Stomatologija, Baltic Dental and Maxillofacial Journal, 15:61-4, 2013

Keratoacanthoma in the inferior lip of an immunosuppressed patient. A case report

Cassiano Lima Chaiben, Joslei Carlos Bohn, Adriano Kuczynski, Francisca Berenice Dias Gil, Antonio Adilson Soares de Lima

SUMMARY

Keratoacanthoma is a lesion typical crater, symmetrical, rounded, rapid growth with high potential for self-involution. The lesions may be multiple, disseminated and associated with some syndromes. The etiology of keratoacanthoma is not known, but it is often observed in patients chronically exposed to sun. Histopathological features of keratoacanthoma may resemble those of a well differentiated squamous cell carcinoma. The hallmark of the disease is spontaneous resolution after an intermediary stationary stage. The majority of the cases is treated by surgical excision. For this reason, very few cases have been documented until resolution, which constitutes the gold standard for this clinic diagnosis. The aim of this article is to report a case of keratoacanthoma in the inferior lip of an immunosuppressed patient.

Key words: keratoacanthoma, lip, mouth mucosa, immunosuppression.

INTRODUCTION

Keratoacanthoma is a crater lesion, rounded, fast growing and high potential for self-involution (1, 2). The first description of this disease is attributed to Hutchinson in the end of nineteenth century (3). However, the term keratoacanthoma was determined in 1949 by Rook and Whimser (4). The etiology of keratoacanthoma is unknown, and many factors are likely involved in its pathogenesis (5-8). This lesion that usually affects the sun-exposed skin can also arise in vermilion lip and oral mucosa (9-12).

Both clinical and histopathological features of keratoacanthoma may resemble those of a well differentiated squamous cell carcinoma (5, 6). The distinction between squamous cell carcinoma and keratoacanthoma has been a matter of discussion since the first descriptions of this disease (1). Many laboratorial techniques have been used to differentiate them, but until now, none of these techniques allowed a reliable differential diagnosis in 100% of cases. Histopathological examination remains the gold standard for the distinction of squamous cell carcinoma and keratoacanthoma (13, 14). Cribier et al (15) analyzed a large series of squamous cell carcinoma and keratoacanthoma to determine the reliability of common histopathological criteria that have been proposed as distinctive markers between these lesions. They showed that only 5 of 14 criteria are of a certain value in differentiating squamous cell carcinoma from keratoacanthoma. These criteria are: sharp outline between stroma and proliferation; epitelial lip; ulceration; pleomorphism or anaplasia; and mitoses. Keratoacanthomas typically progress through three clinical stages: a rapidly proliferating stage of 6 to 8 weeks, a stable mature stage, and then a stage of involution. The entire process occurs from 4 to 9 months and may heal with a scar (16). Current standard surgical treatment options include shave removal in combination with curettage, excision, and Mohs micrographic surgery (17). The aim of this article is to describe a case of keratoacanthoma of the lower lip in a patient with HIV disease.

[1]*Department of Stomatology, School of Dentistry, Universidade Federal do Paraná – UFPR, Curitiba/PR, Brazil.*
[2]*Department of Dentistry, Hospital Oswaldo Cruz, Curitiba/PR, Brazil*

Cassiano Lima Chaiben[1] *– D.D.S.*
Joslei Carlos Bohn[1] ***–*** *Dental student*
Adriano Kuczynski[1]***–*** *Dental student*
Francisca Berenice Dias Gil[2] *– D.D.S.*
Antonio Adilson Soares de Lima[1] *– D.D.S., PhD, Professor*

Address correspondence to: Dr. Antonio Adilson Soares de Lima, Curso de Odontologia – Departamento de Estomatologia da UFPR Rua Prefeito Lothário Meissner 632, Jardim Botânico 80170-210 Curitiba – PR Brazil.
E-mail: aas.lima@ufpr.br

CASE REPORT

A 42-year-old white male was referred to the Hospital Oswaldo Cruz with symptoms of chronic

cough, weakness, weight loss, asthenia and severe diarrhea. His HIV infection was discovered in 1998 and he has made use of antiviral therapy irregularly. The patient's medical history included pulmonary tuberculosis in 1998 and toxoplasmosis in 2005 which were treated. Actually, he has made abusive and frequent use of alcoholic substances. The patient rarely exposes to the sun and he worked in a printing ink handling.

Investigations revealed normal liver and kidney function tests and blood sugar levels; complet hemogram showed leucopenia; erythrocyte sedimentation rate: 47 mm; and HBsAg was reactive. The CD4 count was 5 cells/μL and viral load was 12.811. The X-ray chest (PA view) was normal.

Intraoral physical examination revealed actinic cheilitis, coated tongue, periodontitis and residual tooth roots. Furthermore, a rounded lesion covered by a slightly brownish crust in the vermilion of lower lip (Figure 1). During palpation, the lesion showed edges slightly raised and hardened. According to the patient, this lesion appeared three months ago. The lesion was painless and the only discomfort was due to aesthetic reasons. The patient said he had tried to remove the lesion with his fingers several times. Others similar lesions had appeared and disappeared in the skin of the neck, legs and right arm. No regional lymph node involvement was found. The clinical features of the lesion reinforced two diagnostic hypotheses: oral squamous cell carcinoma or keratoacanthoma.

During the surgical excision, the lesion was widely excised with a margin of the approximately 1 cm, and the specimens were examined histopathologically. Keratoacanthoma was diagnosed following histopathological examination of the excisional biopsy specimens. The histopathologic examination revealed an epithelial proliferation that showed hyperkeratosis, elongated rete ridges (some presenting a droplet shape) dyskeratosis, basal cell nuclear hyperchromatism, conspicuous nucleoli, increased mitotic activity with normal morphology, and no loss of basal membrane (Figure 2). Laterally, the lip epithelium could be observed at the boundary between the lesion and the normal surface epithelium (Figure 3). Epithelial islands were intermingled with the underlying connective tissue and were accompanied by mild chronic inflammatory infiltrate, reminding a pseudoepitheliomatous hyperplasia. Furthermore, some areas of basophilic change were identified in the lamina propria too. Based on the histopathological features described above was given the diagnosis of keratoacanthoma. Seven days ago, the suture was removed and the result was cosmetically satisfactory. The patient was evaluated for six months and no recurrence was observed.

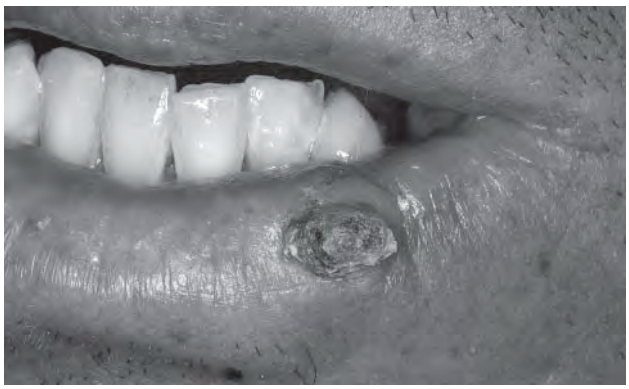

Fig. 1. Keratoacanthoma in the vermilion of the lower lip

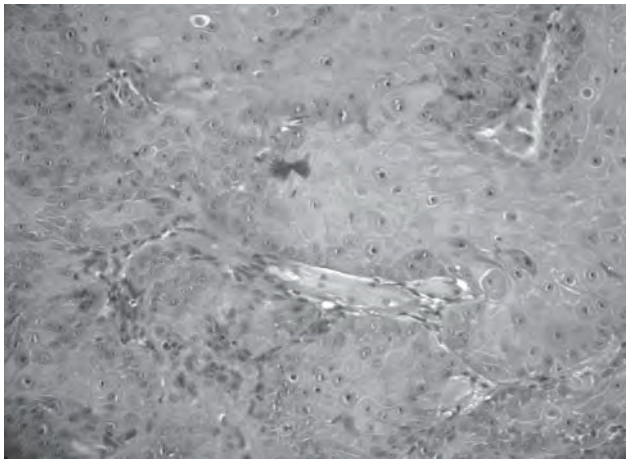

Fig. 2. View of the tissue section presenting epithelial dyskeratosis, basal cell nuclear hyperchromatism, conspicuous nucleoli, and cellular pleomorphism. (Hematoxylin and eosin, X100).

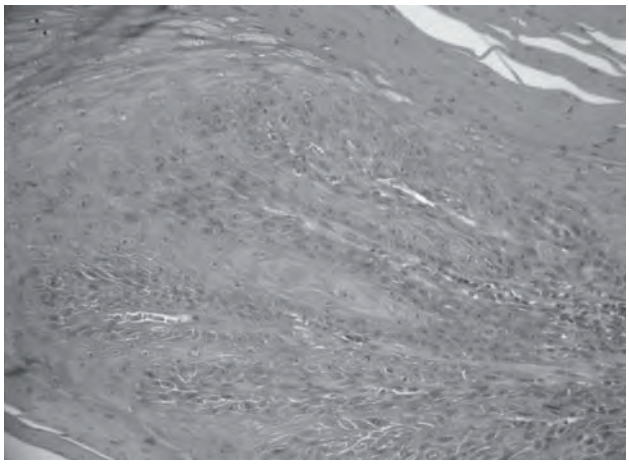

Fig. 2. Details of the epithelial lip region exhibiting parakeratin-filled crater, sharp outline stroma, and chronic inflammatory infiltrate. (Hematoxylin and eosin, X100)

DISCUSSION

Keratoacanthoma is an epithelial neoplasm which occurs on sun-exposed hair-bearing skin.

The cell of origin is assumed to be within the pilosebaceous unit (18). The term was suggested by Rook and Whimster to distinguish these lesions from squamous cell carcinomas (1). Cutaneous keratoacanthoma may be solitary or multiple and present as keratotic, painless nodules that rapidly develop over 4–9 weeks and resolve spontaneously after a few months, with scarring (17). In this case report, a keratoacanthoma was diagnosed in the vermilion of the lower lip. Keratoacanthomas located on the vermilion border of the lip probably arise from hair follicles in the adjacent skin. Although this is a benign neoplasm and the possibility of autoregression, the lesion was located in a region of the face which caused discomfort to the patient. Thus, surgical removal of the lesion under local anesthesia was recommended.

Keratoacanthomas represent approximately 1% of skin malignancies treated in the United States (19). This condition still must be considered an important lesion because is often associated with immunosuppressed patients (8). However, any lesion in immunocompromised individuals must be immediately excised. Furthermore, suspected solitaries cases that fail to respond within 4 to 8 weeks demands obligatory surgical excision (17). Recently, the association of keratoacanthoma with tattoos has been reported (20-22). No tattoos was found in this patient, however, he worked every day through the manipulation of paint in a graphic. Thus, although no evidence of ink has been observed within the lesion, one cannot rule out the possibility of environmental exposure is associated with keratoacanthoma of the case.

The distinction between keratoacanthoma and squamous cell carcinoma has been a matter of discussion since the first descriptions of this condition (1). Histologically, keratoacanthoma resembles squamous cell carcinoma and, although histopathological differentiation may sometimes be difficult, the biologically benign course of keratoacanthoma allows clear distinction from the latter (6). According to Cribier, Asch and Grosshans (15), the best criterion in favor of keratoacanthoma is the presence of a epithelial lip (sensitivity 83.9% and specificity 85.8%), and the best criterion in favor of squamous cell carcinoma was the presence of more than two mitoses for high-power field (sensitivity 68% and specificity 93%). All histopathological findings observed (arciform disposition, epithelial lip, keratin-filled crater, sharp outline stroma) in this case were consistent with the diagnosis of keratoacanthoma.

CONCLUSION

Keratoacanthoma is a lesion with unique clinical features but unfortunately makes it very similar to squamous cell carcinoma. A detailed study of histopathological features still remains the most recommended diagnostic feature, especially in those cases where surgical removal is important for aesthetic reasons.

CONFLICT OF INTEREST

All authors disclose that there was no conflict of interest that could inappropriately influence in this report of case.

REFERENCES

1. Rook A, Whimster I. Keratoacanthoma - a thirty-year retrospect. *Br J Dermatol* 1979;100:41-7.
2. Cribier B. Kératoacanthome. *Ann Dermatol Venereol* 2003;130:1173-175.
3. Hutchinson J. Morbid growths and tumours. 1. The "crateriform ulcer of the face," a form of acute epithelial cancer. T*rans Pathol Soc London.* 1889;40:275-81.
4. Rook A, Whimster I. Le kératoacanthome. *Arch Belg Dermatol Syphiligr* 1950;6:137-46.
5. Schwartz RA. Keratoacanthoma. *J Am Acad Dermatol* 1994;30:1-19.
6. Schwartz RA. Keratoacanthoma : a clinico-pathologic enigma. *Dermatol Surg* 2004;30: 326-33.
7. Pickrell K, Villarreal-Rios A, Neale H. Giant keratoacanthomas. *Ann Plast Surg* 1979;3:172-6.
8. Bart RS, Popkin GL, Kopf AW, Gumport SL. Giant keratoacanthoma: a problem in diagnosis and management. *J Dermatol Surg* 1975;1:49-55.
9. de Visscher JG, van der Wal JE, Starink TM, Tiwari RM, van der Waal I. Giant keratoacanthoma of the lower lip. Report of a case of spontaneous regression. *Oral Surg Oral Med Oral Pathol Oral Radiol Endod* 1996;81: 193-6.
10. Ramos LM, Cardoso SV, Loyola AM, Rocha MA, Durighetto-Júnior AF. Keratoacanthoma of the inferior lip: review and report of case with spontaneous regression. *J Appl Oral Sci* 2009;17:262-5.
11. Naudi KB, Critchlow HA, Hunter KD. Keratoacanthoma of the gingiva - a pathological conundrum. *Oral Oncol* 2009;451:e9-10.
12. Heidenreich RK, Gongloff RK, Wescott WB. A solitary, exophytic, crateriform lesion on the mandibular retromolar gingiva. *J Am Dent Assoc* 1986;112:377-9.
13. Fisher ER, McCoy MM, Wechsler HL. Analysis of histopathologic and electron microscopic determinants of keratoacanthoma and squamous cell carcinoma. *Cancer* 1972;29:1387-97
14. Kern WH, McCray MK. The histopathologic differentiation of keratoacanthoma and squamous cell carcinoma of the skin. *J Cutan Pathol* 1980;7:318-25.
15. Cribier B, Asch P-H, Grosshans E. Differentiating squamous cell carcinoma from keratoacanthoma using his-

topathological criteria. *Dermatology* 1999; 199:208-12.
16. Griffiths RW. Keratoacanthoma observed. *Br J Plast Surg* 2004;57:485-501.
17. Hadley JC, Tristani-Firouzi P, Florell SF, Bowen GM, Hadley ML. Case series of multiple recurrent reactive keratoacanthomas developing at surgical margins. *Dermatol Surg* 2009;35:2019-24.
18. Ghadially FN, Barton BW, Kerridge DF. The etiology of keratoacanthoma. *Cancer* 1963;16:603-11.
19. Vergilis-Kalner IJ, Kriseman Y, Goldberg LH. Keratoacanthomas: overview and comparison between Houston and Minneapolis experiences. *J Drugs Dermato*l 2010;9:117-21.
20. Chorny JA, Stephens FV, Cohen JL. Eruptive keratoacanthomas in a new tattoo. *Arch Dermatol* 2007;143:1457-8.
21. Kleinerman R, Greenspan A, Hale EK. Mohs micrographic surgery for an unusual case of keratoacanthoma arising from a longstanding tattoo. *J Drugs Dermatol* 2007;6:931-2.
22. Kluger N, Minier-Thoumin C, Plantier F. Keratoacanthoma occurring within the red dye of a tattoo. *J Cutan Pathol* 2008;35:504-7.

Received: 21 04 2011
Accepted for publishing: 20 06 2013