

Umbilical Sinus: Case Report of a Rare Malformation of the Umbilicus

P.S. Dhot¹, Seema Goel², Priyanka Gulati^{3,*}, Faraz Nasir⁴, Pritika Uniyal⁵

¹Professor and HOD Pathology, ²Associate Professor, ^{3,4,5}First Year P.G. Department of Pathology, Santosh Medical College and Hospital, Ghaziabad, UP

***Corresponding Author:**

Email: drpriyanka1801@yahoo.com

Abstract

Umbilical sinus is a very rare type of malformation among all the vitello intestinal duct anomalies. The patient may present to the department of surgery or medicine complaining of umbilical discharge. It usually presents before adulthood and can be detected by history, appropriate clinical examination and biopsy. Umbilical sinus although rare, should be considered in the differential diagnosis of any persisting umbilical discharge.

Key words: Discharging Umbilicus, Malformation, Umbilical Sinus.

Introduction

The omphalomesenteric duct, commonly also called as vitello intestinal duct joins the midgut with extra embryonic part of the yolk sac in the intra uterine life. This duct disappears later on as the development of the foetus progresses. But in certain cases this duct may persist or fail to obliterate completely leading to malformations like meckels diverticulum, patent vitello intestinal duct, or umbilical sinus. Meckels diverticulum is the most common and the umbilical sinus is the rarest presentation. Umbilical sinus may present clinically as discharge from the sinus. Surgical intervention has to be done and malformation can be repaired completely without any complications.

Case Report

A thirteen year old male patient, otherwise healthy, presented to the surgical department with umbilical discharge on and off since birth. The discharge was pale white to yellowish muco purulent with no other complaints of pain, itching, redness or fever.

Excisional biopsy was done and sent to department of pathology for histo pathological examination to confirm the possible diagnosis of umbilical sinus or obliterated urachus or obliterated vitello intestinal duct.

On gross examination we received three tissue pieces. One piece had skin attached to it and measured 1.5 by 1 centimeters in size. The skin showed a suture mark, an opening punctum and no hair were seen on it. On serial cut sectioning an ill defined sinus tract was noticed. Whole cut section through the punctum was processed.

The other two tissue pieces were unremarkable, measured 2 by 0.2 centimeters and 0.5 by 0.5 by 0.2

centimeters respectively, were blackish and firm, bisected and given for processing.

The H & E stained sections showed keratinized stratified squamous epithelium. A sinus tract covered with intestinal mucosa was visualized with mucin secreting goblet cells. Lamina propria showed moderate amount of chronic inflammatory cell infiltrations. Smooth muscle bundles and nerve bundles were also noted. Rest of the sub epidermal area appeared normal. The other membranous tissue pieces were completely fibrotic. Histopathological examination didn't reveal any malignancy. And thus the case was diagnosed as umbilical sinus.

Discussion

The vitelline duct malformations constitute a rare group and are seen in only two percent of the cases.⁽²⁾ The vitelline duct normally closes between the fifth and seventh month of embryonic development but can lead to several pathologies in case of closure defects such as vitelline cyst, meckels diverticulum, umbilical fistula, umbilical sinus and umbilical polyp.⁽³⁾

A simplified classification presented by some authors⁽⁴⁾ for umbilical remnant anomalies are as follows:

Type one remnant: the entire duct is patent (vitelline or urachus)

Type two remnant: only one end is patent

Type three remnant: only middle portion is patent.

Fig. 1 shows the sinus tract lined by intestinal epithelium (10x).

Fig. 2 shows intestinal columnar epithelium and stratified squamous epithelium in the sinus tract (10x).

Fig. 3 shows goblet cells in the lining of the sinus tract (40x).

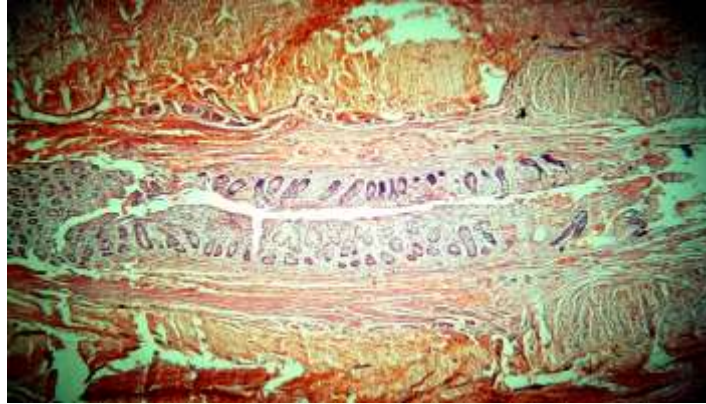


Fig. 1

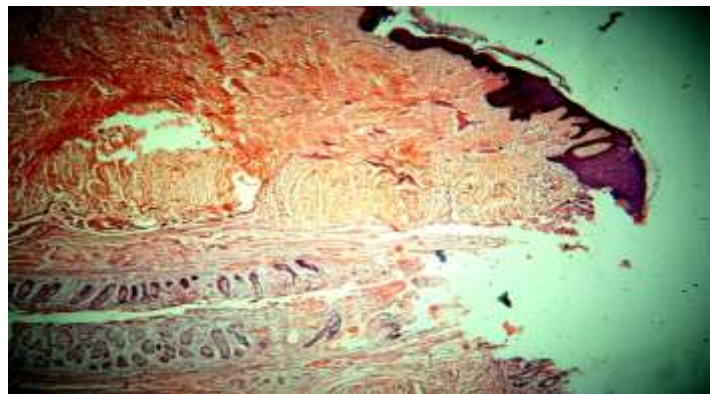


Fig. 2

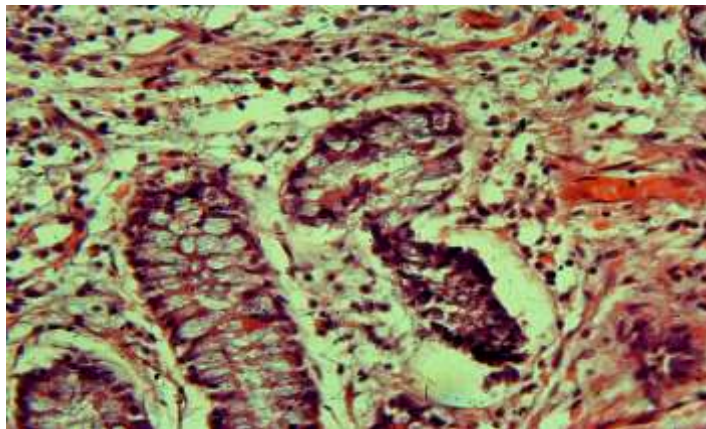


Fig. 3

They may or may not be symptomatic. When only umbilical end of the duct is patent, it is called umbilical sinus.⁽¹⁾ Meckel's diverticulum is present in two percent of the cases. Umbilical sinus is uncommon and only a few cases have been reported. A retrospective study review done in 2005⁽⁴⁾, for the umbilical anomalies over a period of 22 years showed the records of eighteen asymptomatic children with vitelline duct anomalies. Out of the total eighteen children, patent vitelline duct was found in twelve cases, and all of them presented before the age of twelve years. Meckel's

diverticulum was found in three cases with variable age of presentation. Umbilical sinus was present in two cases both at the age of eight years. Vitelline cyst was present only in one case at the age of three years.

Conclusion

Umbilical sinus is a rare type of anomaly presenting clinically at any age with muco purulent umbilical discharge. It should be considered as a differential diagnosis of discharging umbilicus.

However the most common cause of discharging umbilicus is an umbilical granuloma.^(1,5)

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