Case report

Spontaneous rupture of a congenital umbilical hernia in an infant: a rare complication

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Abstract:
Umbilical hernia is not uncommon in children. Most of these hernias close spontaneously as the children grows; they are often remarkably free from complications. Though in no way affecting the accepted principles of management of umbilical hernia, we feel that this case of spontaneous rupture is worth recording. To report a case of spontaneous rupture of a congenital umbilical hernia with evisceration of small intestines in a 45-day-old 3.5 kg female infant.
Key words: umbilical hernia; spontaneous; rupture; evisceration

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Introduction

Congenital umbilical hernia is a congenital malformation, not uncommon in infants, male: female ratio is roughly equal [1]. Although sometimes quite large, most umbilical hernias in children resolve on their own without any treatment if they are asymptomatic, reducible, and don't enlarge by around the age of 2-3 years [2]. When the fascial defect is small (< 1 or 2 cm), 90% close within 3 years, some sources state 85% of all umbilical hernias, regardless of size [3] Complications of an umbilical hernia that require immediate surgical intervention are incarceration or strangulation and in extremely rare cases, rupture, when the skin over the hernia breaks open, exposing the tissue inside the hernia sac. These complications are rare as the underlying defect in the abdominal wall is larger than in inguinal hernia of the newborn. The size of the base of the herniated tissue is inversely correlated with risk of strangulation (i.e. narrow base is more likely to strangulate). In developing countries, patients with emergency surgical problems present late, often after complications have developed. We report a case of spontaneous rupture of umbilical hernia in 45-day-old girl child with evisceration of small intestine.

Case report

A 45-day-old girl child had a congenital umbilical hernia. The hernia was easily reducible and treatment was not thought to be necessary by the parents. On the day of rupture, hernia appeared quite normal. It suddenly developed crying episodes after feed. Her mother noticed that the umbilical swelling which was reducible before had became irreducible (couldn't push part of the bulge back in the belly). Crying episodes became more frequent and the swelling had quickly enlarged and tense as a result of an obstructed loop of bowel within it, abdomen became increasingly distended. Redness appeared at the inferior aspect of the skin of the swelling. Severe vomiting ensued this forced the parents to take a

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(a) (b) (c)

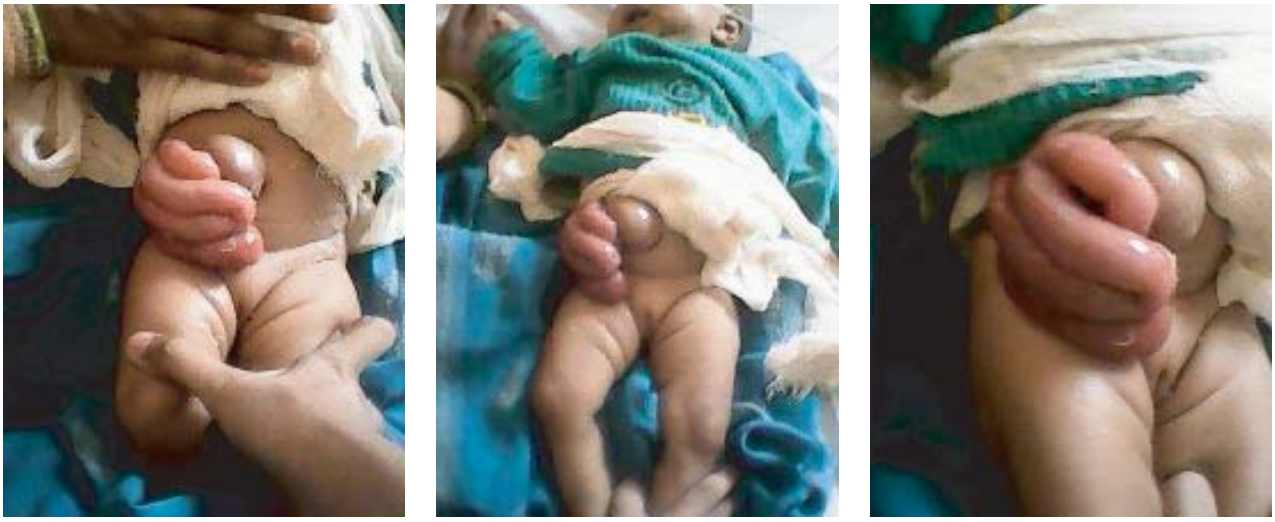

Figure 1: Ruptured umbilical hernia with eviscerated bowel in a 45-day-old girl child shown in Figure 1 (a, b, c)

medical opinion. With an intravenous support at a local hospital, baby was referred to our institute for further management. On the way to hospital, crying episodes caused spontaneous rupture of the thinned out umbilical skin with subsequent evisceration of loops of bowel through the defect. The infant was rushed to our department. Clinically patient was stable except for the ruptured umbilical hernia with eviscerated ileum. The surrounding tissues appeared edematous, but there was no evidence of infection or necrosis. Careful inquiry failed to elicit any other cause for the rupture except for history of a paroxysm of crying probably due to incarceration of the bowel during morning hours. There was no suggestion of trauma by the napkin-pin. An assessment of spontaneous rupture of umbilical hernia was made. She was resuscitated with intravenous fluid, nasogastric tube suction and the eviscerated bowel was covered with saline soaked sterile gauze along with sedation, analgesics and antibiotics. Laboratory investigations were sent and patient was shifted to emergency operation.

At laparotomy, eviscerated ileal loops were found to be viable but congested. They were returned into the peritoneal cavity after toileting with warm normal saline. Rest of the viscera looked normal. The hernia sac and overlying skin were excised. Repair of the umbilical hernia was carried out and the abdomen was closed in layers. Post operative period was uneventful.

Discussion:

Spontaneous rupture of an umbilical hernia is extremely rare in children and occurs predominantly in cirrhotic patients [3]. The first reported case of spontaneous rupture of an umbilical hernia from ascites was reported by Mixter in 1901[4]. MacLean records spontaneous rupture in a 3-months-old infant after a bout of crying [5]. Ninh and Hoanh reported a similar case in a malnourished infant of 20 days [6].Strange recorded a spontaneous rupture in a Chinese child of 3 months, with death on the third day after operation [7]. Extrusion of intestine occurred through the wide umbilical ring and the child died. Brandon and Whitehouse reported an infant brought to hospital and was found to have a small triangular piece of omentum protruding through apparently normal skin at the apex of the hernia. The surrounding tissues appeared normal, and there was no evidence of infection or necrosis [8].Three Nigerian infants with spontaneous rupture of an umbilical hernia, who presented to the hospital between 1983 and 1996, were described by Ahmed [9]. In two, hernias developed in the neonatal period following umbilical sepsis. Rupture occurred at the ages of 2 and 3 months, respectively, and was probably precipitated by raised intra-abdominal pressure resulting from excessive crying. The third child had a large, ulcerated umbilical hernia which ruptured at 10 months and was precipitated by damage to the overlying skin. The children were treated successfully [9]. Jamabo reported a spontaneous rupture of an umbilical hernia with evisceration of small intestines in a 16-year-old girl aggravated by severe retching and vomiting [10]

Spontaneous rupture of umbilical her-

nia in infants is precipitated by a sudden rise in intra abdominal pressure or damage to overlaying skin. [9]. In our patient, rupture was probably precipitated by incarceration of the bowel leading to increased crying episodes which further led to sudden rise in intra abdominal pressure and because overlying skin which was stretched and thinned out. Congenital umbilical hernia is remarkably free from complications, with the most common being incarceration. Rupture of congenital umbilical hernia being extremely rare in world more so in India. The presence of discolouration, ulceration or a rapid increase in size of the umbilical hernia signals impending rupture .The condition can develop from failure of the fresh umbilical wound or weak scar to withstand the stress of raised intra-abdominal pressure associated with coughing, vomiting, or defecation in early life. The precipitating factors for rupture may also include local trauma.

Rupture of congenital umbilical hernia must be distinguished from gastroschisis and ruptured omphalocele as they are the two most common congenital abdominal wall defects, but the resuscitation of such a child is similar to the one done for last two conditions. Primarily with prevention of heat losses from the open abdominal cavity and exposed bowel by wrapping the herniated bowel in warm saline-soaked gauze, drying the baby and the use of radiant heat warmer. The child should be positioned on the right side to prevent kinking of the mesentery and resultant bowel ischemia.

Conclusion

Complications associated with umbilical hernia are not common but justify prevention by early repair of large umbilical hernias with small fascial defects.The rarity of serious complications gives additional support to the present policy of withholding surgery and awaiting natural cure of umbilical hernia during the first four to five years of life.

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