

Laparoscopic Management of Persistent Vitelline Artery Causing Intestinal Volvulus and Obstruction in a Child

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Dear Editor,

Persistent omphalomesenteric (vitelline) artery causing intestinal obstruction is an extremely rare congenital condition in pediatric surgery, with only a few case reports in the literature (1-3). Here we present a case that was successfully managed using a laparoscopic approach.

A 15-year-old girl presented to our Emergency Department with the complaint of sudden-onset colicky abdominal pain and bilious vomiting. The physical examination revealed tenderness and muscle guarding in the right lower quadrant. Abdominal X-ray showed dilated intestinal segments in the same area, and ultrasonography showed the same findings with free fluid in the right lower quadrant and normal appendix. We preliminarily diagnosed the condition as congenital obstructive fibrotic band compression. Emergent laparoscopic exploration was performed. A standard three-port technique was employed. During exploration, volvulated ileal loops were around an artery-like structure, which originated from the ileocecal mesentery and ended at the anterior abdominal wall, was observed by following the trace of the medial umbilical ligament (Figure 1). Volvulated loops were edematous and seemed to be obstructed. Laparoscopic devolvulation with excision of the artery and elective appendectomy was performed (Figure 2). Pathological evaluation proved the excised structure to be of arterial origin. The patient was uneventfully discharged one day after the surgery. Written informed consent was obtained from patient who participated in this study.

Persistent vitelline artery is one of the omphalomesenteric remnants, which may lead to bowel obstruction and volvulus depending on its configuration (4). The diagnosis of this condition is extremely problematic and mostly depends on the clinician's suspicion. Laparoscopic management seems to be a good option in such rare pediatric conditions.

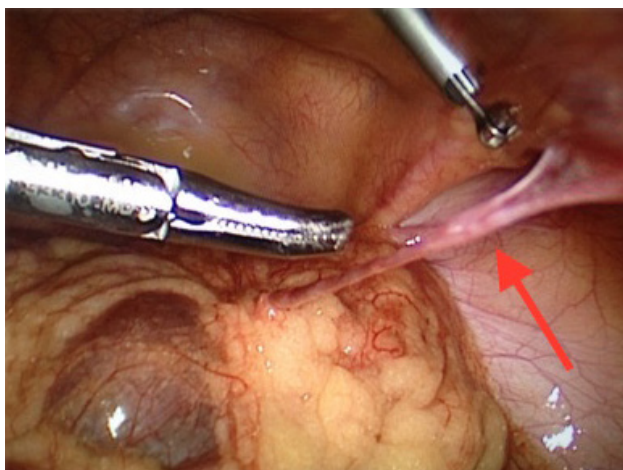


FIGURE 1. Persistent vitelline artery observed after the devolvulation procedure (red arrow)



FIGURE 2. Macroscopic view of the excised specimen

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REFERENCES

1. Sheehan MV. Persistent vitelline (omphalo-mesenteric) artery causing strangulation of the ileum and volvulus. *Ir J Med Sci* 1953; 452-8. [\[CrossRef\]](#)
2. Myers NA, Rubin S. Intestinal obstruction due to a persistent vitelline artery. *Aust N Z J Surg* 1973; 43: 161-2. [\[CrossRef\]](#)
3. Syres KM, Potochny EM, Ignacio RC Jr. Incidental persistent omphalomesenteric (vitelline) artery during laparoscopic appendectomy in an adult. *Am Surg* 2013; 79: E10-1.
4. Loh AH, Prasad ST, Chew SH, Jacobsen AS. Neonatal intestinal volvulus due to a persistent right vitelline artery. *Pediatr Surg Int* 2007; 23: 373-6. [\[CrossRef\]](#)