

# OMPHALOMESENTERIC FISTULA; A RARE CAUSE OF PERSISTENT UMBILICAL DISCHARGE; A CASE REPORT

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## ABSTRACT

Omphalomesenteric duct is a normal embryological structure, which connects the mid gut to yolk sac in intra uterine life. It normally obliterates by 5th - 9th weeks of gestation. Failure of omphalomesenteric duct to obliterate leads to various anomalies in the umbilical region including Meckel's diverticulum, omphalomesenteric duct cyst, omphalomesenteric sinus or fistula. Rarest presentation of persistent omphalomesenteric duct is omphalomesenteric fistula. It is usually seen in paediatric patients as persistent discharge from umbilicus;<sup>1</sup> however cases have also been reported in adults.<sup>2</sup> It can also present as small bowel obstruction due to prolapse of ileum through the fistula, requiring early diagnosis and treatment. This case report is of rare omphalomesenteric fistula, with a brief review of its pathogenesis, clinical and radiological findings.

## Introduction

Omphalomesenteric duct anomalies are usually seen in paediatric population. They most commonly present as persistent discharge from umbilicus.<sup>1</sup> Among various omphalomesenteric duct anomalies, only Meckel's diverticulum is common, seen in approximately 2% of the world's population. This case report presents a rare presentation of omphalomesenteric duct anomaly; an omphalomesenteric fistula. To the knowledge of author only a single case of congenital umbilical fistula in an adult female has been reported in literature in Pakistan till now.<sup>2</sup> A review of the literature (in infants) revealed that 65 cases of patent omphalomesenteric duct have been reported in Japan.<sup>3</sup>

## Case Report

A 4 months old boy referred through outpatient department for fluoroscopic examination for persistent

feculent discharge from umbilicus since 2 months of age. Patient was born through normal vaginal delivery with an uncomplicated perinatal history. Patient had normal umbilical cord at the time of birth. After sloughing of umbilical stump a pink nodular growth was noted. The nodule regressed at around 2 months of age and patient developed persistent feculent discharge from umbilicus. Patient had normal bowel and bladder functions.



**Figure 1:** A 4 month old boy with persistent umbilical discharge causing omphalitis and periomphalitis.

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Fluoroscopic examination was performed. A fine rubber tube was passed through the sinus opening in the umbilicus. Gastrograffin was instilled through the sinus opening. Free flow of contrast was seen through the umbilicus into the small bowel. No spillage of contrast was noted in the peritoneal cavity and urinary bladder was not opacified by the contrast medium. No evidence of abnormal gut dilatation was noted.

The findings on fluoroscopic examination were consistent with omphalomesenteric fistula.



**Figure 2 & 3:** Fistulogram demonstrates free flow of contrast through the umbilicus into the bowel loops. No opacification of the urinary bladder or contrast spillage into the peritoneum. The features are suggestive of persistent omphalomesenteric duct with umbilical enteric fistula.

## Discussion

Omphalomesenteric fistula is a rare anomaly and constitutes only 2 % of the various omphalomesenteric duct anomalies. Omphalomesenteric duct appears in early embryonic life as a long tubular structure connecting mid gut to the yolk sac. It normally obliterates by 5<sup>th</sup> - 9<sup>th</sup> weeks of intrauterine life forming a solid cord like structure connecting the ileum and the umbilicus. Failure of this physiological process results in persistent abnormal communication between the umbilicus and the ileum or an omphalomesenteric fistula.

It is commonly seen in paediatric population, although few cases have also been reported in adults. No specific sex predilection has been noted; however Yamada et al<sup>3</sup> studied 65 cases of omphalomesenteric fistula in Japan showing male predominance, with a male to female ratio of 2.8:1.

It has been reported that most neonate are full term with normal umbilical cord at birth. However, after sloughing of umbilical cord a pink nodule is frequently left at the umbilicus in many cases.<sup>4</sup> Clinical presentation of omphalomesenteric fistula are usually nonspecific. Patients can present with persistent discharge from umbilicus, which may contain intestinal fluid or fecal matter, due to abnormal connection between the ileum and the umbilicus and this the presentation of our patient. Omphalitis or periomphalitis can also occur due to this contaminated discharge. Patients can also present with complications, the most common among which is small bowel obstruction due to prolapse of ileum through the umbilicus. This presents as a sausage like mass at the umbilicus and a relatively high incidence (52.8%) of ileal prolapse has been reported in these patients.<sup>1</sup> Small bowel obstruction can result in serious morbidity and mortality if prompt diagnosis and treatment is not ensued.

Prompt diagnosis of omphalomesenteric fistula is necessary to avoid serious complications. The most important factor in diagnosis of omphalomesenteric fistula is history of the patient. Radiography can prove helpful in supporting the clinical diagnosis. In cases with persistent discharge from umbilicus, fistulogram or sinogram can be helpful in demonstrating communication between umbilicus and the gut, as in this case. Abdominal radiography may be

helpful in cases with omphalitis, it shows air in the subcutaneous tissues or muscle planes. Imaging modalities like, ultrasound and cystography can also be used in cases of other umbilical anomalies including urachal cysts and urachal fistula respectively. In summary, omphalomesenteric fistula is a rare umbilical anomaly with nonspecific clinical manifestations. Fluoroscopic examination with fistulogram can help in early diagnosis, by demonstrating the abnormal communication between the ileum and the umbilicus. In view of the possible complication of intestinal obstruction and the associated high mortality and morbidity, precocious diagnosis is suggested for prompt patient management.

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