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BRIEF COMMUNICATION

Scrotal Hematoma as a Sign of Subcapsular Liver Hematoma in a Preterm Infant

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1. Introduction

Neonatal subcapsular liver hematoma (SLH) occurs in ~15% of neonates due to several risk factors, including trauma, prematurity, tracheal intubation, and umbilical venous catheterization.[1–4] Previously, only one full-term infant has been reported with isolated scrotal wall hematoma as a result of SLH in the medical literature.[1] This is the first case report of an isolated scrotal hematoma in a preterm infant due to SLH.

2. Case Report

A 1740-g boy was born at 32 weeks of gestation to a 23-year-old woman by cesarean delivery because of ablatio placentae and fetal bradycardia. As he was hypotonic and had inadequate respiratory effort after birth, positive pressure ventilation and supplemental oxygen therapy were initiated. Despite this treatment, the infant's heart rate remained < 60 beats/min, he was intubated and cardiac compression was performed.

On admission, his physical examination was normal, except for hypotonia. Arterial blood gas analysis showed marked metabolic acidosis. The prothrombin time and active partial thromboplastin time were found to be prolonged. Respiratory support and fresh frozen plasma infusions were administered. He was catheterized through the umbilical vein. At age 3 days, the patient was extubated.

At age 5 days, pallor, tachycardia, tachypnea, low urine output, bluish discoloration, and swelling in the right hemiscrotum and groin were noticed. The hemoglobin level dropped from 15.7 g/dL to 8.2 g/dL. The platelet count and coagulation profile were all within normal limits at the time of evaluation. Scrotal swelling and discoloration were seen on the right side, and acute torsion of the spermatic cord was suspected. Scrotal ultrasound demonstrated a partially liquefied hematoma that extended from the right inguinal canal to the right hemiscrotum (Figure 1A). Echogenicity and vascularity of both testes were normal. Abdominal ultrasound showed a large echogenic SLH (Figure 1B). Intraperitoneal and retroperitoneal hemorrhages were not clearly visible on the first abdominal sonography. Both adrenal glands were normal. Abdominal magnetic resonance

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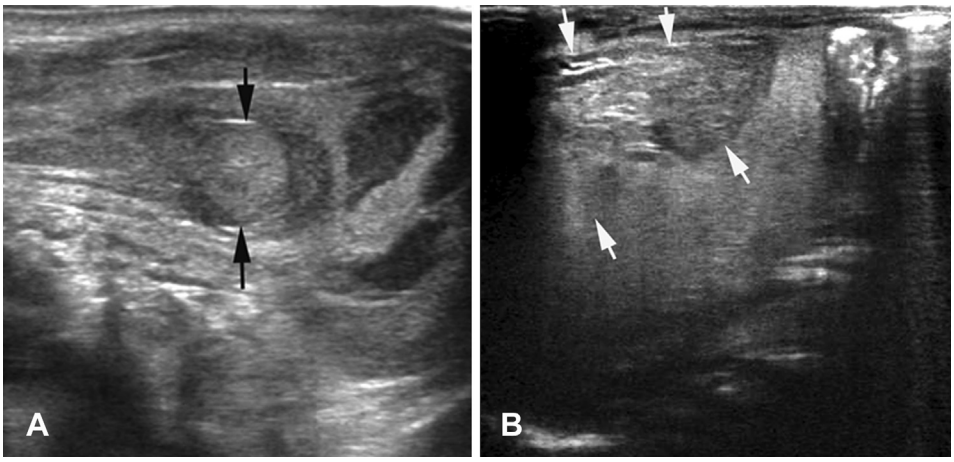

Figure 1 (A) Scrotal sonography scan demonstrates partially liquefied hematoma extending from the right inguinal canal to the right hemiscrotum. The right testis demonstrates normal size, echogenicity (arrows), and vascularity. (B) Abdominal sonography scan shows echogenic subcapsular liver hematoma.

imaging (MRI) showed SLH with minimal intraperitoneal and extraperitoneal extensions.

Diagnosis of scrotal hematoma as a result of SLH was considered. On follow up, the clinical condition of the baby improved gradually. At age 14 days, the swelling and bluish discoloration of the scrotum and groin were resolved. Follow-up abdominal sonography showed liquefaction of the hematoma. The patient was healthy and eventually discharged at age 28 days.

3. Discussion

Although SLH is a rare condition in neonates, it may be life threatening due to rupture of the hematoma.[4]

There are several predisposing factors for SLH. Trauma is considered the main cause of SLH in neonates. Other risk factors are prematurity or postmaturity; thrombocytopenia; coagulation disorders; hypoxia; asphyxia; physical manipulation, including external cardiac massage, tracheal intubation, umbilical venous catheterization, and the insertion of a chest drain.[2,4,5] Although there were many risk factors that may have contributed to SLH occurrence in our patient, we believe that external cardiac massage was the most likely predisposing factor.

If the hematoma is ruptured and reaches the peritoneal cavity, blood may extend into the scrotum through a patent processus vaginalis or by dissection of the tissue of the retroperitoneum. Once the hematoma reaches the inguinal canal and scrotum, inguinoscrotal swelling and bluish discoloration of the hemiscrotum can be observed.[4,6]

Sonography of both the testes and the abdomen is essential for the differential diagnosis of scrotal swelling and discoloration to avoid unnecessary surgical intervention.[3,6] Testicular Doppler sonography should be performed to rule out testicular torsion, which requires urgent surgical intervention[6]. In our case, a large, echogenic SLH was diagnosed, but the intraperitoneal and retroperitoneal hemorrhage was not clearly visible on the first abdominal sonography. Abdominal MRI showed the SLH, but it also showed minimal intraperitoneal and retroperitoneal hemorrhage that was missed by the first sonography. Although minimal fluid accumulations can be detected by abdominal sonography, hemorrhage is usually isoechoic and hyperechoic in echogenicity on the first examination and, if it is minimal, it may be missed or not clearly seen. However, hemorrhage is hyperintense on T1-weighted and T2-weighted images and even minimal hemorrhage can be easily detected because of its high signal intensity.

This is the first case of an isolated scrotal hematoma due to SLH in a preterm infant. In neonates with inguinoscrotal swelling and bluish discoloration of the hemiscrotum, an ultrasonographic evaluation of both the scrotum and the abdomen should be performed in order to detect etiology and to avoid unnecessary surgical intervention of the scrotum.

Conflict of interest

All authors have no conflicts of interest to declare.

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