LARGE SIZED EPIDERMAL INCLUSION CYST OF THE PALM – CLINICAL, LABORATORY AND HISTOLOGICAL FINDINGS

Mihaela Perţea[1,4], Vladimir Poroch[3,4*], Raid Issa[1], Oxana-Madalina Grosu[1], Sorinel Luncă[2,4]

1. „Sf. Spiridon" Emergency Hospital, Iasi
Clinic of Plastic and Reconstructive Surgery
Regional Institute of Oncology, Iasi
2. Clinic of Surgery II
3. Palliative Care Department
4. University of Medicine and Pharmacy "Gr.T. Popa" Iasi

LARGE SIZED EPIDERMAL INCLUSION CYST OF THE PALM – CLINICAL, LABORATORY AND HISTOLOGICAL FINDINGS (Abstract): The epidermal inclusion cysts are among the most frequently encountered excised lesions. However, large cystic lesions with palm location are a rare event with very few cases reported in the literature. We present the case of a 68-year old male patient with a history of slow growing subcutaneous, large-sized (6.5/2.5cm) tumor in the right palm. The mass has intimate contact with the flexor tendons of the 4th and 5th fingers and with the common neurovascular pedicles, but no neurological symptoms were noted. The cystic lesion was excised together with its entire capsule and the histopathological examination established the diagnosis of epidermal inclusion cyst. The outcome was favorable with complete recovery. We emphasize the rarity of epidermal inclusion cyst in the palm and that the surgeon should be aware that even in the absence of a traumatic event or proven infection with human papillomavirus a diagnosis of palm epidermal inclusion cyst must be taken into account. **Key words**: HAND, EPIDERMAL CYST, SURGERY, HISTOPATOLOGY

INTRODUCTION

Epidermal inclusion cysts are common lesions, accounting for approximately 85-90% of the excised cystic lesions (1). The most common locations of these cystic formations are face, neck, scalp, thorax, extremities, or scrotum (2, 3). It is rarely encountered in hairless areas, such as palm region (2). They can occur in any decade of life, but they are more common in patients aged between 30 and 40 (3,4). These cystic tumors are most often the consequence of an epidermal inclusion incurred after a trauma or an infection with human papillomavirus (HPV) (5,6). We are reporting the case of a 68-year old patient with a large-sized epidermal inclusion cyst in the mediopalmar region, without any known cause, successfully surgically treated.

MATERIAL AND METHOD

We are reporting the case of a 68-year old patient with a large (5.5 over 2.5 cm) fusiform tumor, in the mediopalmar region. The tumor had a slow growing of approximately 12 years. The patient was unable to indicate a trauma preceding the occurrence of the lesion (fig. 1).

The clinical examination revealed a relatively firm, painless tumor, fixed on deep planes, covered by teguments with normal appearance. Despite the large size of the tumor, no neurological signs or symptoms were reported. The Posch sign was negative. The ultrasonography revealed the presence of a polycyclically contoured expansive, well-defined, hyperechogenic, homogeneous mass, in intimate contact with 3rd and 4th superficial flexors tendons of the fingers. An arterial structure of approximately 2 mm was observed tangent to the tumor, on the medial section, and lateral, tangent to it, a venous branch with Doppler signal was present. The tumor itself did not show a Doppler signal. The median nerve proximal to the lesion had a normal appearance. The ultrasonography con-

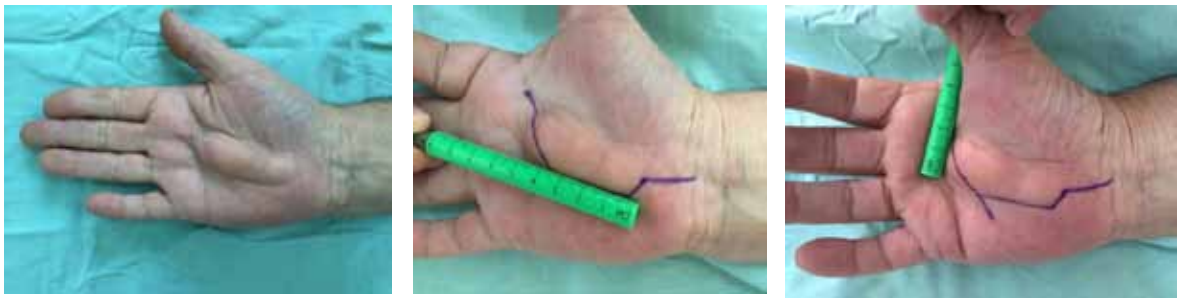

Fig. 1. A large medio-palmar fusiform tumor measuring 5.5 cm in length and 2.5 cm width ; the proximal part of the tumor was projecting over the median nerve traject

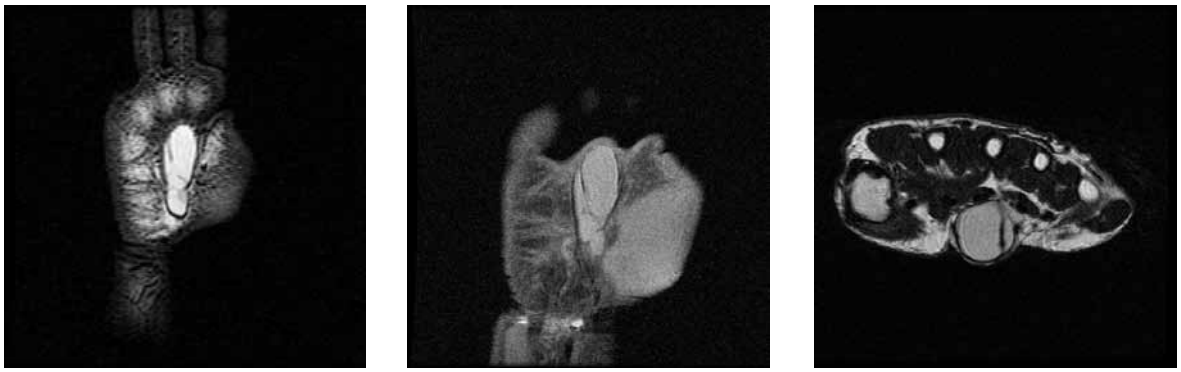

Fig. 2. MRI scan of the cystic tumor

cluded that the tumor met benignity criteria, suggesting the presence of a palmar lipoma. The magnetic resonance imaging (MRI) exam with contrast agent revealed the presence of a cystic-polyloculated tumor (hypersignal T2, hyposignal T1) with a moderate contrast medium uptake in the wall and septa, located on the palmar face of the right hand, with significant deformations of the region, and sizes of approximately 21/22/53mm a-p/t/c-c (fig. 2).

Based on the clinical examination and the MRI scan, the excision of the cystic lesion was performed. The cyst presented with a thick, bright white capsule, and a clabber (jogurt)-like content adherent to the cyst wall (fig. 3). The cyst has in intimate relation with the superficial flexors of the 3rd and 4th fingers and with the neurovascular packages (fig. 4).

Pathogenic aerobic bacterial flora was not isolated from the cyst contents. The histopathological examination established the diagnosis of epidermal inclusion cyst. The cyst presented with a continuous granular layer, lined by squamos epithelium and a lymphoplasmacytic inflammatory pericystic infiltrate was noted (fig. 5). The content of the cyst was represented by loose keratin material disposed in a lamellar fashion (fig. 6). A foreign body reaction cell to keratin debris and a lot of basophil material was also noted (fig. 7). At the level of the dermo-hypodermic junction a diffuse inflammatory infiltrate was present (fig. 8).

We have not tested for HPV infection. The postoperative outcome was uneventful with full reintegration after one month.

DISCUSSIONS

The epidermal inclusion cyst is a lesion that rarely occurs in hairless areas. Its potential location in the palm was mentioned in just a few studies (2,7). In most cases, it was located in the fingers (2), being relatively small in size. It was described the presence of an epidermal inclusion cyst with a diameter of 4.5 cm at the level of the thenar eminence (7).

The occurence of the epidermal cyst in glabrous skin areas is due to the posttraumatic or postoperative inclusion of small epidermal fragments in the dermis, which continue to produce keratin in the new location of implantation, leading to the development of the cyst (5,8). They occur most often in manual workers or people who underwent surgery in the palm (Dupuytren's contracture) or mere pinches/bites (9). The development of such cysts is slow and asymptomatic. The cyst can also become in-

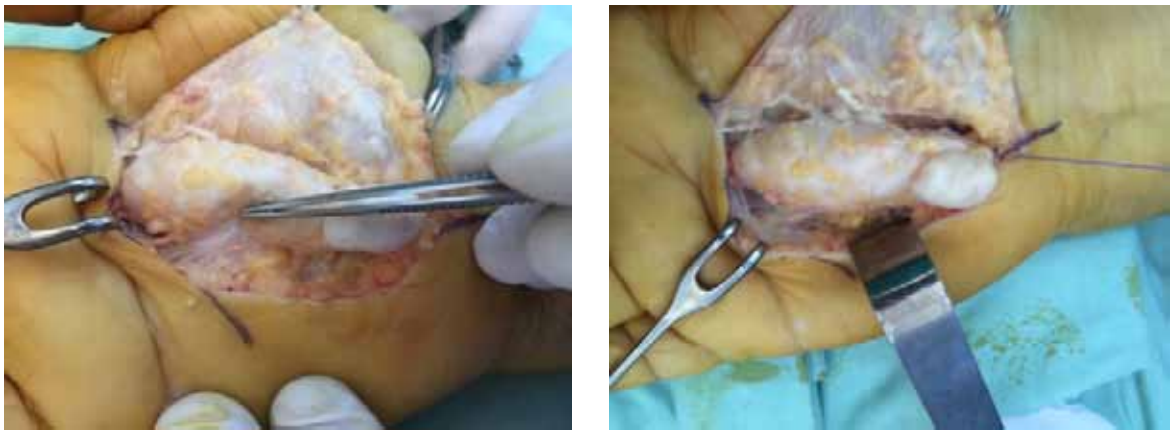

Fig. 3. Dissected cystic lesion presenting with a thick, bright white capsule

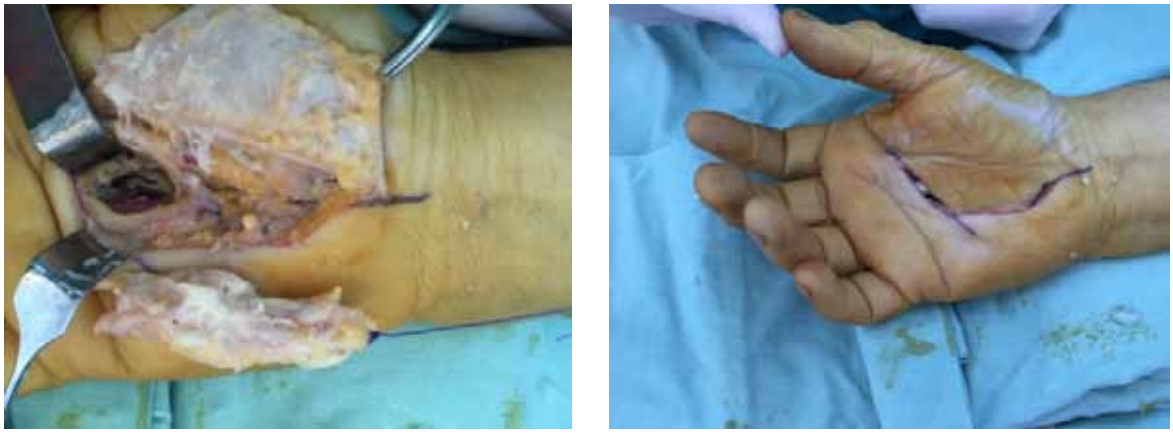

Fig. 4. Complete excision of the cystic lesion and post-excision aspect

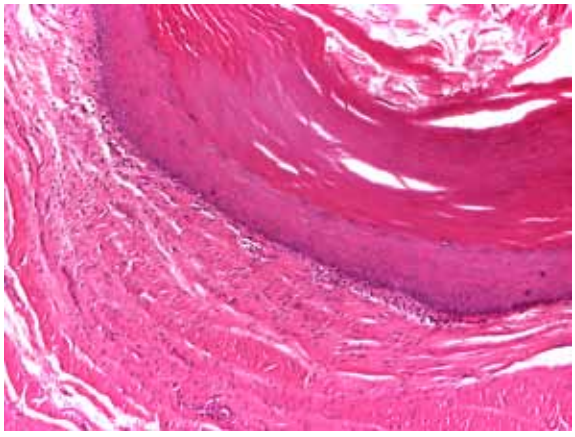

Fig. 5. Epidermal inclusion cyst lined by squamos epithelium cyst with lamellated keratin inside and inflammatory infiltate (HE, x4)

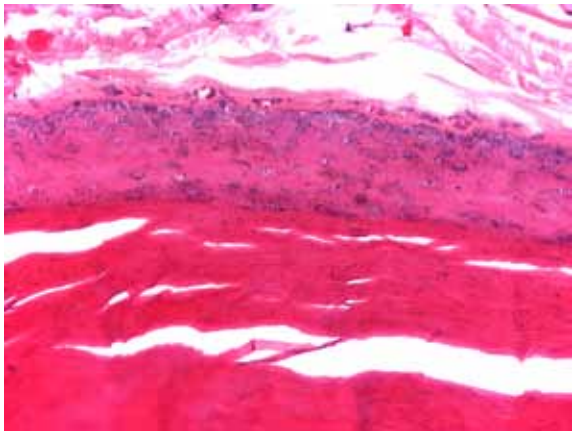

Fig. 6. Epidermal inclusion cystic wall, continous granular layer and lamellated keratine inside, HE, x10

flamed or infected in its development (3). In some cases it can cause neurological phenomena, such as paresthesias in the fingers (7, 10).

Its etiology has also been linked to HPV infection, exposure to ultraviolet light or obstruction of eccrine gland ducts (6,11,12).

Its location in the palm raises the issue of differential diagnosis with a large variety of hand tumors such as lipoma, mucoid cyst, foreign body granuloma, gouty tophus, giant cell tumor, hamartoma of the median nerve, schwannoma, or with some tumors localized in the flexor tendons sheath : fibroma or giant cell tumor (5,13,14).

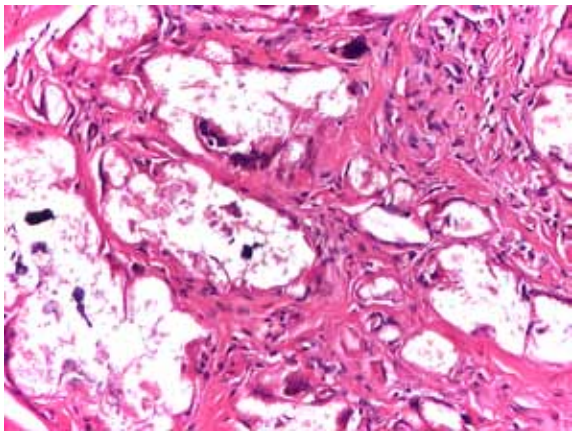

Fig. 7. Foreign body reaction cell to keratin debris and basophil material HE, x20

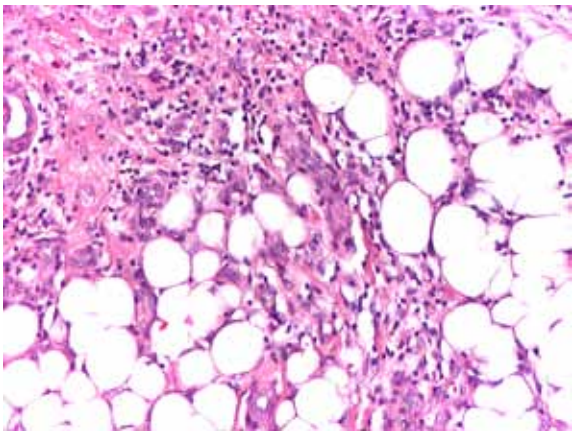

Fig. 8. Diffuse inflamatory infiltrate to the subjacent dermo-hypodermic junction, HE, x20

The diagnosis can be established after clinical examination, when a traumatic accident or a surgical intervention, which could lead to such a lesion, is revealed in the patient's history. When this is not the case, and the ultrasonography is unclear, the MRI scan is recommended in establishing the diagnosis (15).

The treatment is surgical, being indicated in all symptomatic cases. In the presented case, there were no neurological symptoms, the patient being bothered by the large volume of the tumor mass occupying his palm. It is recommended to excise the cyst completely, together with its entire wall, due to the fact that any residue could lead to relapse (4,5). The histopathologic examination confirmes the presence of a stratified squamous epithelium in the cyst wall, and a rich content of keratin (7,16).

The finding of the eccrine glands confirms the theory that the epidermoid metaplasia of eccrine glands is a consequence of HPV infection. Histopatologically, the association between the epidermal inclusion cyst and the HPV infection, cause the presence of the vacuolated cells, keratohyalin granules and eccrine glands (6,17, 18). However, in all cases stratified squamous cell epithelium and keratin are present (7). The absence of clear cell proliferation activity rule out malignancy (2).

In the presence of large, slowly-evolving tumor in the hand, even in the absence of traumatic, asymptomatic events in an elderly patient's medical history, the presence of an epidermal inclusion cyst must be taken into account (7).

CONCLUSIONS

While the epidermal inclusion cyst is a common condition, its location in areas without hair especially in the palm is rare. Sometimes it may be large sizes. Its occurrence is most often associated with minor trauma or with HPV infection. Surgery performed to remove the entire cyst and its content has been shown to yield good outcomes.

CONFLICT OF INTERESTS

The authors declare that they have no conflict of interests.

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Corresponding author

Vladimir Poroch
e-mail: vlader2000@yahoo.com