MedCrave
Step into the World of Research

Journal of Pediatrics & Neonatal Care

Case Report

Open Access

CrossMark

Uncommon complication of pediatric umbilical hernia: spontaneous evisceration: case report and literature review

Abstract

The umbilical hernia is common in children. Most of the cases have a spontaneous regression around the age of 3 years. Complications are very rare and thus surgery is not routinely indicated before the age of 3 years. We report an exceptional case of spontaneous rupture of an umbilical hernia with emphasis on the management of this rare complication and a literature review of similar cases.

Keywords: umbilical hernia, children, spontaneous evisceration

Volume 5 Issue 6 - 2016

Taieb Chouikh,[1] Anis Echaieb,[1] Dahmane Belkhir,[1] Georges Audry,[2] Claire Raquillet[1]

[1]Department of Paediatric Surgery, Hopital Robert Ballanger Aulnay Sous bois, France

[2]Department of Paediatric Surgery, Hopital Armand Trousseau Paris, France

Correspondence: Taieb Chouikh MD, Pediatric Surgeon, Department Of Pediatric Surgery Hopital Robert Ballanger Aulnay Sous bois France, Hopital Robert Ballanger, BD Robert Ballanger, Service de chirurgie, pédiatrique, Aulnay Sous Bois 93600, France, Email taiebchouikh@gmail.com

Received: July 20, 2016 | **Published:** November 11, 2016

Introduction

An umbilical hernia is not exceptional in first years of life. It is estimated that one out of six children has an umbilical hernia. Most of the cases resolve without any treatment if they are asymptomatic, and do not enlarge by the age of 2-3 years.[1] When the defect is small (<1 or 2 cm), 90% of all umbilical hernias close spontaneously within three years. In some reports, spontaneous closure occurs in 85% of the cases regardless of the size of the abdominal defect.[2] Complications of an umbilical hernia that require immediate surgical interventions are incarceration or strangulation and in extremely rare cases rupture, when the skin over the hernia breaks open.

Case presentation

A 3 years old girl came to the department of pediatric surgery at Armand Trousseau Hospital with a ruptured umbilical hernia. This child was born prematurely at 27 weeks of gestation. She was handled and treated for persisting arterial duct by a medical prescription of Ibuprofen with uneventful follow-up. She was known carrying a medullar malformation (syringomyelia between the 5th cervical and the 7th thoracic vertebrae) without any neurological impact. Few days before the accident, the patient had progressive constipation. Rupture of the umbilical hernia occurred in our case during a defecation effort. The skin over the hernia broke open, exposing the tissue inside the hernia sac. The infant was transferred to our institution by a medically assisted transfer. The delay between the occurring of the evisceration and the arrival to the hospital was three hours. Clinically the patient was stable except for the ruptured umbilical hernia with eviscerated ommentum. No signs of infection or necrosis were noted. The infant was managed with intravenous fluid, analgesics, and antibiotics.

The eviscerated ommentum was covered with sterile saline soaked gauze, and the patient underwent emergent surgery. At laparotomy, the eviscerated ommentum was resected (Figure 1), the rest of the viscera looked healthy, the size of the fascial defect was approximately 1,5 cm. The hernia sac and overlying skin were excised. Closure of the defect was performed with an interrupted transverse suture; the umbilicus was then tacked to the fascia and the skin closed. Postoperative follow-up was uneventful. Oral supply was started the day after surgery, and the patient was discharged three days after surgery. Two years on follow-up, the child has remained healthy.

Discussion

All neonates have a small umbilical defect at birth through which the umbilical vessels pass. Typically the umbilical ring closes in the early days to weeks of infancy. However, in 10% to 30% of children, the defect fails to close and is apparent on physical examination. The incidence of an umbilical hernia is associated with race, birth weight, and certain syndromes. Sub-Saharan African infants, such in our case, are 6 to 10 times more likely than Caucasian children to have an umbilical hernia.[2] Likewise, infants born weighing less than 1200 g are nearly four times more likely to have an umbilical defect than their counterparts weighing greater than 2500 g.[3]

There is both an embryological and anatomical basis for the development of an umbilical hernia. Embryologically, it is thought to be attributed to the failure of the recti to approximate in the midline following the return of the midgut into the peritoneal cavity leaving a midline defect in the linea alba. Anatomically, the umbilical ring consists of the umbilical scar, round ligament, and umbilical fascia. Usually, the round ligament passes over the superior margin of the umbilical ring and attaches to the inferior margin. However, if it only attaches to the superior margin of the ring, so that the floor of the umbilical ring is formed only by the umbilical fascia and peritoneum, this will create a weakness and hence predispose to an umbilical hernia.[4]

Incarceration of the pediatric umbilical hernia is considered uncommon. However, several studies report the cause for repair to be incarceration in up to 5% of cases.[5] Spontaneous rupture of an umbilical hernia remains exceptional, B. Zendejas et al.,[5] reported only one case in a study including 489 children managed in their department for 53 years. Since 1956 and the first report of spontaneous rupture of an umbilical hernia, 19 similar cases were published in the medical literature. The average age of the patients was 12.3 months ranging from 2 weeks to 11 years (Table 1).

Table 1 Summary of similar published cases

Year	Authors	Country	Sex	Age	Predisposing Cause	Fascial Defect	Contents Eviscerated	Outcome
1956	Strange[1]	England	M	3 M	Unknown	NM	Bowel	Died
965	Harding-Jones and Robson[2]	England	F	11 W	Penny strapping causing ulceration	1.3 cm	Caecum, appendix and terminal ileum	Alive
1972	Metcalf and Price[3]	Wales	F	7W	Possible umbilical sepsis	NM	Small bowel	Alive
1972	Chatterjee[4]	India	NM	6W	Umbilical sepsis	2 cm	Small bowel	Died
1977	Chochinov[5]	Canada	F	1 M	Umbilical sepsis	2.5 cm	Caecum, small bowel and ascending colon	Alive
1982	Holme and Gundersen[6]	Norway	M	3W	Intussusception, crying	NM	Ileum	Alive
1994	Bain and Bishop[7]	England	F	9 M	Coughing, bronchiolitis,	NM	Caecum, small bowel	Alive
1998	Ahmed et al.,[8]	Nigeria	F	2 M	Crying	>1.5 cm	NM	Alive
			M	3M	Crying,Previous umbilical sepsis	>1.5 cm	NM	Alive
2003	Ameh et al.,[9]	Nigeria	F	10 M	Large ulcerated hernia	>1.5 cm	NM	Alive
			F	3 M	Intestinal obstruction	>1.5 cm	NM	Alive
			F	6W	Unknown	>1.5 cm	NM	Alive
2000	Singh et al.,[10]	India	F	8 M	Recurrent umbilical sepsis	2 cm	Bowel	Alive
2004	Hulsebos et al.,[11]	Netherlands	F	3Y	Hurler's syndrome, umbilical sepsis	2 cm	Omentum	Alive
2005	Weik and Moores[12]	America	F	5 M	Skin eschar, previous bronchiolitis	NM	Caecum, appendix, terminal ileum	Alive
2005	Kaya and Yucesan[13]	Turkey	F	11Y	Hepatic cirrhosis and ascites, ulcerated hernia	NM	Omentum	Alive
2006	Cigdem et al.[14]	Turkey	M	8 M	Crying (otitis)	3 cm	Caecum, appendix, small bowel	Alive
2008	Pandey et al.[15]	India	M	4 M	Unknown	3 cm	Bladder dome	Alive
2011	Wendy L. Thomson and al	South Africa	F	2W	Pneumonia	2 cm	Appendix, small bowel, colon	Alive
Our case		France	F	3Y	Crying, constipation	1,5 cm	Omentum	Alive

There are several factors which are thought to precipitate rupture including the age, the defect size, umbilical sepsis or ulceration and any condition which raises intra abdominal pressure (crying, coughing, pneumonia, positive pressure ventilation, ascites or intra-abdominal pathology).

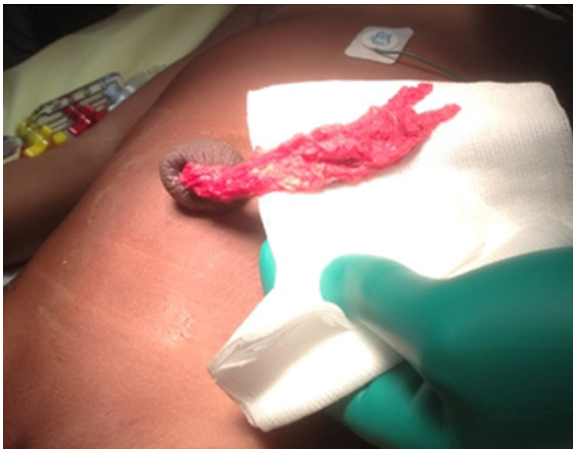

Figure 1 Spontaneous Rutpure of Umbilical Hernia contaning the momentum.

In this case, the infant was suffering from constipation which is known to be a predictive factor since it raises intra-abdominal pressure. Umbilical sepsis was noted in 38% of the reported cases of the spontaneous evisceration. Foreign body impactions have been known to precipitate incarceration and, therefore, can be advocated as a predictive factor for umbilical sepsis. In the 13 cases where it was reported, the parietal defect was at least 1.5 cm. It suggests that the large hernias are more likely to present a spontaneous rupture. These reported cases are spread worldwide between developed and developing countries, making it difficult to determine any geographical significance.

We report the 20th case of this rare complication. The mortality rate is low, two cases of death were reported, In both cases, there was a delayed presentation to hospital with concomitant dehydration and sepsis in one case.

Conclusion

Rupture of an umbilical hernia is exceedingly rare in paediatric population; such case report should alert physicians to the potential risk factors for spontaneous rupture and in these patients expedite surgical repair.

Consent

Written informed consent was obtained from the patient for publication of this case report and accompanying images.

Acknowledgments

None.

Conflicts of interest

Authors declare that there is no conflict of interest.

References

1. Lissauer T, Clayden G. *Illustrated Textbook of Paediatrics*. (3rd edn), Mosby, London; 2007.

2. Armstrong O. Umbilical hernia. *Rev Prat*. 2003;53(15):1671–1676.
3. Cilley R. Disorders of the umbilicus. In: Grosfeld JL & O'Neill J, et al. (Eds.), *Pediatric surgery*. Elsevier, Philadelphia, USA; 2006. 1143–1156 p.
4. Meier DE, OlaOlorun DA, Omolele R, et al. Incidence of umbilical hernia in African children: redefinition of "normal" and reevaluation of indications for repair. *World J Surg*. 2001;25(5):645–648.
5. Kelly KB, Ponsky TA. Pediatric Abdominal Wal l Defects. *Surg Clin N Am*. 2010;93(5):1255–1267.
6. Thomson WL, Wood RJ, Millar AJ. A literature review of spontaneous evisceration in paediatric umbilical hernias. *Pediatr Surg Int*. 2012;28(5):467–470.
7. Garcia VF. Umbilical and other abdominal wall hernias. In: Ashcraft KW (Ed.), *Paediatric surgery*. 3rd ed. WB Saunders and Co, Philadelphia; 2000. 651–652 p.
8. Zendejas B, Kuchena A, Onkendi EO, et al. Fifty-three-year experience with pediatric umbilical hernia repairs. *J Pediatr Surg*. 2000;46(11):2151–2156.
9. Strange SL. Spontaneous rupture of umbilical hernia in an infant. *Postgrad Med J*. 1956;32(363):39.
10. Singh UK, Singh S, Ojha P, et al. Spontaneous rupture of umbilical hernia in an infant. *Indian Pediatr*. 2010;37(3):341–342.
11. Hulsebos RG, Zeebregts CJ, de Langen ZJ. Perforation of a congenital umbilical hernia in a patient with Hurler's syndrome. *J Pediatr Surg*. 2004;39(9):1426–1427.
12. Weik J, Moores D. An unusual case of umbilical hernia rupture with evisceration. *J Pediatr Surg*. 2005;40(4):E33–E35.
13. Kaya M. Yücesan Spontaneous ruptured umbilical hernia in a child with hepatic cirrhosis and ascites. *Pediatr Surg Int*. 2005;21(5):413–414
14. Durakbasa CU. Spontaneous rupture of an infantile umbilical hernia with intestinal evisceration. *Paediatr Surg Int*. 2006;22(6):567–569.
15. Pandey A, Kumar V, Gangopadhyay AN, et al. Eviscerated urinary bladder via ruptured umbilical hernia: a rare occurrence. *Hernia*. 2008;12(3):317–319.

Citation: Chouikh T, Echaieb A, Belkhir D, et al. Uncommon complication of pediatric umbilical hernia: spontaneous evisceration: case report and literature review. *J Pediatr Neonatal Care*. 2016;5(6):11–12. DOI: 10.15406/jpnc.2016.05.00202