

Case Study

# A Rare Case of Remnant of Omphalomesenteric Duct Presented with Umbilical Sinus with Granuloma in an Adult

*Kishore Babu EP<sup>1</sup>, Bhuvneshwari<sup>2</sup>, Imran Thariq Ajmal<sup>3</sup>, Saxena Megha Dhirendrakumar<sup>4</sup>*

<sup>1</sup>Professor, <sup>2</sup>Senior Resident, <sup>3</sup>Associate Professor, <sup>4</sup>Postgraduate, Department of General Surgery, Chettinad Hospital & Research Institute, Rajiv Gandhi Salai, OMR, Kelambakkam, Chennai, Tamil Nadu, India.

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## I N F O

### Corresponding Author:

Saxena Megha Dhirendrakumar, Department of General Surgery, Chettinad Hospital & Research Institute, Rajiv Gandhi Salai, OMR, Kelambakkam, Chennai, Tamil Nadu, India.

### E-mail Id:

16saxenam@gmail.com

### Orcid Id:

<https://orcid.org/0000-0002-1251-8021>

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## A B S T R A C T

The omphalomesenteric duct (OMD) is an embryonic structure connecting the yolk sac to the midgut. Failure of the resorption of the duct results in several anomalies. These anomalies usually occur in approximately 2% of the population. Individuals having such anomalies may remain asymptomatic throughout life. The embryonic vitelline duct obliterates in 5 to 9 weeks of intrauterine life normally. Persistence of this results in vitellointestinal duct/omphalomesenteric duct anomalies. It is usually seen in the paediatric age group. Moreover, they have a different course in adults than the paediatric age group in which they frequently involute and have a benign course. These remnants are prone to infection and development of malignancy. A proper diagnostic workup by clinical and imaging tools is required. Hereby we have reported a rare case of remnant OMD which presented as an umbilical sinus with a granuloma in an adult patient.

**Keywords:** Omphalomesenteric Duct, Anomalies, Umbilical Sinus

## Introduction

The presence of omphalomesenteric duct (OMD) remnant is a rare condition that typically affects the paediatric population.<sup>1-3</sup> OMD remnants are usually asymptomatic, but they may induce various complications or symptoms such as intestinal obstruction, abdominal pain, melaena, and umbilical hernia.

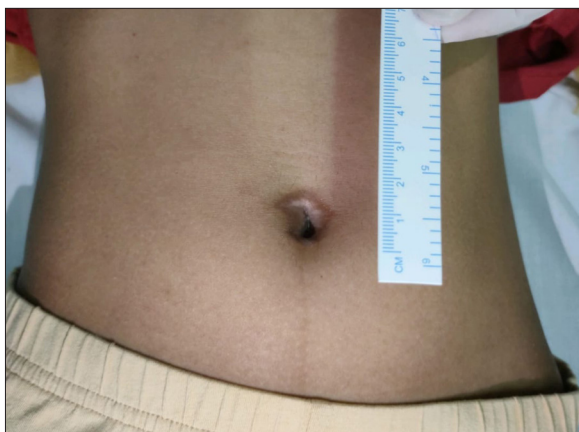
During embryonal development, the OMD serves as a primitive connection between the midgut and the yolk sac. Normally this undergoes obliteration during the 5th-9th week of gestation.<sup>4</sup> Failure of this results in persistent OMD.

## Case Report

An 18-year-old female presented with foul-smelling discharge on and off from the umbilicus since childhood, which was at times associated with pain in the umbilical region. On clinical examination, the umbilicus was found to be inverted, umbilical sinus was present, and a fleshy red mass of size approximately 0.5\*0.5 cm was present centrally within the umbilical sinus (Figure 1), with non- blood-stained discharge and tenderness around the umbilicus. MRI sonogram showed linear sinus within the umbilicus.

An umbilical sinus swab was sent for culture and sensitivity

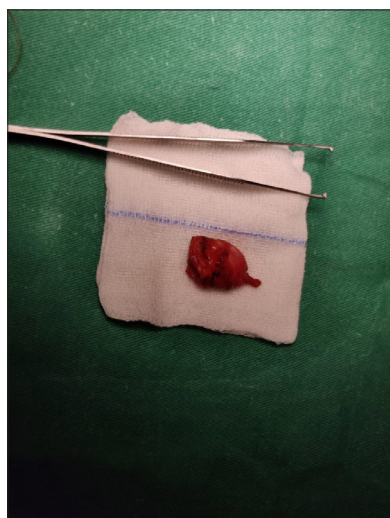
and pseudomonas organism was isolated. A working provisional diagnosis of the umbilical sinus with OMD was made, a pre-operative assessment was done and the patient was taken up for exploration of the sinus under anaesthesia, after obtaining informed and written consent from her. Under exploration, intra-operative findings revealed a sinus measuring approximately 1 cm with a flesh polypoidal mass (0.5\*0.5 cm) (Figure 2). Excision of the sinus along with the polyp was done. Postoperatively, the patient had an uneventful recovery and was discharged on post-op day 3.



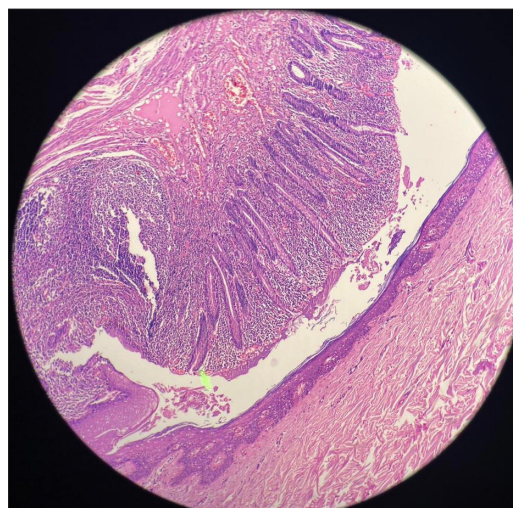
**Figure 1. Pre-op Image showing Umbilical Sinus with Granuloma**

### Result

HPE report showed a polypoidal structure lined by enteric epithelium with gland shaving columnar cells and goblet cell morphology. The epithelium of the polyp was seen continuous with keratinised stratified squamous epithelium. The stroma showed oedema with fibrocollagenous tissue, adipose tissue, and congested blood vessels (Figure 3). The features were found to be consistent with those of omphalomesenteric remnants.



**Figure 2. Specimen Image**



**Figure 3. Microscopic Image showing Polypoidal Structure**

### Discussion

OMD remnants can either present as umbilical anomalies, umbilical drainage, acute abdomen, intestinal obstruction, or rectal bleeding which is usually painless. Among these, umbilical anomalies generally present in the infant age group (approximately 2% of infants) and other features present in later childhood. The symptoms disappear by the age of 4 years. OMD remnant, as reported, is a congenital anomaly associated with primitive yolk stalk. OMD, an embryonic structure, which connects the primary yolk sac and embryonic midgut, transforms into a thin fibrous septum, disintegrates and is eventually absorbed spontaneously within the 5th to 10th week of gestation. The omphalomesenteric duct continues to grow in case it is not atrophied completely and disintegrated, and failure of such closure results in consequences like (omphalomesenteric duct remnants): Meckel's diverticulum, patent omphalomesenteric duct, omphalomesenteric duct (umbilical) sinus, omphalomesenteric duct (umbilical) cyst, umbilical mucosal polyp or a fibrous cord connecting the ileum to the umbilicus.<sup>5</sup> Among all these, the most common OMD anomaly is Meckel's diverticula, an entity diagnosed in the paediatric age group.<sup>1-3</sup> In the adult population, this developmental anomaly can very rarely present as a persistent OMD cyst. This condition is uncommon in the paediatric age group, but in the adult population; it is extremely rare (approximately 2 cases per 100,000 cases). On evaluation with CT abdomen, in case of umbilical sinus, there is a blind-ending tract which arises from the umbilicus. For asymptomatic OMD remnants, surgical intervention is not indicated, whereas, for symptomatic omphalomesenteric duct remnants, surgical resection is necessary.<sup>6</sup> In our case report, the patient was symptomatic with umbilical discharging sinus along with a granuloma over the umbilicus and hence it was surgically removed.

## Conclusion

OMD anomalies being a rare clinical entity, should be diagnosed with a multimodality approach and complete surgical resection is required. In the case reported, an MRI sonogram showed linear sinus within the umbilicus and hence complete surgical excision of the sinus tract was done which showed omphalomesenteric duct remnants in the histopathological report.

**Conflict of Interest:** None

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