6-9].

It is not clear whether maternal diabetes has a role in this specific medical emergency. Low threshold to performing abdominal U/S might be life saving, and would confirm the diagnosis of adrenal haemorrhage. In conclusion, we here report an isolated adrenal haemorrhage that caused adrenal insufficiency in an infant of diabetic mother.

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