

# Omphalomesenteric Duct Remanent with Urachus (Double Anomaly) in a Child with Umbilicus Discharge –Arare presentation.

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## Abstract:

*Umbilical disorder are most frequently seen in infantile age group. Complete or partial developmental defect in umbilical cord leads to variety of clinical presentation. We reported here a rare case of umbilical disorder having omphalomesenteric duct and urachus remnant.*

## Key word:

*Double anomaly, omphalomesenteric duct, urachus, discharge, duct remanent*

## Introduction:

Umbilical disorders are most frequently seen in infantile age group. These disorders may range from benign conditions like umbilical infection, pyogenic granuloma, umbilical hernia, patent urachus etc. to rare malignant conditions e.g. adenocarcinoma arising from OMD remanent. Umbilical cord develops around 4th week of gestational age and consists of umbilical vessels, allantois (future urachus) and omphalomesenteric duct (OMD). OMD connects yolk sac to developing fetal gut while allantois forms urachus and connects developing urinary bladder to the umbilicus. At the end of first trimester, both OMD and urachus regress without leaving any fetal remnant during fetal development [1,2]. Partial or Complete failure of regression of OMD and urachus leads to variety of birth anomalies. Prevalence of all urachal anomalies in pediatrics age patient is around 1.03% and incidence in male in comparison to female is more than three times [3].

## Case Presentation:

A 6 year old male child admitted in general surgery ward with history of umbilical wetness and clear watery discharge from umbilicus since infancy. On examination child was having small red pink, sessile polyp like lesion inside the umbilicus and serous discharge was coming out through umbilicus. Patient had no history of urinary abnormality. Therefore clinical diagnosis of umbilical polyp was made. (figure 1a)

Patient was planned to surgical exploration through umbilical route. Routine laboratory investigations including complete blood count, blood chemistry and urinalysis were within normal limits. Umbilicus was explored through lower periumbilical curvilinear incision. On exploration a tract was present in sub-umbilical area. (figure 1b) On further exploration toward pelvis this central prominent tract was connected through the dome of bladder and two lateral umbilical ligaments were present. (figure 1c). Polyp, small piece of lateral umbilical ligament along with central prominent structure excised near the dome of urinary bladder. The distal end of central prominent structure (urachus) was closed by absorbable suture and omphaloplasty was done. There was no intraperitoneal communication of this tract. Excised specimen was sent for histopathological examination. Post operative supportive treatment was given and the postoperative period was uneventful . On 2nd post-operative day patient's bowel habit started, therefore clear liquids allowed on day 2 post operatively and patient was gradually allowed to semi solid and after that to normal diet. On examination of histopathological section of central prominent structure (urachus) after staining with hematoxylin and eosin (400X) finding were tubular structure lined by transitional epithelium and surrounded by thick smooth muscle layer. (figure 2a) Histopathological examination of section of polyp stained with hematoxylin and eosin (100X) finding were colonic mucosa with surface ulceration and granulation tissue with adjacent tissue lined by keratinized squamous epithelium also present. (figure 2b)

### Discussion

Most common presentation of OMD remnants include umbilical mass which presents as red pink nodule inside the umbilicus resembling pyogenic granuloma, granulomatous tissue and various type of umbilical discharge e.g. fecal, bloody, serous mix nonspecific discharge [4,5]. Patent urachus presented as umbilical wetness, clear watery discharge, polyp, umbilical infection and recurrent urinary tract infection to avoid complication definitive treatment required [6]. Our patient presented with umbilical polyp and clear watery discharge from umbilicus which resembled with feature of Omphalomesenteric anomaly as well as patent urachus. Long duration umbilical lesions may require surgical intervention to prevent potential complication such as strangulated hernia, intestinal obstruction, hemorrhage etc. [1,2]. Our patient on umbilicus exploration having red pink polyp with urachus it may be incomplete involution of OMD duct and urachus.

### Conclusions

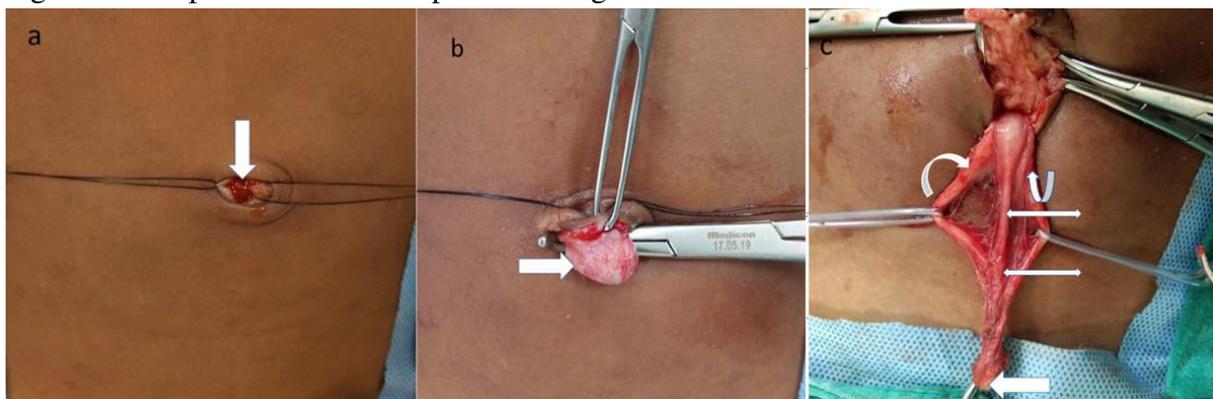
Majority of umbilical lesion in children is OMD anomalies and require surgery. Children of these anomalies may can present with urachus. During exploration of umbilical polyp, urachal anomalies should be kept in mind as well.

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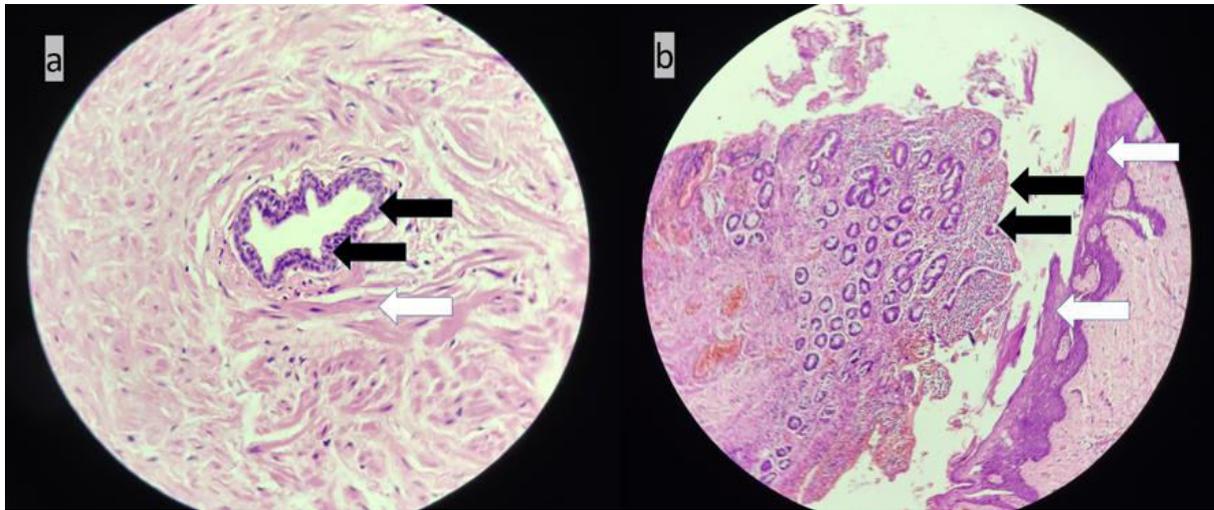
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Figure 1: Preoperative and Intraoperative image



- a- Preoperative image of patient having umbilical polyp (white arrow)
- b- Intraoperative image of patient having tract under the umbilicus (white arrow)
- c- Intraoperative image of patient having sessile polyp (white thick arrow), two lateral umbilical ligament (white curve arrow), central tract of urachus connecting the urinary bladder (white double headed arrow)

Figure 2: Histopathological image of anomaly



a- Haematoxylin and eosin staining (400X) of urachus anomaly showing tubular structure lined by transitional epithelium (black arrow) and surrounded by thick smooth muscle layer (white arrow).

b- Haematoxylin and eosin staining (100X) of OMD anomaly showing colonic mucosa with ulcerated surface (black arrow), granulation tissue and adjacent tissue lined by keratinized squamous epithelium (white arrow)