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CLINICAL PRACTICE

Therapeutic and diagnostic considerations in multiple eruptive clear cell acanthoma

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Abstract: *Clear cell acanthoma represent a benign solitary epidermal tumor of the clear glycogen containing epithelial cells, which is quite common in dermatologic practice. The etiology of this tumor formation is not known exactly at the moment. Clinically, the lesion appears as a single reddish papule or papule-nodule and the characteristic of this lesion is represented by a peripheral scaling collarette. Although solitary lesions represent the most common form of presentation of the acanthoma with clear cells, less than thirtieth cases of multiple clear cell acanthoma, from two up to four hundred lesions, have been described in the medical literature to date. The diagnosis based on clinical features frequently needs to be supported using a dermoscopy exam and, in most cases, a histopathology exam is required. The treatment consists is complete removal (standard surgical excision, cryotherapy, electrofulguration alone, carbon dioxide laser or shave removal or curettage followed by electrofulguration). For the cases with multiple lesions, cryotherapy, or topical 5-fluorouracil are preferred.*

We present the case of a 62-year-old male patient, presented to our Dermatology Department for multiple asymptomatic rounded papules and multiple exophytic nodular tumor formations (approximate fifteen), on the lower extremities, which had occurred approximately two years previously and gradually increased in number.

Keywords: *multiple clear cell acanthoma, glycogen containing epithelial cells, surgical excision, cryotherapy*

INTRODUCTION

Clear cell acanthoma represents a benign solitary epidermal tumor of the clear glycogen containing epithelial cells, which is quite common in dermatologic practice. The clear cell acanthoma was first described in 1962 by Dr. Degos et al. [1].

The etiology of this tumor formation is not known exactly at the moment. Clinically, the most frequent part of the body at which level the tumor can appear is represented by the lower limbs, although other portions of the body at which this lesion can develop are represented by the inguinal region or scrotum, scalp, face, vermilion mucosa, far palm, nipple, buttock, trunk, forearm, head and toe [2, 3]. The period with the highest incidence of this condition is represented by the middle-age, with a peak incidence

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between 50 and 60 years, and does not appear to occur in children. The studies did not show any sex predominance and there is no racial predilection.

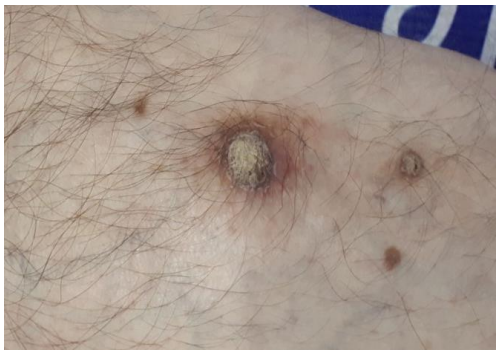
Clinically, the lesion appears as a single reddish papule or papule-nodule and the characteristic of this lesion is represented by a peripheral scaling collarette, but this sign is not always present [4]. Some of the nodules are covered with a thin crust rather than a keratinous layer and quite often they are exuding slight moisture [1,3]. Other features that can be representative of clear cell acanthoma include vascular blush and stuck-on appearance [5]. The lesions usually reach a diameter between 1mm and 4 mm until a few centimeters, but a giant tumor has been described by Duperrat et al. [1].

The lesions with this pattern, located at the level of an extremity, the unequivocal differentiation from Bowen's disease can be really difficult if is based only on clinical and dermoscopic features alone and is required a biopsy for the histological exam. The reflectance confocal microscopy has been used for the examination of the non-melanocytic neoplasms. The exam is usually showing microscopic findings similar to the optical histology.

CASE REPORT

We present the case of a 62-year-old male patient, from the urban area, non-smoking, presented to our Dermatology Department for multiple asymptomatic rounded papules and multiple exophytic nodular tumor formations (approximate fifteen), on the lower extremities, which had occurred approximately two years previously and gradually increased in number. On dermatological examination, the exophytic nodular tumor formations were well delimited on palpation with the diameter between 3mm and 15mm, some of them with exudative surface and reddish-brown nipples (Figure 2), while the other of the tumor formations had a dry surface, with a squamous and hyperkeratotic consistency (Figure 1 and Figure 3).

Figure 1: Nodular tumor formations



From his medical history, we found out that our patient is suffering from an HTA II degree and chronic venous insufficiency CEAP III; no history of drug ingestion was suspected. No other abnormal physical signs were found. Routine blood examination was in normal limits.

Figure 2: Nodular tumor formations

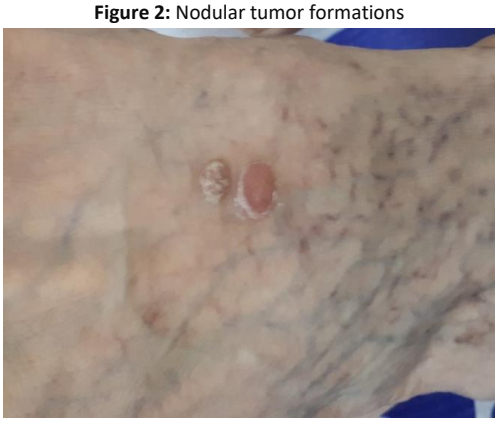
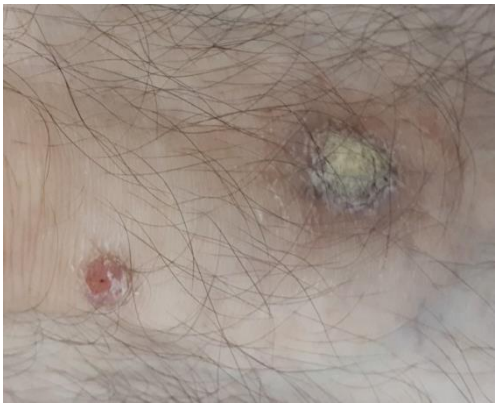


Figure 3: Nodular tumor formations with a dry surface and squamous and hyperkeratotic consistency.



Dermoscopy showed glomerular and punctiform vessels with a “pearl necklace” distribution. This image is highly characteristic of clear cell acanthoma (Figures 4 and 5).

Figure 4: Dermoscopy

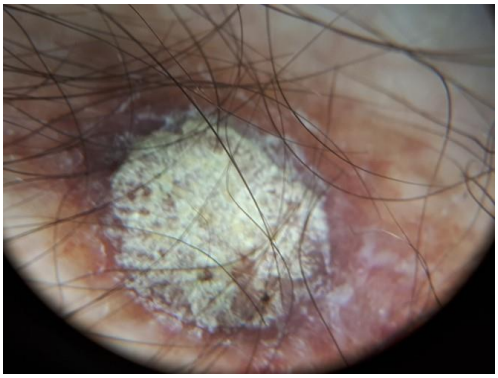
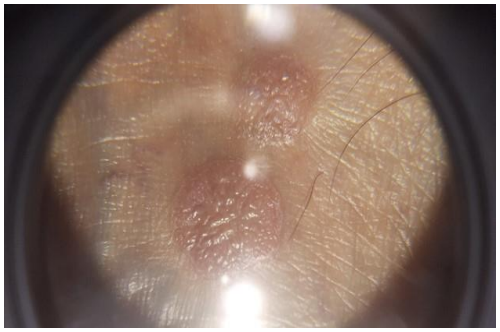


Figure 5: Dermoscopy



An excisional biopsy of one lesion followed by histopathological examination was performed. The histopathological examination showed psoriasiform elongation of plump and interconnected rete ridges, parchetosis and vascular ectasia in the papillary dermis (Figure 6), acanthosis, agranulosis, parakeratosis, and increased number of vessels in the papillary dermis (Figure 7); a periodic acid-Schiff reaction (PAS stain) demonstrated clear keratinocyte with pale cytoplasm, containing a large amount of glycogen (Figure 8).

Figure 6: Histopathological exam – psoriasiform elongation of plump and interconnected rete ridges, parchetosis, and vascular ectasia in the papillary dermis, HE stain x40.

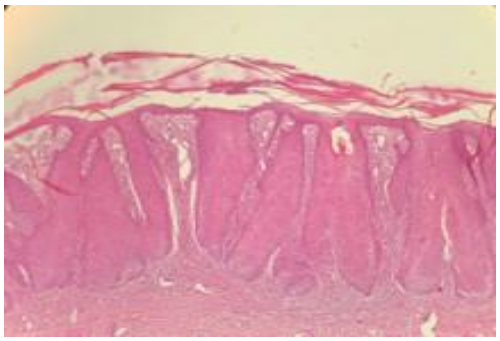
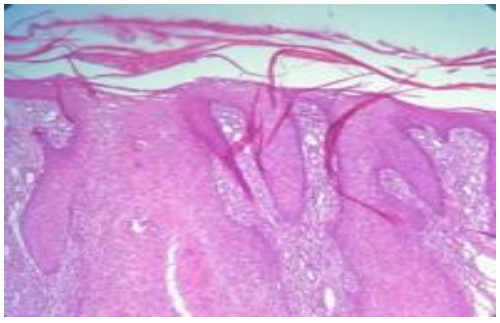
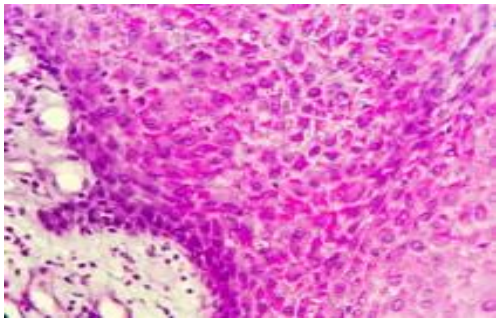


Figure 7: Histopathological exam – acanthosis, agranulosis, parakeratosis, an increased number of vessels in the papillary dermis, HE stainx100.



After establishing the diagnosis using the histopathological examination, the surgical excision of the larger tumor formations was decided, under local anesthetics with Xilina 1%, with the suture per-primam with non-absorbable suture threads and local dressing with Baneocin powder, and the others smaller lesions were treated by cryotherapy, using liquid nitrogen and a cotton wool swab, applied for fifteen seconds and repeated after one minute. All lesions were resolved with minimal residual scarring with no relapse at five months of dermatologic follow-up.

Figure 8: Histopathological exam – Clear keratinocyte with pale cytoplasm, containing a large amount of glycogen, demonstrated with a periodic acid-Schiff reaction, PAS stainx200.



DISCUSSION

Although solitary lesions represent the most common form of presentation of the acanthoma with clear cells, less than thirtieth cases of multiple clear cell acanthoma, from two up to four hundred lesions, have been described in the medical literature to date [6]. The diagnosis based on clinical features frequently needs to be supported using a dermoscopy exam and, in most cases, a histopathology exam is required. Dermoscopy can show dotted or globular vessels, similar to those that can be seen in Bowen disease and psoriasis [7,8]. Also, research has shown an association between clear cell acanthomas and some other conditions including arthropod bites, viral infections, seborrheic keratosis, xerosis, hyttiosis, stasis dermatitis, and varicose veins [9].

The etiology of clear cell acanthoma is not well understood and is no evidence that trauma toxic, drugs, or substances lead to the onset of tumors. In clear cell acanthoma, exist a metabolic enzyme defect, an enzyme that has an important role in the synthesis of keratin [6]. Some authors consider that is an inter-relation with the output of melanocytes and the interaction between melanocyte and keratinocyte. Some of the authors consider that lesions are benign epithelial neoplasm, while others stand up the hypothesis that the origin of this tumor formation is an inflammatory one [7]. Some authors that clear cell acanthoma represent a variant of seborrheic keratosis with the keratinocytes containing abundant amounts of glycogen [10]. In the medical literature, have been reported neither spontaneous

regression nor malignant transformation to data.

The most characteristic histopathologic features of clear cell acanthoma are the clear cells with acanthotic epidermis composed of a high composition of glycogen that can be highlighted by positive PAS-Periodic acid-Schiff-staining and the removal of the staining after the diastase digestion. The epidermis is in most cases infiltrated with an abundant number of neutrophils, which may lead to micro-abscesses in the corneum parakeratotic stratum. The Malpighian layer includes slight spongiosis or several pyknotic neutrophils in the intercellular spaces. The papillary dermal layer includes mixed cellular infiltrate and ectasia. A well definite line of demarcation limits the tumor. This line is produced by epidermal cells, which are increased in size, except those in the basal layer. The histochemical examination shows the absence of phosphorylase - a constitutive enzyme, able to demote glycogen [11]. The electron microscopy examinations have revealed glycogen granules in the dermal layer [12]. Video-dermatoscopy has been introduced among the modern methods, for the diagnosis of clear cell acanthoma, highlighting homogeneous pinpoint-like vascular lesions, that have a bush-like aspect if is set a higher magnification [13].

Multiple clear cell acanthoma – from two up to four hundred lesions – have been described in the medical literature until the moment date. The first multiple clear cell acanthoma has been first described by Delacretaz in 1964 [14].

Differential diagnoses include vulgar warts, pyogenic granuloma, Kaposi disease, amelanotic melanoma, dermatofibromas, traumatized hemangioma, Bowen's disease, basal cell carcinoma, squamous cell carcinoma, irritated seborrheic keratosis, and psoriasis [15-21].

The treatment consists is complete removal (standard surgical excision, cryotherapy, electrofulguration alone, carbon dioxide laser or shave removal or curettage followed by electrofulguration) [22]. For the cases with multiple lesions, cryotherapy, or topical 5-fluorouracil are preferred [23, 24]. In our case, even if the lesions were multiple, the surgical approach supplemented with cryotherapy was found to be a good choice. Therefore, we opted for standard surgical excision, cheap and painless (because we used local anesthesia with Xiline) for larger tumor formations and the other smaller lesions were treated by cryotherapy, using liquid nitrogen. After two sessions, lesions were completely healed without relapse and with a good aesthetic result. In conclusion, we can say that cryotherapy is still an optimal method for treating forms of multiple eruptive clear cell acanthoma, but if there are lesions with a larger diameter among the tumors, classical surgical excision may also be combined.

CONCLUSIONS

Clear cell acanthoma is a rare benign epithelial tumor that presents typically as a solitary tumor, but there are cases with multiple lesions. The tumor is red/red-brown, dome-shaped papule, or nodule. A peripheral wafer-like scale collarette represents the classical presentation in majority lesions, but this sign may not always be present. The surface may have a crusted appearance or a moist appearance and may bleed with minor trauma. The tumor slowly enlarges over several years.

Dermoscopy reveals a highly characteristic pattern, a sign that can be utilized to aid in diagnosing a clear cell acanthoma - the the "pearl necklace" appearance (glomerular/pinpoint blood vessels present in a curvilinear and reticular pattern), but a skin biopsy is usually performed to confirm the diagnosis. The preferred treatment of clear cell acanthomas is complete removal (standard surgical excision, cryotherapy, electrofulguration alone, carbon dioxide laser or shave removal or curettage followed by electrofulguration). In our case, even if the lesions were multiple, the surgical approach (for larger tumor formations) supplemented with cryotherapy (for the smaller lesions) was found to be a good choice. In conclusion, we can say that cryotherapy is still an optimal method for treating forms of multiple eruptive clear cell acanthoma, but if there are lesions with a larger diameter among the tumors, classical surgical excision may also be used.

Although solitary lesions represent the most common form of presentation, less than thirtieth cases of multiple clear cell acanthoma have been described in the medical literature to date. Therefore, our case with approximate fifteen lesions could be classified as multiple eruptive clear cell acanthoma.

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