

# Omphalolith: An Underdiagnosed Entity?

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## Abstract

Omphalolith is a rare and underdiagnosed entity due to the accumulation of sebum and keratin in the umbilicus. It usually occurs in the elderly with deep and narrow umbilicus. Early recognition of omphalolith is important to prevent complications, unnecessary investigations and anxiety. We report herein two new cases of omphalolith.

## Omphalolith: An Underdiagnosed Entity

*Running header:* Omphalolith

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## **Title: Omphalolith: An Underdiagnosed Entity**

### *Abstract*

Omphalolith is a rare and underdiagnosed entity due to the accumulation of sebum and keratin in the umbilicus. It usually occurs in the elderly with deep and narrow umbilicus. Early recognition of omphalolith is important to prevent complications, unnecessary investigations and anxiety. We report herein two new cases of omphalolith.

### *Introduction*

The umbilicus is a remaining scar in the center of the abdomen following the removal of the umbilical cord (1). It has different shapes. Multiple affections can raise in this area including metastasis (Mary Joseph's nodule) and endometriosis. Less commonly reported yet benign conditions are important to diagnose. Omphalolith is a rare and underdiagnosed entity due to the accumulation of sebum and keratin in the umbilicus. It usually occurs in the elderly with deep and narrow umbilicus. Neglect and poor corporal hygiene represent the main risk factors. Early recognition of omphalolith is important to prevent unnecessary investigations and anxiety. Delayed diagnosis may lead to complications including irritation, erosions, bleeding, pyogenic granuloma, abscess formation, cellulitis or even peritonitis. We report herein two new cases of omphalolith and provide a comprehensive summary of its characteristics.

### *Case presentation*

#### *Case 1:*

A 28-year-old female patient presented with a dark nodule on the umbilicus. She didn't report pain, bleeding, discharge, or trauma and denied recent fever or weight loss. Past medical history was consistent with Wilson's disease with cirrhosis and hyperkinetic extrapyramidal symptoms. She was entirely dependent on her mother for daily activities. Clinical examination revealed a firm, keratotic, black nodule protruding out of the umbilicus, measuring 2 x 1 cm (Figure 1A). The surrounding skin was otherwise normal. Gentle traction of the nodule using dermal forceps allowed its extraction (Figure 1B). The underlying skin didn't show signs of inflammation. Histopathological examination revealed laminated keratin (figure 1C). The diagnosis of omphalolith was made. Proper hygiene was advised.

#### *Case 2:*

A 54-year-old obese female patient with no medical history presented with a firm, keratotic, brownish nodule protruding out of the umbilicus, measuring 1,5 x 1 cm (Figure 2A). The surrounding skin was otherwise normal. Dermoscopic examination revealed a dry crusted pigmented lamellar keratotic material (Figure 2B). The diagnosis of omphalolith was suspected. After 15mn application of petroleum jelly, gentle traction using dermal forceps allowed its extraction (Figure 2C). It revealed a narrow and deep umbilicus with no signs of inflammation or ulceration (Figure 2D). The patient was reassured of the benign character of the condition and proper body hygiene was advised.

### *Discussion:*

Omphalolith or umbilical concretion is a rare and benign affection due to the accumulation of sebum and keratin in the umbilicus (2,3). It usually presents as a firm black mass. The pigmented color of the majority of omphaloliths is explained by melanin accumulation and lipid oxidation (4).

Omphalolith mainly affects elderly women with deep and narrow umbilicus and poor corporal hygiene (5). Obesity is another predisposing factor (5,6). In the first case, a deep and retracted umbilicus associated with insufficient hygiene led to the formation of the omphalolith in a young and non-obese female patient. Having Wilson's disease with neurological symptoms and being dependent on her mother may explain insufficient hygiene in this case. In the second case, a narrow and deep umbilicus associated with obesity predisposed to omphalolith.

Omphalolith usually remains asymptomatic for several years. It can be noticed by chance or after secondary complications (3). Repetitive trauma can cause irritation, erosions, bleeding, and pyogenic granuloma. Secondary infection, abscess formation, cellulite, or even peritonitis can also be the revealing symptoms of this condition (3,4,6) .

The diagnosis of omphalolith is based on clinical examination. Dermoscopy shows aggregates of pigmented keratin. If a histopathological examination is performed, it reveals laminated keratin associated with amorphous sebaceous material.

Differential diagnoses include malignant tumors comprising Mary Joseph's nodule and malignant melanoma. Benign affections can mimic umbilical concretion such as keloids, umbilical endometriosis, dermatofibroma, and persistent omphalomesenteric duct (1,2,6). Therefore, early recognition of omphalolith is important to prevent unnecessary investigations.

The treatment consists of a gentle extraction of the calculus using forceps (5,6). In our cases, it allowed the extraction of the entire mass with no bleeding. Excision of an associated pyogenic granuloma can be necessary in some cases. Patients' education on proper corporeal hygiene is paramount to prevent recurrences (3,4,6). The excision of the umbilicus may be recommended in some recalcitrant cases(1).

#### FIGURES:

Figure 1: 1A: Black nodule of the umbilicus; 1B: Omphalolith after removal. three black nodules with horny-like projections; 1C: Histopathological aspect of the omphalolith showing laminated keratin (HE x20).

Figure 2: 2A: Keratotic, brownish nodule protruding out of the umbilicus; 2B: Omphalolith after removal: black keratotic nodule; 2C: Narrow and deep umbilicus with no signs of inflammation or ulceration; 2D: Dermoscopic aspect: dry crusted pigmented lamellar keratotic material.

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