



### **G44 Congenital Mesenteric Fenestration With Hernia Causing Intestinal Obstruction and Sudden Death of a Child**

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After attending this presentation, attendees will understand the importance of full forensic evaluation in cases of children with sudden death following gastrointestinal complaints.

This presentation will impact the forensic science community by illustrating a rare but important presentation of internal small bowel herniation which led to sudden death in a child. The presentation alerts the forensic community about a rare cause of sudden death in the pediatric population, its preceding symptoms and presentation, and reviews the available literature.

An internal hernia is a protrusion of bowel through an orifice in the peritoneum or mesentery.<sup>1</sup> Transmesenteric hernias are internal hernias caused by a congenital defect in the mesentery.<sup>2</sup> As no hernia sac is involved, a considerable length of bowel can protrude through the defect.<sup>3</sup> Despite the congenital nature of the mesenteric defect, this phenomenon can present at any age, with adults making up most of the cases reported.<sup>4</sup>

This presentation reports a rare case of a four-year-old girl who presented with abdominal pain and vomiting and became unconscious a few hours later. The girl was taken to the hospital and died despite attempted resuscitation. She had no previous medical or surgical history. A computed tomography of the abdomen showed multiple dilated loops of small bowel consistent with either obstruction or ileus. The laboratory findings included leukocytosis and metabolic acidosis. A subsequent autopsy revealed that the small bowel had herniated through a small congenital fenestration in the mesentery leading to incarceration, hemorrhagic infarction, and intestinal obstruction. The mesenteric defect measured approximately 1.5 centimeters. The herniated segment of small intestine measured approximately 40 centimeters and was microscopically necrotic. Herniation through a congenital mesenteric defect is an uncommon and extremely serious cause of intestinal obstruction. Most internal hernias occur postoperatively, resulting from incomplete closure of surgically created mesenteric defects.<sup>5</sup> An acute intestinal obstruction with bowel entrapment in the absence of an external hernia and with no history of previous surgical procedures should suggest the possibility of an internal hernia.<sup>6</sup>

This case illustrates the difficulty of diagnosing incarcerated internal hernias due to nonspecific accompanying symptoms and its rapid progression to intestinal infarction and death. Immediate surgical intervention is needed to prevent subsequent mortality. It is important that sudden unexpected deaths in children undergo full forensic evaluation to establish the precise cause of death.

#### **References:**

1. Al-Khyatt W, Aggarwal S, Birchall J, *et al.* Acute intestinal obstruction secondary to left paraduodenal hernia: A case report and literature review. *World J Emerg Surg* 2013; 8(1):5.
2. Sato T, Abe S, Tsuboi K, *et al.* Sudden death of a child because of an intestinal obstruction caused by a large congenital mesenteric defect. *Leg Med (Tokyo)* 2012; 14(3):157-9.
3. Malit M, Burjonrappa S. Congenital mesenteric defect: Description of a rare cause of distal intestinal obstruction in a neonate. *Int J Surg Case Rep* 2012; 3(3):121-123.
4. Akyildiz H, Artis T, Sozuer E, *et al.* Internal hernia: Complex diagnostic and therapeutic problem. *Int J Surg* 2009; 7:334-7.
5. Nouira F, Dhaou BM, Charieg A, *et al.* Small bowel obstruction caused by congenital transmesenteric defect. *Afr J Paediatr Surg* 2011;8(1):75-8.
6. Janin Y, Stone AM, Wise L, *et al.* Mesenteric hernia. *Surg Gynecol Obstet* 1980; 150(5): 747-54.

#### **Mesenteric Hernia, Bowel Obstruction, Children**