

Rectus sheath hematoma in a macrosomic neonate following difficult delivery. Case report

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ABSTRACT

Macrosomia is a risk factor for birth injuries and is associated with neonatal morbidity and mortality. Cephalohematoma and clavicular fracture are the most frequent birth injuries. Intraabdominal injuries are uncommon birth injuries. Rectus sheath hematoma (RSH) is an accumulation of blood in the sheath of rectus abdominis muscle. It is associated with trauma, operations and anticoagulant therapy, especially in adults and elders. We present a macrosomic male neonate with difficult vaginal delivery, who had in the physical examination periumbilical ecchymose of 1x1 cm and a parietal cephalohematoma of 1x1 cm. The abdominal ultrasonogram and the computed tomography scan of the abdomen showed a 7x4x2 cm right rectus sheath hematoma.

Key words: rectus sheath hematoma, macrosomia fetal, birth injury, neonates.

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INTRODUCTION

Birth injuries are a significant cause of neonatal morbidity and mortality. Factors that increase the risk of birth injuries include macrosomia (fetal weight greater than 4000 g), maternal obesity, breech presentation, operative vaginal delivery (ie, the use of forceps or vacuum during delivery), small maternal size, and the presence of maternal pelvic anomalies. The

overall incidence of birth injuries is about 2 and 1.1 percent in singleton vaginal and cesarean deliveries, respectively. Intra-abdominal birth trauma is uncommon and primarily consists of rupture or subcapsular hemorrhage into the liver, spleen, and adrenal gland.¹

Rectus sheath hematoma (RSH) is the accumulation of blood in the sheath of rectus abdominis muscle and it can develop owing to direct damage to the muscle itself or tearing in one of the superior or inferior epigastric vessels that run along its posterior aspect. The etiology includes trauma, operations, subcutaneous drug injections, anticoagulant therapy, hematological diseases, hypertension, coughing, physical exercise and pregnancy; it rarely occurs spontaneously. Rectus sheath hematoma is a rarely seen but important disease causing abdominal pain in adults.²

We reported a macrosomic neonate with rectus sheath hematoma following difficult delivery.

Case report

A 4530 g male infant was born at 40 weeks' gestation to a 25-year-old gravida 2 para 2 mother with vaginal delivery; the Apgar scores were at first and 5th minutes 7 and 9, respectively. It was a difficult delivery; extraction maneuvers were performed, but forceps or vacuum were not used. The mother had no coagulopathy in tests and she was not receiving any anticoagulants. Physical examination just after delivery revealed a periumbilical ecchymose of 1x1 cm and a cephalohematoma of 1x1 cm on his parietooccipital area. At 3 hours of life the hemoglobin level was 13.6 g/dL, hematocrit 41%, platelet 191000 /UL, activated partial thromboplastin time (aPTT) 27.5 sec, prothrombin time (PT) 15.7 sec, international normalized ratio (INR) 1.23 and total bilirubin 8.9 mg/dl. The other biochemical tests were normal. An abdominal ultrasonogram showed a 66x16 mm mass with fluid levels between umbilicus and inferior sternum, and it displaced left and right liver lobes to posterior (*Figure 1*). A follow-up computed tomography (CT) scan of the abdomen showed a

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7x4x2 cm right rectus sheath hematoma (Figure 2).

A superficial tissue ultrasonogram showed a 9x9 mm cephalohematoma on the parietooccipital area. Complete blood cell count examination on the 24th hour and 36th hour of admission revealed hemoglobin values of 12.4 g/dl and 14.3 g/dl, respectively, while total bilirubin levels were at 10.2 mg/dl and 10.8 mg/dl, respectively. Breastfeeding was initiated after birth and no other treatment was required. We follow-up

the patient frequently by physical examination, complete blood count and bilirubin levels without abnormal findings. He discharged home on his 5th day. He is 5 months old and has no pathology in his physical examination and abdominal ultrasonogram.

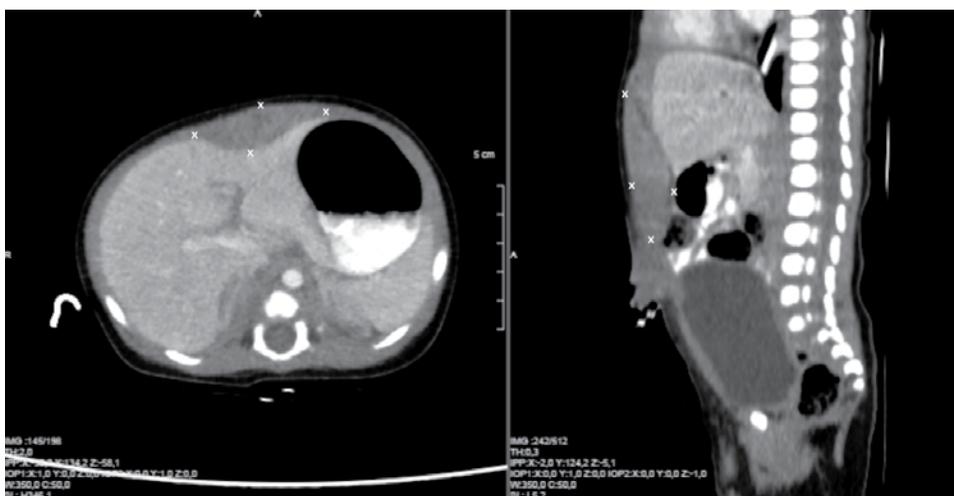
DISCUSSION

Rate of birth trauma is about 2% in normal vaginal delivery with cephalic presentation and

FIGURE 1. Gray-scale US shows hypochoic hematoma located in front of the left lobe of liver (between cursors)



FIGURE 2. Axial and coronal CT scan of the abdomen show hematoma of rectus sheath



1.1% in cesarean section.³ Birth injuries include soft tissue injuries (bruises, petechiae, subcutaneous fat necrosis, ulceration, and perforation), cephalohematoma, caput succedaneum, spontaneous intracranial hemorrhage, spinal cord injury, brachial plexus injury (Erb's palsy and Klumpke's paralysis), facial nerve palsy, musculoskeletal injury (clavicular fracture and torticollis), and hypoxic-ischemic injury.⁴ In most studies cephalohematoma and clavicular fracture were the most frequent birth injuries.⁵ The incidence of birth injuries has declined with improvements in obstetrical care and prenatal diagnosis. However macrosomia is an important risk factor of birth injury; intra-abdominal birth trauma is uncommon.¹ Ultrasonography is the best modality to diagnose intra-abdominal birth injuries and can be performed at the bedside. Computed tomography can also provide useful diagnostic information.

The patient must be observed in regards of possible complications such as jaundice, hypovolemia, hypovolemic shock and the possible treatments for each condition. RSH treatment could be conservative or invasive. Treatment choice is determined by the patient's condition. Main therapy is conservative management. Conservative treatment consists of rest, analgesia, management of predisposing factors, compression of hematoma, ice treatment and if needed reversal of anticoagulation, volume expansion or blood transfusion, and phototherapy for jaundice.¹ Invasive hemorrhage control of RSH should be considered in patients hemodynamically unstable that don't respond to volume expansion, with enlarging hematomas, patients that show severe peritoneal irritation or

signs of abdominal compartment syndrome.⁶

We follow-up this neonate, breastfeeding was initiated after birth and neither conservative nor invasive management was required.

However RSH is associated with trauma, operations, subcutaneous drug injections and anticoagulant therapy in elders we did not encounter any neonatal case in the literature.^{7,8}

To the best of our knowledge this is the first case of RSH in an injured macrosomic neonate. We aimed to present this case for emphasising RSH as a birth injury in a macrosomic baby. Health care providers especially caring for newborns must keep in mind this rare injury in macrosomic neonates. ■

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