CASE REPORT

Neonatal Adrenal Hemorrhage Associated with Scrotal Hematoma: An Unusual Case Report and Literature Review

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Received Feb 16, 2011; received in revised form Apr 6, 2011; accepted Apr 15, 2011

Neonatal adrenal hemorrhage (NAH) is rare and is found in only 0.2% of newborns. Scrotal hematoma (SH) in newborns is also rare. NAH associated with SH is extremely rare. Herein, we report a baby boy who presented with SH; after ultrasonography examinations, the diagnosis of NAH associated with SH was made. He received conservative treatment only. From our experience and that of others, appropriate integration of clinical information, physical examination and the results of abdominal and scrotal ultrasonography can achieve the accurate diagnosis of NAH associated with SH. This association allows conservative treatment that avoids unnecessary surgical exploration.

1. Introduction

Neonatal adrenal hemorrhage (NAH) is an unusual condition that affects 0.2% of newborns. Scrotal hematoma (SH) in newborns is also rare. NAH associated with SH is extremely rare. To our knowledge, only 29 cases have been reported in the literature.3–7 Herein, we report an unusual case of NAH associated with SH. NAH and SH were diagnosed by ultrasonography and treated by conservative treatment, avoiding unnecessary surgical exploration. We also review the available literature about the diagnosis and treatment of NAH and SH.

2. Case Report

A baby boy with vertex presentation was delivered by vacuum extraction at 37 weeks and 1 day gestation. The
pregnancy was uneventful. His birth weight was 2500 g. Apgar scores were seven and eight at 1 minute and 5 minutes, respectively. Heart murmur was noted, and congenital heart disease was suspected.

The patient was transferred to the neonatal intensive care unit 24 hours after birth because of cyanotic lips and dyspnea. Right scrotal swelling with bluish discoloration (Figure 1) was noted 56 hours after birth.

Vital signs showed pulse 140/min, respiration 40/min, and body temperature 36.9°C. Physical examination revealed poor general appearance, hypoactive, icteric sclera and bluish discoloration of the right hemiscrotum. Blood routine showed hemoglobin 11.8 g/dL, hematocrit 32.4%, white blood cells 12,700/mm³, and platelets 128,000/mm³. Biochemistry revealed total bilirubin 10.71 mg/dL, direct bilirubin 0.43 mg/dL, other signs were normal. Prothrombin time and activated partial thromboplastin time were normal. The patient and his mother were both blood group O, Rh (+).

Scrotal ultrasonography showed fluid collection in the right hemiscrotum (Figure 2). Abdominal ultrasonography and computed tomography, performed 4 days after birth, revealed right adrenal hemorrhage (Figure 3); the diagnosis of NAH associated with SH was made on that basis. The patient underwent conservative treatment only, and the hematoma gradually decreased in size and resolved 2 weeks after birth. Owing to Tetralogy of Fallot being diagnosed, he was referred to the medical center and underwent corrective surgery at the age of 8 months.

3. Discussion

NAH is uncommon, accounting for 0.2% of newborns¹ and 0.05–0.14% of autopsy cases.⁸ It usually occurs at birth or during the first days following birth.⁹,¹⁰ It can be associated with birth trauma, large birth weight, or neonatal course complicated by hypoxia and asphyxia, hypotension, or coagulopathy.¹¹,¹² It can also occur spontaneously.¹²,¹³

Clinical manifestations of NAH are variable, depending on the degree and rate of hemorrhage, as well as the amount of adrenal cortex compromised by hemorrhage.¹⁴

Figure 1  Swelling and bluish discoloration of the patient’s right groin and hemiscrotum.

The most frequent clinical manifestations are anemia, jaundice, abdominal distention, and palpable flank mass.¹,¹⁴ Some cases are asymptomatic, with the diagnosis made only incidentally.¹⁵,¹⁶

SH is an extremely rare manifestation of NAH. Most patients present scrotal swelling with bluish discoloration. To our knowledge, only 29 cases with NAH and SH have been reported in the literature,³–⁷ but some of these received unnecessary operation.¹²,¹⁶–²³ Therefore, differential diagnosis between NAH and other causes of scrotal swelling and bluish discoloration in newborns is mandatory to avoid unnecessary surgical exploration.

Scrotal swelling with/without bluish discoloration in newborns can arise from hydrocele, inguinal hernia, orchitis, meconium peritonitis, testicular trauma, testicular tumor and testicular torsion.¹ Intra-abdominal hemorrhage resulting from perinatal asphyxia, trauma, sepsis and coagulation abnormalities can also be causes SH.²,²⁴,²⁵ Rare cases were idiopathic.³

Of the 29 cases of NAH and SH reported in the literature (Table 1),³–⁷ nine received unnecessary surgical exploration.¹²,¹⁶–²³ In all the cases managed surgically, the

Figure 2  Scrotal ultrasonography showed right scrotal hematoma (arrow).

Figure 3  Abdominal computed tomography showed a lobulated low-density lesion, 5.8 × 3.5 cm² in size, over the right suprarenal region.
Table 1 Neonatal adrenal hemorrhage associated with scrotal hematoma: 29 cases reported in the literature.

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<th>Author (year)</th>
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decision to perform a surgical intervention was based only on the physical examination leading to the suspicion of testicular torsion.

Yeh et al reported that NAH and testicular torsion are the two most common causes of scrotal swelling with bluish discoloration in newborns. From their experience and that of others, we know that testicular torsion in the perinatal period is unusual, physical examination reveals firm, erythematous swollen testicles that do not transmit light, and ultrasonography shows an enlarged testis and epididymis that can assist in the diagnosis. Kata et al’s report has also concluded that ultrasonography does not necessitate radiation exposure, can be easily applied and repeated, and does not require sedation and so should be the most appropriate method for determining the etiology and avoiding unnecessary surgical exploration.

In conclusion, in a newborn with scrotal swelling and bluish discoloration, the possibility of NAH association with SH should be considered. Appropriate integration of clinical information, physical examination and results of abdominal and scrotal ultrasonography is necessary to achieve the accurate diagnosis. This association allows conservative treatment avoiding unnecessary surgical exploration.

References