

BRIEF REPORT

What lies beneath; umbilical granuloma or vitello-intestinal duct?

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ABSTRACT

Persistence of the vitello-intestinal duct in children is not uncommon. It may present as a thin cord up to the umbilicus, or rarely lead to formation of an umbilical polyp with, or without, a patent diverticulum. It is formed at around eleven days post fertilization. The obliterative process begins at the umbilical end of the duct and extends towards the intestine making Meckel's diverticulum more likely.

This case report is of an infant who had a vitello-intestinal duct, which was treated in primary care on multiple occasions as an umbilical granuloma and then as an umbilical infection.

Key words: umbilicus, granuloma, vitello-intestinal duct, neonate, surgery, silver nitrate cauterization

The vitello-intestinal duct in the embryological life is the communication between the apex of the midgut and the yolk sac, formed at around eleven days post fertilization. Normally, it gets obliterated by seventh week of life.¹ In about 2% of humans this duct persists and gives rise to a group of anomalies of which Meckel's diverticulum is the commonest² and complete patency of the duct is the rarest.

Based on signs and symptoms the cases are best divided into those less or over 2 years of age. In the less than 2 years old, there can be a history of passage of blood clot or altered discharge through the umbilicus. There is usually no history of abdominal discomfort but parents may describe symptoms of 'wind pain'.¹ Whereas in the above 2 years group there is longer duration of passage of clots of blood of varying frequency with mild abdominal pain.¹

Umbilical polyp with multiple failed attempts at cauterization for suspected granulomatous growth and persistent umbilical discharge have been described in literature, as has been observed in the case being reported. This underlines the importance of keeping an open mind and to consider vitello-intestinal duct abnormalities when confronted with such scenarios.

The case reported here is of a 6 week old infant, born after a normal pregnancy and uneventful delivery. She had multiple chemical cauterization attempts for, what was thought to be, an infected Umbilical Granuloma, not improving despite multiple oral antibiotic course. It initially had a yellow discharge (Fig. 1),

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Figure 1, Vitello-intestinal duct, yellow discharge on clothes.



Figure 2, Post operative healing.

and then discharged faecal granules. After she was referred to our hospital, an ultrasound of the defect confirmed a fistula from the umbilicus to the abdominal cavity. She was transferred to a paediatric surgical

unit where she underwent surgical removal of the fistula, with a good outcome and good healing. (Fig. 2) Following this case, there was another neonate on the unit, who was noted to have an abnormal looking cord. He also had a vitello-intestinal defect, which was confirmed on Day 2 of life. This was purely due to higher index of suspicion with regards to subtle umbilical cord abnormalities based on previous experience on the unit.

The commonest abnormality of the umbilicus is an Umbilical Granuloma.⁴ The treatment of choice for this inflammatory granulation tissue is chemical cauterization with Silver Nitrate sticks.² Persistence of the growth after 2-3 failed attempts at cauterization should raise the suspicion of alternative diagnoses, and must stimulate health professionals to investigate for other abnormalities, such as a persistent Vitello-Intestinal duct.⁴

Vitello intestinal abnormalities vary depending on the site of the defect. Proximal vitello-intestinal duct could lead to Meckels diverticulum. Patent mid segment are known to lead to a vitelline cyst. The distal defects could range from an umbilical polyp to a vitelline sinus.⁴ Finally a completely patent defect would lead to a vitello-intestinal duct fistula. As an initial investigation blood tests and local swabs could help to rule out omphilitis or a necrotizing fasciitis. A history of delayed cord detachment and abnormalities in the full blood count could point towards a leuco-

cyte adhesion disorder.²

An ultrasound would be helpful to visualise the possible origin of the defect differentiating a urachal defect from a vitello intestinal abnormality.⁵ In case of ambiguity contrast followed by imaging can aid in the diagnosis. Surgical exploration and excision of the vitello intestinal tract would be the treatment option as was the outcome in our case report. The biopsy findings are confirmatory and if corrected early it can avoid various complications associated with either the abnormalities or the chemical cauterization.

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