

> THE PATIENTS

2 boys, ages 15 months and 6 years

> SIGNS & SYMPTOMS

– Non-healing umbilical lesions that had been present since birth

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> THE CASES

CASE 1 ▶ A 15-month-old boy was brought to our center for plastic surgery after being referred by his general practitioner (GP). The patient had a non-healing lesion on his umbilicus that had been present since birth. It had remained the same size, but bled occasionally. The GP initially presumed the lesion was a granuloma and treated it with silver nitrate cautery, but this did not eradicate it.

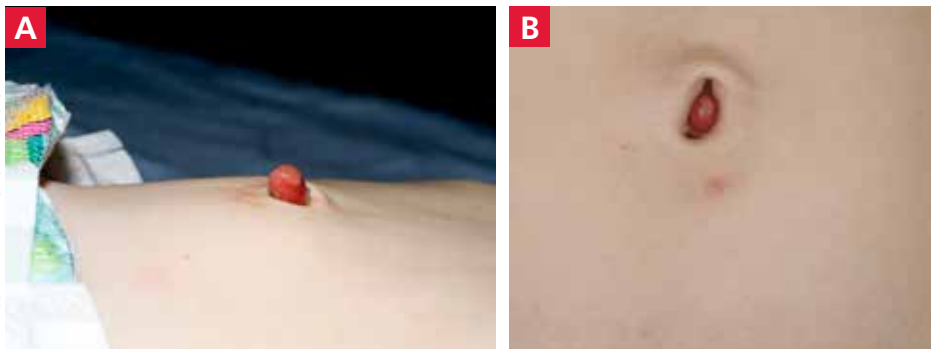
After talking with the boy's mother further, we learned that there had been a constant oozing from the area since birth and that the lesion protruded slightly from the abdomen when the child cried. The boy had congenital heart disease, but his bowel and genitourinary history were normal.

A clinical examination revealed pink, moist tissue herniating from the umbilicus with surrounding abdominal fullness when the boy stood up (FIGURE 1A). An ultrasound showed a focal 19 x 7 mm complex area around the umbilicus with no definite track. The lesion was surgically removed. Histology revealed a completely excised vitellointestinal duct remnant.

CASE 2 ▶ A 6-year-old boy with a history of attention-deficit/hyperactivity disorder was brought to our clinic with a non-healing umbilical lesion after being referred by his GP. The lesion had been present since birth and had failed to resolve despite several attempts to treat it with silver nitrate cautery. Clinically, the patient appeared to have a granulomatous umbilical polyp (FIGURE 1B). The patient underwent surgical excision of the lesion. Histological analysis revealed a completely excised vitellointestinal duct remnant (FIGURE 2).

FIGURE 1

Presumed umbilical granulomas turn out to be vitellointestinal duct remnants



Silver nitrate cautery failed to eradicate the lesions near the umbilicus in these 2 young boys, ages 15 months (A, Case 1) and 6 years (B, Case 2). Surgical excision was curative in both cases.

CONTINUED

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➤ **Vitelointestinal duct remnants are similar in presentation to benign granulomas or granulation tissue.**

DISCUSSION

The vitelointestinal duct (VID), also called the omphalomesenteric duct (OMD), connects the alimentary canal and the yolk sac in early embryogenesis. Failure of involution of the duct results in abnormalities such as Meckel's diverticulum, cysts, and polyps.

VID anomalies occur in approximately 2% of newborns; a small percentage of these have patent connections to the intestine.¹ Parents are often the first to notice the abnormality and will typically see a reddish protrusion around the umbilicus or a persistent serous discharge around the umbilicus soon after birth.

VID remnants are similar in presentation to benign granulomas or granulation tissue, which are benign lesions that present in the first few weeks of life. Granulomas are reddish in color, bleed minimally when irritated by trauma, and respond well to silver nitrate cautery.² When the lesion fails to respond to treatment, an alternative diagnosis should be investigated further.

Ultrasonography is the best way to evaluate a suspected VID remnant

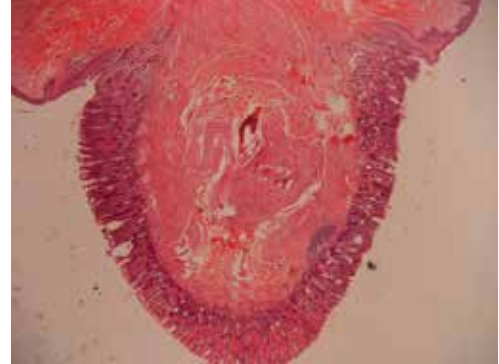
A suspected VID remnant should first be assessed with ultrasonography to determine the extent of the remnant and guide surgical treatment. Ultrasonography can also delineate the relationship of these congenital remnants with the umbilicus and bladder.³

■ **Potential complications** that can arise from these lesions include an intestinal hernia, intussusception, volvulus, abdominal pain, or a persistent discharge that can lead to infection.³ Mortality following complications is significantly high.⁴

Although the etiology of patent VIDs and their remnants remains unknown, the presence of such ducts is associated with other congenital anomalies, including Down Syndrome, structural cardiac malformation, conduction abnormalities, and cleft lip and palate.⁵⁻⁷ Therefore, additional history taking and examinations may be required to identify these associated pathologies. In Case 1, the 15-month-old boy had congenital heart disease.

FIGURE 2

Histologic findings: What you'll see



The histological specimen from Case 2 showed colonic type mucosa covering smooth muscle in the core of the polyp, which confirmed that the specimen was a vitelointestinal duct remnant. The lesion is flanked by normal epidermis.

Surgical excision will prevent complications

A simple surgical excision should be performed for VID remnants. The prognosis is excellent when such procedures are performed in the non-acute setting. Some debate exists as to whether all remnants require formal abdominal exploration.^{8,9}

■ **Treatment of patent VIDs** requires surgical excision of the duct, with or without a segment of the small bowel, to obliterate the connection.¹⁰ Reconstruction of the umbilicus is then performed, depending on the surgical technique used.

■ **Our patients** both made complete recoveries following their surgeries with resolution of their symptoms.

THE TAKEAWAY

Consider a VID remnant as part of the differential diagnosis for any patient who has what appears to be a granulomatous umbilical lesion. Order ultrasonography to evaluate a suspected VID, especially for lesions that fail to respond to 2 or 3 silver nitrate treatments. Surgical excision of a VID remnant is usually curative. **JFP**

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