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Case report

Hidradenoma masquerading digital ganglion cyst: A rare phenomenon

Navnit Makaram [a, *], Iskander H. Chaudhry [b], Makaram S. Srinivasan [c]

[a] Department of Surgery, Ninewells Hospital & Medical School, University of Dundee, Dundee, DD1 9SY, UK
[b] St. James's University Hospital, 16 17 Beckett St., Leeds, West Yorkshire, LS9 7TF, UK
[c] Royal Blackburn Hospital, East Lancashire Hospitals NHS Trust, Blackburn, BB2 3HH, UK

HIGHLIGHTS

- We describe the rare phenomenon of an atypical cystic hidradenoma mimicking in presentation a mucous ganglion cyst on the DIPJ of the finger.
- We put this rarity into context by performing a literature review of reported presentations of such tumours.
- We emphasise the importance of a thorough and systematic assessment in patients presenting with such lesions.
- Also highlighted is the importance of considering these tumours in the differential diagnosis of lesions of the DIPJ.
- Thorough immunohistochemistry of resulting biopsies is invaluable in aiding diagnosis in these scenarios of ambiguous soft tissue swellings.

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ABSTRACT

Introduction: Mucous cyst is the commonest soft tissue tumor in the dorsum of the distal interphalangeal joint (DIPJ) of the finger. We report the first case of a recurring eccrine tumor (nodular hidradenoma), mimicking a mucous/ganglion cyst, on the dorsum of the DIPJ.

Case report: A 54 year old man presented with painless, hemispherical, colored swelling on the dorsum of his right middle finger (dominant hand), which appeared to have recurred from a previous surgery. The lesion was excised and operative findings from the medical notes showed the gross appearance to be a soft, white, glistening, smooth-surfaced, myxoid nodule resembling a “ganglion cyst”. Immunohistochemistry showed the tumour to be positive for S100, smooth muscle actin and cytokeratin 7. Ductal differentiation was confirmed by staining for epithelial membrane antigen and carcinoembryonic antigen. The histological features were that of atypical and solid cystic hidradenoma.

Discussion: This is the first reported case of this rare tumour presenting as mucous cyst. We conduct a review of the literature of nodular hidradenomas, illustrating the immunohistologic findings in this tumour to emphasise the atypical features.We emphasise the importance of considering hidradenoma in the differential diagnosis of such lesions of the finger, in view of its high recurrence rate and the possibility of malignant transformation.

1. Introduction

There are two types of digital ganglion or mucus cysts that develop on the dorsum of the digits between DIPJ and the proximal nail fold: (i) those arising typically
secondary to osteoarthritis of the DIPJ, and (ii) those arising independently of the joint, secondary to metabolic derangement of fibroblasts, producing hyaluronic acid. Both types of cyst occasionally cause mild pain or deformity of the nail bed secondary to pressure.

The clinical differential diagnoses of digital cyst include ganglion and synovial cysts, Heberden's nodes, gouty tophi, herpetic whitlow, molluscum contagiosum, rheumatoid nodules, sarcoidosis, post-trauma-induced nodules, giant cell tumour of tendon sheath, implantation dermoid, dermatofibroma, pyogenic granuloma, leiomyoma, and adenexal tumors. Rarely, malignant

* Corresponding author.
E-mail addresses: navnit_makaram@hotmail.co.uk (N. Makaram), i.h.chaudhry01@gmail.com (I.H. Chaudhry), makaram@btinternet.com (M.S. Srinivasan).

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conditions such as basal cell carcinoma, squamous cell carcinoma, and melanoma should be considered. For a definitive diagnosis, tissue examination of the lesion is required, with ancillary investigation such as immunohistochemistry in difficult cases.

2. Case report

In July 2013, a 54-year-old man presented with a painless, hemispherical, skin-colored swelling on the dorsum of his right middle finger (dominant hand), which appeared to have recurred from a previous surgery. The lump had grown insidiously over a year to 15 × 8 mm, causing mild aching, and was a nuisance to the patient. The patient also had a recurrence of pea-sized lesions (8 × 8 mm) on the dorsal aspect of the same finger (Fig. 1). He worked as a self-employed furniture removals man.

Local examination revealed a soft, mobile skin-colored globular mass, with multiple bosselations, just distal to the DIPJ on the dorsum of the patient's right middle finger, with associated nail indentation.

There was also a healed surgical scar, indicating the site of failed previous surgery and recurrence. Trans-illumination test was negative and the skin over the swelling was shiny with no surface inflammation. Radiography showed that the joint space was normal and well preserved.

Review of the patient's notes showed that he had presented initially in April 2012 to another physician with a similar painless, hemispherical, skin-colored swelling on the dorsum of the same right middle finger (dominant hand). Local examination in 2012 by the previous hand surgeon revealed a pea-sized, soft, mobile, skin-colored globular mass just distal to the DIPJ. The operation notes stated that a curvilinear incision was used to excise the swelling.

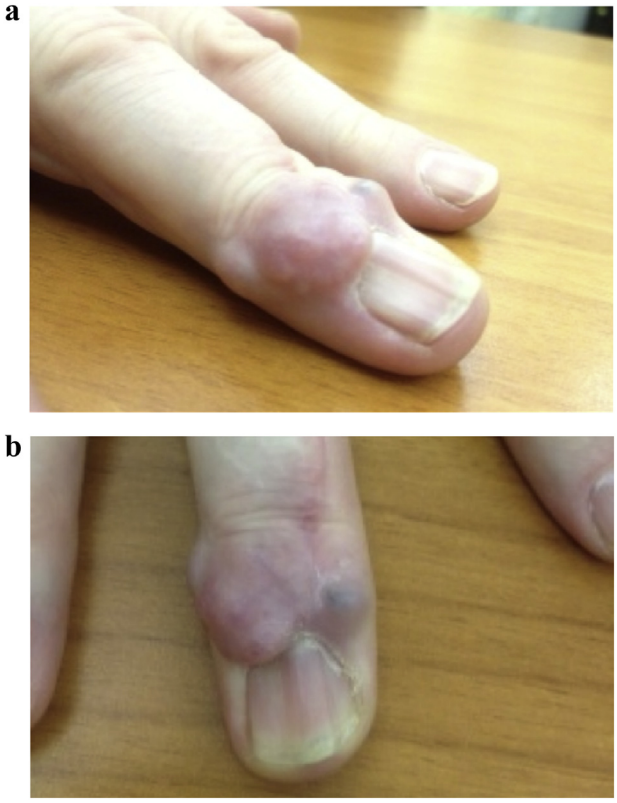

Fig. 1. **a**: Swelling over DIP joint masquerading as digital ganglion cyst with previous surgical scar of prior surgical excision, and nail deformity. **b**: Swelling over DIP joint masquerading as digital ganglion cyst with previous surgical scar, and nail deformity.

Operative findings from the medical notes showed the gross appearance to be a soft, white, glistening, smooth-surfaced, myxoid nodule resembling a “ganglion cyst.” There was no obvious spur in the DIPJ. Postoperative histology reports were not available.

Based on this, a diagnosis of a possible recurrence of the mucous cyst was made, and the patient was listed for a revision surgery.

Wide local excision was made through a curvilinear incision, based proximally, and the skin flaps were raised very carefully to prevent any seeding. The swelling appeared to be 15 × 8 mm in diameter, with a bosselated nodular surface and a few cystic areas. The grayish bosselated soft tissue mass was excised totally from either side of the extensor tendon, with the attachment of this tendon to the distal phalanx preserved. Any spur or osteophyte in the region of the DIPJ was removed with fine rongeurs. The DIPJ and distal phalanx was covered with the proximally based skin flap de-rotated to cover the extensor tendon.

The postoperative course was uneventful, with the wound healing by primary intention in 12 days, and the patient regained full function and range of movement in 3 weeks.

Histologically, the tissue sample showed features of fibrous tissue containing a multi-nodular basaloid tumor showing peripheral palisade and high nuclear to cytoplasmic ratio (Fig. 2a–d). There was evidence of squamous morules and ductal differentiation. This lesion had an increased mitotic activity. Immunohistochemistry showed the tumor to be positive for S100, smooth muscle actin and cytokeratin 7. Ductal differentiation was confirmed by staining for epithelial membrane antigen and carcinoembryonic antigen. BerEP4 also highlighted the ducts, but the remaining tumor was negative. The proliferation index (Ki67 staining) was high. The lesion was found to be incompletely excised. The features differed from a conventional “hidradenoma”, given the increased mitotic activity and proliferation index, and the lesion was classified as “atypical solid and cystic hidradenoma.”

The histological results of the previous excised lesion in 2012 were then traced to the local National Health Service hospital, and were found to suggest that the primary lesion was suggestive of a “possible cystic hidradenoma; ” however, immunohistochemistry had not been performed.

The differential diagnosis includes myoepitheliomas, poromas and aggressive digital papillary adenocarcinomas (ADPA). Myopeitheliomas tend to be circumscribed firm tumours, usually located in the deep soft tissue and have a pseudolobulated growth pattern with small cellular aggregates embedded within hyalinized and chondroid matrix. Poromas are distinguished from hidradenomas by their connection to the overlying epidermis. ADPAs are usually poorly circumscribed lesions, involving the dermis and subcutis and consist of both solid and cystic components; characteristically they show tubulo-alveolar and ductal structures with areas of papillary projections protruding into cystic lumina; such features are not evident in our case. Furthermore, ADPA is usually mistaken for a metastasis rather a primary adnexal tumour.

The patient has now been followed up regularly for over 2 years, and has been informed of the chance of recurrence and the unpredictability of lesions that have atypical features but fall short of a malignant diagnosis. Over the past 4 months, there has been little change in the finger appearance, and he continues to have normal function.

3. Discussion

Cutaneous adnexal tumours are a large group of benign and malignant neoplasms. They exhibit morphologic differentiation towards one of the four primary adnexal structures present in