Haemorrhagic Ascites in New Born Infants

Hazratullah Khattak,* M.B.,B.S., F.R.C.S.;
Fazal Rehman,** M.B.,B.S., F.R.C.S.,
Postgraduate Medical Institute,
Lady Reading Hospital,
Peshawar, Pakistan,
and
D.A. Lloyd,*** F.R.C.S.,
Liverpool Children's Hospital,
Alder Hey, Liverpool, U.K.

Index Words

Neonatal haemorrhagic ascites, congenital hepatoblastoma; ruptured urinary bladder; posterior urethral valves.

Abstract

We report two newborn infants with non-traumatic haemorrhagic ascites. The source of bleeding in one was necrotic undifferentiated hepatoblastoma. The other had bloody urinary ascites due to rupture of the bladder following obstruction by posterior urethral valves.

Introduction

Haemorrhagic ascites is a rare finding in the newborn infant. We report two patients with this condition, the result of a different non-traumatic cause in each case.

Patients

* Senior Registrar;
** Assistant Professor,
Department of Paediatric Surgery, Postgraduate Medical Institute, Lady Reading Hospital, Peshawar.
*** Consultant Paediatric Surgeon, Department of Paediatric Surgery, Liverpool Children's Hospital, Alder Hey, Liverpool, U.K.

Patient 1

A female infant had distension of the abdomen detected on prenatal ultrasound at 28 weeks gestation. Increasing distention associated with foetal distress led to caesarean section at 37 weeks. Birth weight was 3 Kg. There was no birth trauma. Following delivery, the severe abdominal distension caused respiratory distress, for which mechanical ventilation was required. There was no evidence of hydrops foetalis. Meconium and urine were passed immediately after birth. The full blood count, platelet count, blood urea, electrolytes, liver function profile and coagulation screen were normal. Chest and abdominal radiographs showed abdominal ascites with marked elavation of the diaphragm. An ultrasound scan confirmed massive ascites and a possible subhepatic mass. Paracentesis yielded 420 ml of heavily blood stained fluid with the consistency of plasma. The ascitic fluid amylase was negative. Because of severe abdominal distension, paracentesis was repeated four times over the next 8 days for a total of 1,120 ml fluid which was consistently blood stained. In the absence of a specific indication, laparotomy was not undertaken. In spite of supportive therapy her condition progressively deteriorated leading to terminal multiple organ failure.

At autopsy the source of bleeding was found to be necrotic tumour in the left lobe of the liver. There were extensive intraperitoneal metastases, and the inferior vena cava and umbilical vein were obstructed by tumour. The histopathological diagnosis was undifferentiated hepatoblastoma.

Patient 2

A male infant born at 37 weeks gestation by normal vaginal delivery after an uncomplicated pregnancy, passed meconium at birth but did not pass urine for 36 hours. Distension of the abdomen was noted at age 1 hour and progressively increased thereafter. Examination at 16 hours revealed gross ascites in an otherwise normal baby. The kidneys were not palpable. Paracentesis yielded heavily blood-stained fluid. The complete blood count, platelet count, blood urea, electrolytes, liver function profile and coagulation screen were normal. The serum creatinine was elevated at 146 mg/dl. Ultrasound examination of the abdomen demonstrated ascites, minimal

pelvi-calyceal dilatation of both kidneys, normal ureters and a smooth thick-walled urinary bladder. The dome of the bladder was ruptured and a large clot was visualised in the defect. An ascending urethrogram demonstrated the ruptured bladder with extravasation of contrast into the peritoneal cavity. Laparotomy confirmed the presence of blood-stained urinary ascites and rupture of the bladder which was repaired with suprapubic catheter drainage. Post-operative cysto-urethrography showed Type 1 posterior urethral valves, which were successfully treated.

Discussion

Haemorrhagic ascites in the newborn infant is usually the result of birth trauma or iatrogenic injury[1,2]. Non-traumatic causes of intraperitoneal bleeding are very rare. For example, bleeding from inflamed omentum adherent to a pyloric duplication containing pancreatic tissue has been reported[3]. In both our patients, trauma was initially the suspected cause of the bloody ascitic fluid. However, the history and clinical findings did not support this and the aspirated fluid resembled blood-stained ascitic fluid rather than pure blood. Blood coagulation was normal and there was no evidence that the bleeding had been caused by the paracentesis procedure. In the first patient, the ascites resulted from the diffuse intra-abdominal tumour and inferior vena caval obstruction and the bleeding appeared to originate from the necrotic liver tumour. This is a unique finding not included in a review of neonatal ascites by Mechin[4].

Urinary ascites is a well known complication of bladder obstruction by posterior urethral valves. The mechanism is thought to be rupture of the renal calyces[5], but bladder rupture may also occur. Other causes of rupture of the bladder include iatrogenic injury and spontaneous rupture without apparent cause[6,7]. Typically the extravasated urine is not blood stained. In our patient there was no evidence of trauma or a bleeding disorder. The bleeding originated from the disrupted bladder wall.

When haemorrhagic ascites is identified in the newborn infant, an abdominal injury must be excluded. Abdominal ultrasound scanning is valuable for assessing the abdominal and pelvic organs and when the cause of bleeding

remains obscure, computerised tomography may be helpful. The ascitic fluid obtained at paracentesis should be screened for malignant cells.

References

1. Miller, B.M., Yoon, J.J., Kim, M.H. et al. Intrapartum rupture of the falciform ligament and umbilical vein. Clin. Paed. 1987, 26: 316-318.

2. Kimmelstiel, F.M., Holgersen, L.O., Dudell, G.G. Massive haemoperitoneum following suprapubic bladder aspiration. J. Paed. Surg. 1986, 21: 911-912.

3. Novak, R.W., Boeckman, C.R. Pyloric duplication presenting with haemorrhagic ascities. Clin Paed. (Phila). 1983, 22: 386-388

4. Machin, G.A. Diseases causing fetal and neonatal ascites. Paed. Pathology. 1985, 4: 195-211.

5. Greenfield, S.P., Hensle, T.W., Berdon, W.E. et al. Urinary extravasation in the newborn male with posterior urethral valves. J. Paed. Surg. 1982, 17: 751-756.

6. Muller, A.L., Sharp, L., Anderson, E.V. and Emlet, J.R. Rupture of the bladder in the newborn. J. Urol. 1960, 83: 630-633.

7. Trulock, T.S., Finnerty, D.P., Woodard, J.R. Neonatal bladder rupture: case report and review of literature. J. Urol. 1985, 133: 271-273.