

Subungual epidermoid inclusions

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ABSTRACT

Subungual epidermoid inclusions are protrusions of the nail bed epithelium into the upper most bed stroma. They may be associated with hyperplasia of the bed epithelium resulting in subungual keratosis, onycholysis or even clubbing. An 11-year-old girl presented to our dermatology clinic with a one year history of progressive increase in the size of the distal part of her left thumb associated with mild pain on pressure. The diagnosis became evident perioperatively, which showed multiple subungual epidermoid inclusions.

Saudi Med J 2004; Vol. 25 (4): 522-523

The nail apparatus can infrequently be affected by cystic lesions, which may include subungual epidermoid inclusions, implantation epidermoid cysts, and onycholemmal cysts.¹ The patient may present with a localized shooting pain, enlarged finger tip, clubbing, grooving, ridging, onycholysis or even anonychia of the nail. A girl is presented in this report with enlarged tip of her left thumb, which was due to subungual epidermoid inclusions.

Case Report. An 11-year-old Saudi girl presented to our dermatology clinic with a one-year history of progressive enlargement of the distal part of the left thumb associated with mild pain on pressure. She had no history of infection or trauma at that site and no habitual manipulation of her nails or thumb according to her mother. Physical examination revealed enlargement of the distal part of the left thumb transversely and longitudinally including the nail plate with regular transverse short grooving, ridging and loss of the cuticle (**Figure 1**). There was no sign of paronychia in the nail fold. Our clinical differential diagnosis included subungual epidermoid inclusions, epidermoid cyst and soft tissue tumor such as glomus tumor. X-ray

and magnetic resonance imaging revealed no bone or soft tissue abnormality. A transverse fusiform nail biopsy showed marked subungual orthokeratosis, thickened keratin layer interspersed by variable sized spaces with some containing coagulated serum and mild acanthosis (**Figures 2 & 3**). Therefore, the diagnosis of subungual epidermoid inclusions was confirmed ruling out the presence of nail tumor. Postoperatively, the patient was regularly followed up for 4 months. The biopsy site healed with no signs of nail dystrophy and the tip of the thumb gradually reduced in size.

Discussion. Nail cysts represent a broad group of lesions that differ in histogenesis and clinical picture. They can be subungual implantation epidermoid cysts or subungual epidermoid inclusions or epidermoid cyst of the distal phalanx or onycholemmal cysts.¹ Epidermoid cysts are among the most common benign tumors of the skin but their location in the nail apparatus is infrequent. When they occur in the skin, they are believed to result from damage to the pilosebaceous unit² but this explanation is not valid for their occurrence in the nail apparatus. Subungual epidermoid cysts are

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Received 20th October 2003. Accepted for publication in final form 17th December 2003.

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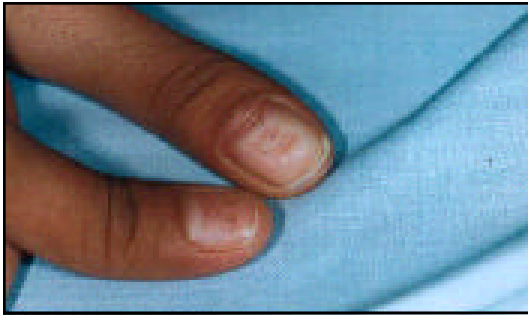


Figure 1

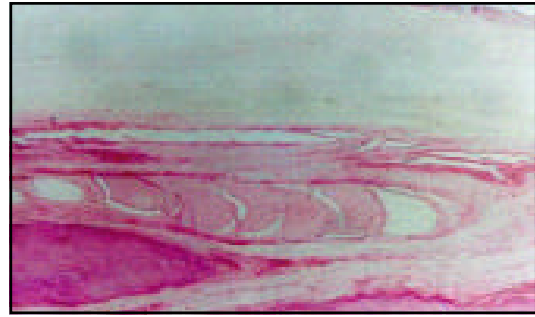


Figure 3

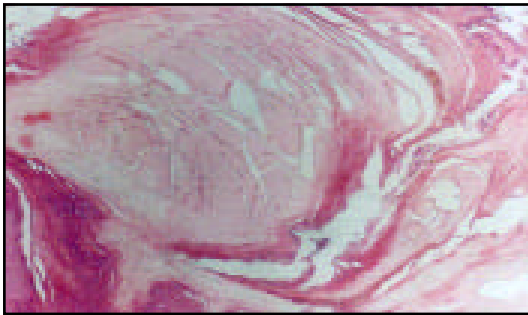


Figure 2

Figure 1 - Enlargement of the left thumb as compared to the right thumb with transverse regular grooving.

Figure 2 - Histologic appearance showing subungual orthokeratosis, thick keratin layer interspersed by cysts containing coagulated serum (Hematoxylin-eosin stain).

Figure 3 - Another histological section showing the thick keratin layer interspersed by one of the cysts (Hematoxylin-eosin stain).

pathophysiologically considered as implantation epidermoid cysts since heavy trauma plays an important role in their development leading to the epidermal implantation in the subcutaneous tissue or even bone.³ Clinically, the distal phalanx of the digit gradually increases in size with pain being of late onset due to bone compression, which may eventually lead to fractures.⁴ Other clinical presentations, include shooting pain or even an acquired pincer nail.⁵ Histologically, the cyst is unilocular, lined by thin epidermoid epithelium and filled with orthokeratin. Subungual epidermoid inclusions are protrusions of the bed epithelium into the uppermost bed stroma leading to marked hyperplasia of the bed epithelium and resulting in subungual keratosis, onycholysis or dystrophic nail plate and histologically similar to the implantation epidermoid cyst.^{6,7} On the contrary, epidermoid cyst of the distal phalanx is characterized by a painful, enlarged distal phalanx associated with recent trauma. X-ray and histology show lesions arising from the bone differentiating it from the subungual epidermoid cysts.⁸ Other tumors in the nail and its surroundings include glomus tumors, endochondroma and neurilemmomas. These tumors may cause nail deformation due to chronic pressure on the nail matrix or nail bed⁹ producing enlargement of the finger tips, clubbing, grooving, ridging, onycholysis or anonychia of the nail.¹⁰ Our patient was diagnosed as a case of subungual

epidermoid inclusions affecting the left thumb nail area since there was negative history of trauma to the area and the lesion is multilocular. The midline ridging and the thumb enlargement could be explained by the prolonged pressure effect exerted on the nail matrix by the large size of the inclusions.

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