H88 Congenital Transmesenteric Herniation: A Case Report Illustrating a Rare Form of Internal Herniation Resulting in Small Bowel Strangulation

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After attending this presentation, attendees will be better equipped to recognize, describe, and document congenital transmesenteric hernias, a rare cause of sudden, unexpected death in the pediatric population.

This presentation will impact the forensic science community by reporting a highly unusual case of small bowel obstruction due to this uncommon type of internal herniation, thereby increasing awareness of this entity and contributing to the existing body of knowledge, as well as highlighting its potential medicolegal repercussions.

A previously healthy 7-year-old girl experienced abdominal pain, loose stools, and vomiting for approximately two days, which abruptly escalated to severe pain and shock, culminating in cardiac arrest and death. Since the cause of death was not known, the case was referred for a forensic autopsy. At autopsy, it was discovered that she had a strangulated internal hernia of the small bowel. A distended, dark red section of the ileum was seen protruding through a circular defect in an avascular region of the small bowel mesentery. The cause of death was subsequently determined to be infarction of the small bowel, and the consequences thereof.

Internal hernias, with an estimated incidence of less than 1% in the general population, are a group of unusual causes of small bowel obstruction, accounting for only 0.6%-5.8% of reported cases.[1-3] Transmesenteric hernias are a subtype, representing 5%-10% of internal hernias, and usually involve herniation of the small bowel through a defect in the mesentery.[4,5] Such a defect may be congenital or acquired (most often after abdominal surgery); congenital transmesenteric hernias can present at any age, but are more commonly seen in children[2,4,6]. The pathogenesis of these congenital defects is not fully understood, but it is thought to involve prenatal intestinal ischemia, since they are usually located in an avascular region of the mesentery of the terminal ileum, known as Treves' field.[1,3,7]

Due to its rarity, non-specific initial clinical features, and propensity for rapid progression to strangulation and necrosis, the diagnosis of a transmesenteric hernia is clinically challenging – and with a mortality rate approaching 50%, death often ensues before it can be identified.[3,5,7] Considering that the typical scenario is that of a previously well infant or young child who dies suddenly and unexpectedly, such cases should be referred for a forensic autopsy. This is particularly important when questions regarding the adequacy of medical care and parental attentiveness may arise. For the pathologist, a high index of suspicion, careful and methodical dissection technique, as well as a basic understanding of the relevant morbid anatomy, embryology, and pathogenesis, is helpful in distinguishing congenital transmesenteric hernias from other forms of small bowel obstruction at autopsy.

Reference(s):

1. Saka R., Sasaki T., Nara K., Hasegawa T., Nose S., Okuyama H., Oue T. Congenital Treves' field transmesenteric hernia in children: A case series and literature review. *J Ped Surg Case Reports*. 2015; 3: 351-355.
2. Sato T., Abe S., Tsuboi K., Iwata M., Tamura A., Tsuchihashi H., Nishio H., Suzuki K. Sudden death of a child because of an intestinal obstruction caused by a large congenital mesenteric defect. *Leg Med.* 2012; 14: 157-159.

3. Page M.P., Ricca R.L., Resnick A.S., Puder M., Fishman S.J. Newborns and toddler intestinal obstruction owing to congenital mesenteric defects. *J Ped Surg*. 2008; 43: 755-758.
4. Abu-Jaish W., Forgione P. Internal hernias: congenital and acquired. In: Yeo C.J., Matthews J.B., McFadden D.W., Pemberton J.H., Peters J.H. (editors). *Shackelford's Surgery of the Alimentary Tract.* Philadelphia: Elsevier Saunders. 2013; 955-956.
5. Malit M., Burjonrappa S. Congenital mesenteric defect: Description of a rare cause of distal intestinal obstruction in a neonate. *Int J Surg Case Reports*. 2012; 3: 121-123.
6. Moon S. Treves' field transmesenteric hernia causing acute small bowel obstruction in a 9-year-old girl. J Ped Surg Case Reports 2015; 3: 527-529.
7. Vaos G., Skondras C. Treves' field congenital hernias in children: an unsuspected rare cause of acute small bowel obstruction. *Pediatr Surg Int*. 2007; 23: 337-342.

Bowel Obstruction, Internal Hernias, Congenital Defect