

A Case of Omphalith

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Omphalith is a compaction of keratinous and sebaceous material in the deeply set umbilicus. It may be clinically mistaken for a malignant melanoma because of its pigmented surface and sudden appearance. However, careful probing and removal of this umbilical mass, followed by histopathological examination readily identifies its true nature.

We describe a patient who presented with a firm, black umbilical mass diagnosed as an omphalith and reviewed the differential diagnosis of a firm, black umbilical mass.

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Key Words : Differential diagnosis, Omphalith

An umbilical mass can be initially a puzzling problem for dermatologists because it may represent one of many benign and malignant lesions or an underlying systemic disease, including metastasis of an internal malignancy. However, there have been few references in the literature with regard to a firm, black umbilical mass¹⁻⁵.

Herein we report a case of omphalith and review the differential diagnosis of a firm, black umbilical mass.

REPORT OF A CASE

A 33-year-old woman presented with an asymptomatic, firm, black umbilical mass. The patient did not know how long the mass had been present. There was no history of umbilical anomaly. She denied any prior manipulation or treatment of the umbilical lesion. Examination revealed an asymptomatic, ovoid, dark brown to black, lamellated, hard mass firmly adhered to the umbilical orifice (Fig. 1). There was no drainage or periumbilical inflammation. Gentle and steady extraction by a forcep permitted the total removal of the 2.3 by 1 cm

firm mass. The surface exposed to the umbilical orifice was dark brown to black; the remainder of the lesion was white and had a cheesy odor. Probing revealed a 2.5 cm deep umbilicus. The lesion was evaluated histologically and showed a dense concretion of laminated compact keratin interspersed with amorphous material (Fig. 2). No umbilical epithelium was obtained. Ultrasonographic examination showed no abnormality of umbilicus. Follow-up evaluation 6 months later revealed no discharge or recurrence.

DISCUSSION

An omphalith is an accumulation and concretion of keratinous and sebaceous material in the umbilical region^{6,7}. It is also known as a keratolith or omphalokeratolith¹. The derivation of the latter term comes from the Greek words omphalos (navel), keras (horn), and lithos (stone)¹. It may be a peg-shaped, round, or ovoid mass 1 or 2 cm in diameter and greater than that in length. The exposed surface appears to be dark brown or black, owing, presumably, to the presence of oxidized melanin and sebum. However, its sides, after extraction, are pearly-white. Symptoms are generally quite mild or absent, except for the feeling of a lump deep in the skin or the presence of a black-surfaced structure in the orifice of the umbilicus. Only rarely is there pain, exudation, or purulence⁶. The

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Fig. 1. Pigmented omphalith in the umbilicus (inset ; after extraction by careful probing).

clinical features of our case were well consistent with that of omphalith.

The pathogenesis of omphalith is yet unknown. Although it is usually related to lack of adequate personal hygiene, this patient's deeply set umbilical cleft may have predisposed it to the accumulation of sebum and keratin, leading to the gradual concretion of a mass^{1,3}. In this regard, Friedman et al⁸ proposed the assumption that the pathogenesis may be analogous to the formation of the large comedones of Favre-Racouchot syndrome.

The differential diagnosis for umbilical mass of the present case includes various benign and malignant tumors that may be seen in the umbilicus¹⁻³. Umbilical cholesteatoma is an accumulation of crumbling, fetid masses in the umbilicus, often accompanied by seborrhea which may lead to abscess formation. Seborrheic keratosis may present as yellowish, brown, greasy, warty growths that often extend outward from the umbilicus. Epidermal cysts associated with the umbilicus may appear as asymptomatic, slowly enlarging masses or as intermittent, foul-smelling drainage from the umbilicus. Other benign tumors of the umbilicus such as nevi, fibroepithelial papilloma, dermatofibroma and keloid may mimic our case. Primary malignant tumors of the umbilicus are very rare. They are primary adenocarcinoma of the urachal elements, squamous cell carcinoma, malignant melanoma, basal cell epithelioma and myosarcoma. Among these malignant melanoma is another source of confusion with this case because of dark pigmentation on its surface. Also the umbilical metastatic lesions (Sister Mary Joseph's nodule) from visceral

Fig. 2. Lamination of compact keratin and amorphous material (H & E, $\times 40$).

malignancies especially from the stomach should be included in the differential diagnosis. They usually occur as firm irregular nodules but can occasionally infiltrate diffusely or ulcerate with a fetid discharge. The firm or hard consistency of an umbilical mass does not help differentiate between a benign and malignant lesion. The many possible causes of an umbilical mass necessitate careful clinical examination and histologic confirmation to eliminate the possibility of malignant lesions. In our case, at first, it was difficult to diagnose the umbilical mass correctly, but, fortunately, the application of gentle, steady traction of the mass with toothed forceps allowed easy identification of an omphalith. It was confirmed by histopathological examination.

Microscopic examination of omphalith as shown in our case reveals laminated keratin, frequently interspersed with amorphous material resembling sebum¹⁻³. The amorphous material may contain hairs (terminal and vellus) and bacteria. A positive Fontana-Masson stain indicates that the black color is derived in part from melanin, though oxidized lipids are also responsible for the dark color. However, unfortunately, we could not perform these stainings because of the brittleness of the specimen.

Omphaliths may be sufficiently treated with sole extraction, particularly for obese patients^{1,7}. Slender patients, however, may have a band connecting the ileum to the umbilicus⁶. In this case, ultrasound studies were done, but no abnormalities of umbilical structures were found. Follow-up evaluation 6 months later revealed no discharge or re-

currence.

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