



## Umbilical Epidermoid Cyst Associated with an Urachal Remnant: A Case Report and Review of Literature

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### Abstract

Epidermoid Cysts (EC) are uncommon in children. They can occur on anybody surface but the most common sites of involvement include face, neck and trunk. Umbilicus is a rare site of involvement which sometimes leads to misdiagnosis. Herein we report a case of umbilical EC associated with an atretic urachal remnant in a 5-year-old boy. The patient is discussed under the light of relevant literature. Umbilical EC should be kept in mind in the differential diagnosis of a child with umbilical mass and awareness of this lesion can avoid its misdiagnosis and inappropriate treatment.

**Keywords:** Epidermoid cyst; Umbilicus; Urachal remnant

### Introduction

An EC is a benign cyst usually found on the skin of face, neck and trunk [1]. It has been postulated that it derives from ectodermal tissue lined by the squamous epithelium devoid of skin appendages. They may occur anywhere on the body except palms of the hands and soles of the feet [2,3]. Umbilicus is a rare site of involvement in EC and when located in the umbilicus, EC usually leads to misdiagnosis including umbilical hernia, umbilical polyp and remnants of umbilicus and urachus [1,4-6]. In this report, a 5-year-old boy with an umbilical EC associated with an atretic urachal remnant is presented and discussed. It is also aimed in this report to review the presentation and management of these patients. Awareness of this lesion can avoid its misdiagnosis and inappropriate treatment.

### Case Presentation

An otherwise healthy 5-year-old boy presented with a swollen was in his umbilicus (Figure 1). The history of the patient revealed that this mass had been present since birth. There was no pain, no discharge from umbilicus, but an increase in size of swelling was noted by his parents and this prompted the family to seek a medical assistance. Physical examination revealed a subcutaneous mass without tenderness, soft in consistency, non-reducible and mobile in all directions. Ultrasound of the mass and abdomen revealed a subcutaneous mass without a connection to the abdominal cavity or internal organs. Surgical intervention under general anesthesia revealed a lipomatous mass connected with an atretic urachal remnant and total excision was performed with a circumumbilical incision (Figure 2). Histopathological assessment revealed an EC associated with an atretic and obliterated urachal remnant. The child made a good post-operative recovery and was discharged home well the following day. The infant is otherwise well with no significant past medical history.

### Discussion and Conclusion

Derived from ectodermal tissue, an EC is a benign lesion commonly found on the skin. It usually involves the scalp, face, neck, back and trunk [7]. It is usually asymptomatic and when it ruptures, and its keratin content faces with the dermis, foreign body reaction may be incited [8]. Usual reasons for seeking medical assistance in these patients include infection and an increase in size producing damage to adjacent anatomical structures [9]. Increase in size of umbilical mass in the presented case was the reason for his family to seek for medical aid. Differential diagnosis of EC includes dermoid cysts, lipomas and pilomatrixomas [4].

Umbilicus is an uncommon site for EC and usually leads to a misdiagnosis. Literature on this issue is scarce and to our knowledge only a 9-year-old boy with an umbilical EC above fascia has been reported previously [5]. Our case is unique in that, to our knowledge, he is the youngest patient with umbilical EC reported in the English language literature. It has also been reported that umbilical EC may also occur following abdominoplasty [10,11]. The differential diagnosis of umbilical EC include

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Received Date: 01 May 2018

Accepted Date: 14 May 2018

Published Date: 21 May 2018

#### Citation:

Erikci VS. Umbilical Epidermoid Cyst Associated with an Urachal Remnant: A Case Report and Review of Literature. *World J Surg Surgical Res.* 2018; 1: 1010.

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**Figure 1:** The male infant with an irreducible umbilical mass.



**Figure 2:** Operative view at exploration. Note the umbilical mass is attached to the UR.

umbilical hernia, umbilical cord hernia, umbilical polyp, urachal remnant in children, and umbilical adenoma, Sister Mary Joseph nodule, caput medusa and desmoid in adults [1,4].

The urachus is a connection between the fetal bladder and the allantois. There is a wide spectrum in the presentation of Urachal Remnants (UR) including patent urachus, urachal sinus, urachal diverticulum, urachal cyst and atretic UR or urachal chorda and there is no consensus on the management of these lesions [6]. Although it is stated that asymptomatic and non-specific atretic URs can be safely managed non-operatively and that these will often resolve without intervention, it is generally admitted that URs should be resected as chronic exposure to urinary stasis, infection and inflammation in the remnant may predispose to urachal carcinoma [6]. Umbilical appearance may differ in patients with UR. Although an incidence of 9.7% abnormal appearance of the umbilicus on examination has been reported previously, to our knowledge, there is no case with umbilical

EC associated with a UR. Besides being the youngest patient in the English language literature having umbilical EC, the presented case in this report is unique in that although preoperatively it was not known that the patient had an associated UR, during surgical intervention, the umbilical EC was found to be associated with an atretic urachal remnant which was confirmed histopathologically after total excision of the mass.

In conclusion, slow growing and often painless ECs rarely cause problems or need treatment. When located in uncommon sites such as umbilicus as in the presented case, EC may produce diagnostic dilemma leading to inappropriate treatment and should be resected. The presented case shows that umbilical EC and an atretic UR may coexist in the same patient. This report adds to literature that these two entities can be seen in the same patient and the physicians and radiologists should be aware of this rather rare clinical entity and appropriate surgical intervention is paramount.

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