Adrenal hemorrhage versus testicular torsion — a diagnostic dilemma in the neonate

Bengt Karpe and Trygve Nybonde
Department of Pediatric Surgery and Radiology, Karolinska Institute, St Göran Hospital, S-11281 Stockholm, Sweden

Abstract. Three boys aged 2–3 days were admitted to the Pediatric Surgical Clinic on suspicion of testicular torsion. One of the boys had a scrotal mass that on surgical exploration was shown to be a hematoma within the processus vaginalis beside a normal testis. An immediate laparotomy revealed an adrenal hemorrhage with rupture into the peritoneal cavity. Two further patients in whom a bluish discoloration of one hemiscrotum and groin had appeared postnatally were examined by ultrasound, which revealed a right-sided suprarenal mass. It is concluded that a scrotal mass or hematoma in the neonate may be the only symptom of an adrenal hemorrhage. When a scrotal mass is found an intra-abdominal hemorrhage into an inguinal hernia should be considered and if possible ultrasonographically examined before surgical exploration is performed on the suspicion of testicular torsion or tumor. Furthermore, a scrotal or inguinal hematoma should lead to an ultrasound examination of the retroperitoneal organs, especially of the adrenal glands.

Key words: Adrenal hemorrhage — Neonate — Acute scrotum — Ultrasonography

Introduction

Little attention seems to have been paid to the nature and origin of a scrotal hematoma in newborn boys [5]. We report three cases that were referred on suspicion of testicular torsion. The first patient, who presented with a scrotal mass, was operated upon with surgical exploration of the mass followed immediately by laparotomy before the diagnosis of a suprarenal hemorrhage was verified. The other two had a unilateral bluish discoloration of one hemiscrotum as the only symptom. Ultrasonography of the adrenal glands revealed a suprarenal mass.

Case reports

Case 1. A 3-day-old boy was admitted to the Pediatric Surgical Clinic because of right-sided acute scrotum. He was born at term as the first child of a 37-year-old Assyrian immigrant. He had a normal delivery and Apgar score. His birth weight was 3,750 g. The umbilical cord encircled the neck. After 3 uneventful days the right hemiscrotum became firm and swollen. Testicular torsion was suspected and the right testis was surgically explored and found to be normal. The processus vaginalis contained blood that continued to ooze from the peritoneal cavity. A laparotomy was performed and a right-sided suprarenal hemorrhage with rupture into the peritoneal cavity was found to be the source of the blood. The left adrenal gland was normal on inspection. Laboratory findings: hemoglobin 170 g/l; total bilirubin 249 µmol/l diminishing with time. Urinary excretion of catecholamines was normal. A postoperative ultrasonographic examination showed a suprarenal tumor with a diameter of 26 mm. The echogenicity was consistent with that of a hematoma and changed gradually with time as if liquefaction had occurred. At 8 months of age the tumor had disappeared and dense echoes suggesting calcifications were seen.

Case 2. This second child of a Chilean mother aged 24 years was delivered normally at term with a birth weight of 4,220 g and a normal Apgar score. On routine postnatal examination a systolic cardiac murmur was noted and a tetralogy of Fallot with an infundibular stenosis of the pulmonary artery was later confirmed. On the 3rd day of life a bluish discoloration appeared in the right hemiscrotum and testicular torsion was suspected (Fig. 1). On admission the testis seemed normal on palpation, and since there was an obvious hematoma in the scrotal wall an ultrasound examination was performed to search for its origin. A focal mass was found in the right adrenal gland suggesting a hematoma. No treatment was initiated since the boy had no symptoms from the bleeding or
the cardiac abnormality. Laboratory findings on the day of admission: hemoglobin 190 g/l; total bilirubin 208 μmol/l; platelet count 141 × 10^9/l; activated partial thromboplastin time 32 s. The urinary excretion of catecholamines was later found to be normal.

The development of the adrenal lesion was followed by serial ultrasonographic examinations at the ages of 6, 12, 25, and 70 days (Fig. 2a–d). A change from an echogenic to an echolucent pattern was seen followed by complete regression of the mass at the last examination. An ultrasonographic examination of the testes performed at 7 days of age showed normal, homogeneous, symmetrical testicular parenchyma.

Case 3. This boy was the second child of a 28-year-old Asian mother, born at term after only 3 h of labor with the help of external pressure because of shoulder dystocia. The mother sustained a partial rupture of the external anal sphincter. The Apgar score was excellent; birth weight was 4,050 g. At 1 day of age a bluish discoloration was noted in the left groin and hemiscrotum and the boy was referred for examination of a suspected acute scrotum. On admission the boy was well and

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Fig. 1. Hematoma of the right hemiscrotum (case 2)

Fig. 2. Right parasagittal views through the kidney and adrenal gland of case 2: a Age 6 days showing focal adrenal echogenic mass (M), the remaining normal part of the adrenal gland (arrows), and the flattened upper pole of the kidney (K). b Age 12 days: mass unchanged in size but echolucent suggesting liquefaction of a hematoma. c Age 25 days: diminishing size of the mass is seen with smooth central echoes consistent with an organizing hematoma. The kidney has returned to normal shape. d Age 70 days: hematoma remains as a small, echogenic suprarenal lesion (arrow). Ultrasonographic examinations were performed with ATL Mark 100 equipment using a 5 MHz mechanical sector transducer.