Metaplastic ossification of the skin: acral angio-osteoma cutis

Dermopathology

Francesca Arienzo[1], Giuseppe Soda[1]

[1]Department of Radiological, Oncological and Pathological Sciences, “Sapienza” University of Rome, Rome, Italy.

Objectives Cutaneous ossification may occur in association with a variety of cutaneous neoplasm or inflammatory conditions. Acral angio-osteoma cutis (AAOC) is a benign tumor characterized by vascular proliferation associated with newly formed bone deposition typically occurring on the acral skin [(1)]. Differential diagnoses include Albright's hereditary osteodystrophy (AHO), subungual exostosis, pyogenic granuloma with metaplastic ossification, and/or osteoma cutis. We report here a case of AAOC involving the great toe of a 40 years-old man clinically diagnosed as pyogenic granuloma.

Materials and Methods The patient presented with a single dome-shaped ulcerated lesion measuring 0.6×0.5x0.4 cm. No history of trauma was referred by the patient who was otherwise healthy. The lesion was totally excised. For its bony consistence, it was routinely processed for paraffin embedding after acid decalcification. Sections were stained with hematoxylin and eosin. Immunohistochemistry using antibodies for CD34, CD31, HHV8 and Ki67 was also performed.

Results Histologically, the lesion was ulcerated and consisted of blood vessels without a lobular pattern lined by endothelial cells devoid of atypia and associated with interconnected tiny woven bone trabeculae. Osteoblasts were focally recognizable and devoid of cytologic atypia and mitotic activity. CD31 and CD34 immunostains highlighted the vascular component of the lesion. The overall Ki67 labeling index was lower than 5%. HHV8 immunostain was negative. The diagnosis of AAOC was rendered.

Conclusions AAOC is rare. To date, few cases have been reported. Its pathogenesis is unknown. A history of trauma has been reported in few of the previously reported cases. Vascular endothelial growth factor (VEGF) and bone morphogenetic proteins (BMPs) have been thought to play a role in its development [(2)]. Further studies are needed.

References

1. Googe PB, Page RN, King R, Griffin WC. Acral angioosteoma cutis. Am J Dermatopathol 2006; 28:228.

2. Won CY, Cho BK, Park HJ. Acral Angioosteoma Cutis on the Great Toe Mimicking Pyogenic Granuloma. Ann Dermatol 2015; 27:480-481. doi: 10.5021/ad.2015.27.4.480. PMID: 26273178.