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Saved by step sections: an unusual presentation of basal cell carcinoma

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ABSTRACT

Background: Basal cell carcinoma usually occurs in sun exposed areas of older male individuals.
Objectives: To emphasize the importance of histological step sections in the pursuit of the correct diagnosis when microscopic findings do not correspond to clinical hypothesis.
Patient: 21-year-old female with a superficial basal cell carcinoma in pubic region diagnosed after histological step sections and treated with topical imiquimod.
Conclusions: Although very rare, basal cell carcinomas do occur in young patients and, at times, on areas of the body where they are not conventionally seen. Step sections are an important tool that dermatopathologists should use on a regular basis to enhance diagnostic accuracy.

Introduction

Basal cell carcinomas are usually found in sun exposed areas of older individuals, especially the head and neck [1, 2, 3]. The incidence of basal cell carcinoma in patients younger than 50 years old, was 5% in one Brazilian study [4], and these were mainly in regions exposed to sunlight. Although several cases of basal cell carcinoma in the vulva can be found in the literature [5–8], only one case reported it to occur in the pubic region [9].

We describe a young female patient with an enlarging erythematous macule on the pubic region that was diagnosed as superficial basal cell carcinoma. There was no clinical suspicion of malignant neoplasia, however, that diagnosis was possible by performing histological step sections.

Case report

A 21-year-old female presented a 2 cm erythematous macule on the pubis that had been slowly enlarging over a period of 18 months (Figure 1). Her main complain, actually, was diffuse hair thinning and scalp scaling, which was interpreted as androgenetic alopecia associated with seborrheic derma-

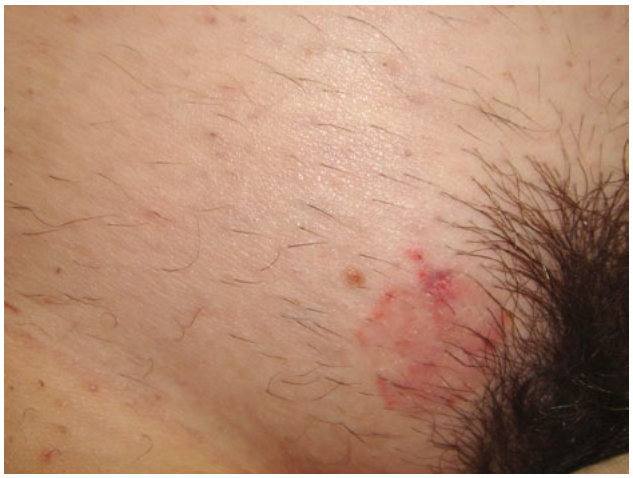


Figure 1. Clinical appearance: 2 cm erythematous patch with focal crusting and scaling.

titis. She was otherwise healthy with no other significant skin abnormalities. Mycologic tests (direct examination with potassium hydroxide and culture) done on the pubic lesion were negative. No improvement was seen after topical corticosteroid for 10 days. A skin biopsy (3 mm punch) was performed with the following clinical hypothesis: seborrheic dermatitis, eczema, psoriasis, *tinea incognita*. Histological sections (Figures 2A, 2B, 2C) showed a well-demarcated area of ulceration with crust. Adjacent epidermis depicted irregular acanthosis and prominent spongiosis with inflammatory cells in exocytosis; superficial and mid-dermis presented a dense inflammatory infiltrate composed mainly of lymphocytes. Step sections were ordered because skin ulceration is unusual in those clinical differential diagnoses listed. New sections (Figures 3A, 3B and 3C) surprisingly showed neoplastic blocks attached to the epidermis demonstrating slit-like retraction of the palisaded basaloid cells from the adjacent stroma. The diagnosis of superficial basal cell carcinoma was yielded. The patient started topical imiquimod cream (Figure 4A), five days a week for six weeks. Severe inflammation was noticed in week three (Figure 4B), followed by crusting in week six (Figure 4C), and complete healing. No signs of recurrence was seen at a six-month follow-up (Figure 4D).

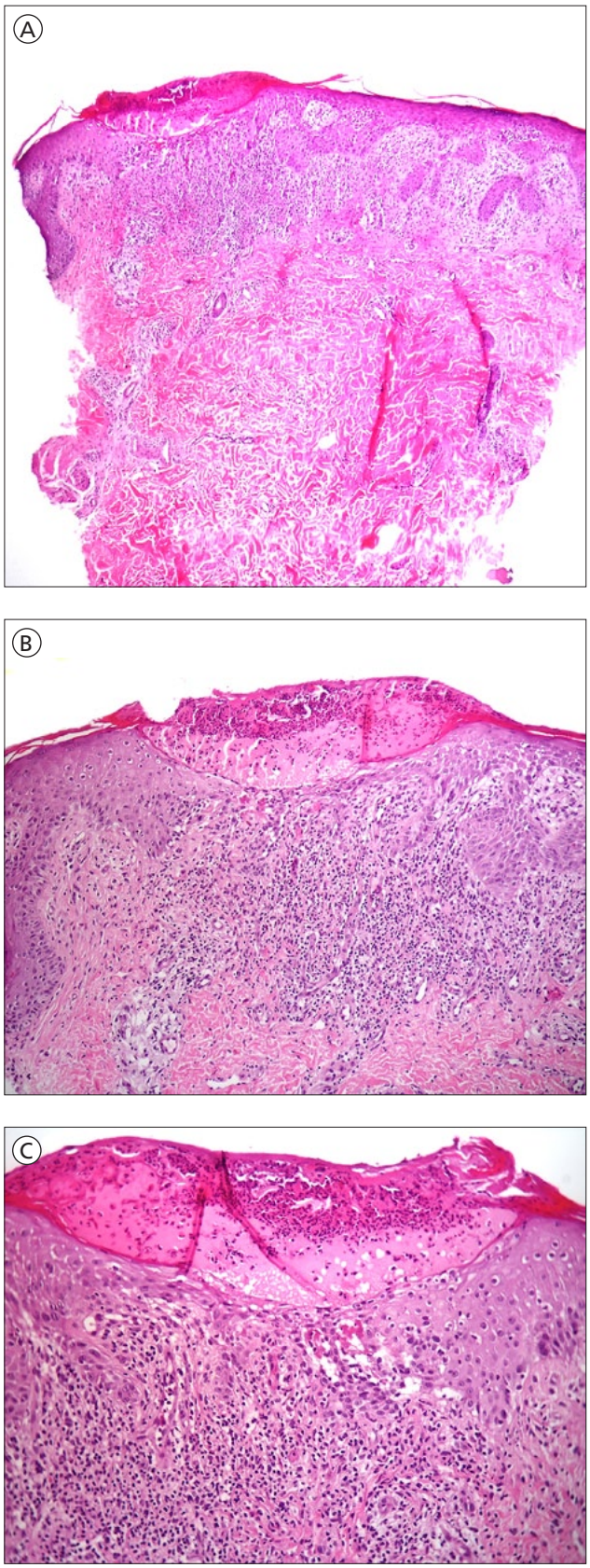
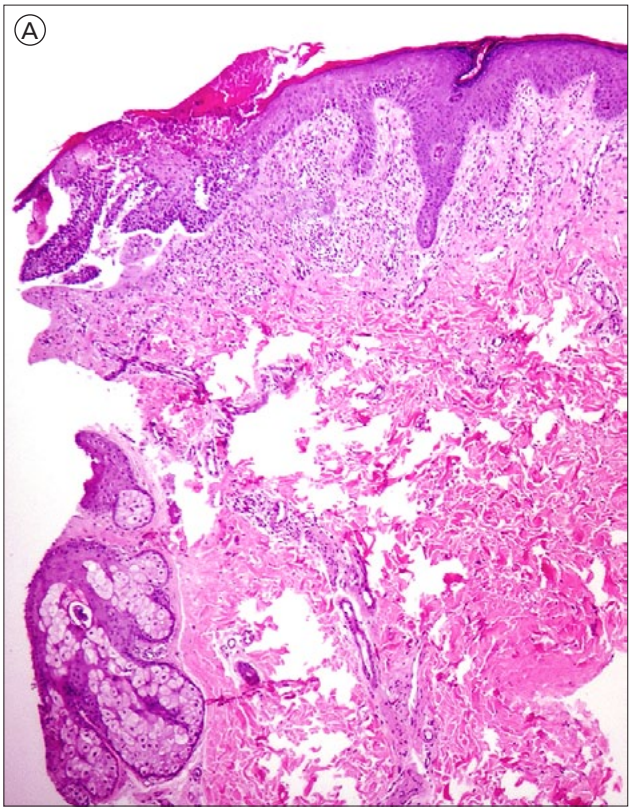
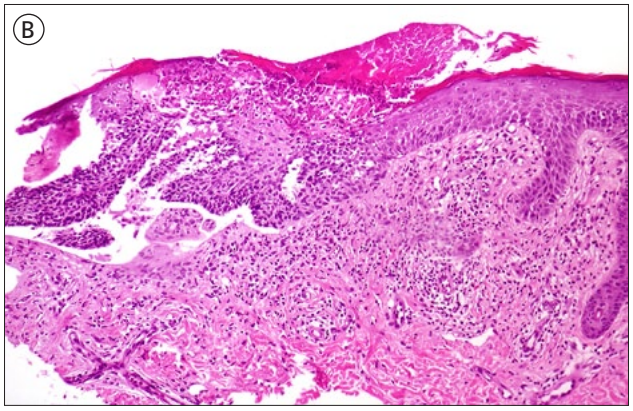


Figure 2. A: Panoramic view of first section showing well demarcated area of ulceration of the epidermis with crust. Original magnification (objective) x20; **B:** Epidermis with ulceration and irregular acanthosis; dense inflammatory infiltrate composed mainly of lymphocytes in superficial and mid-dermis. Original magnification (objective) x100; **C:** Detail of epidermis with scale crust and prominent spongiosis with inflammatory cells in exocytosis. Original magnification (objective) x200.

Discussion

To the best of our knowledge, this is the first case report of superficial basal cell carcinoma in the pubic region of a young adult female. The only case we found in the literature occurring in the pubic region was a polypoid basal cell carcinoma (fibroepithelioma of Pinkus) measuring 7.1 × 5.0 × 2.2 cm in a 61-year-old woman – a totally different clinical and histological setting from the case reported herein.





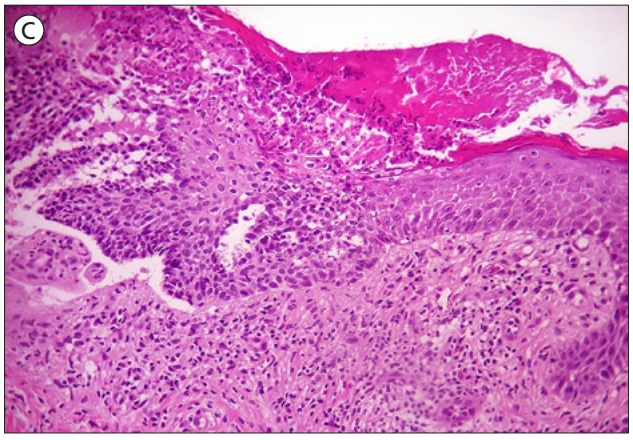


Figure 3. A: Panoramic view after step sectioning. Ulcerated area was associated to a superficial neoplasia demonstrating slit-like retraction from the subjacent dermis. Original magnification (objective) x20; **B:** Closer view of superficial basal cell carcinoma. Original magnification (objective) x100; **C:** Detail of neoplastic blocks with palisaded basaloid cells and characteristic separation from papillary dermis. Original magnification (objective) x200.

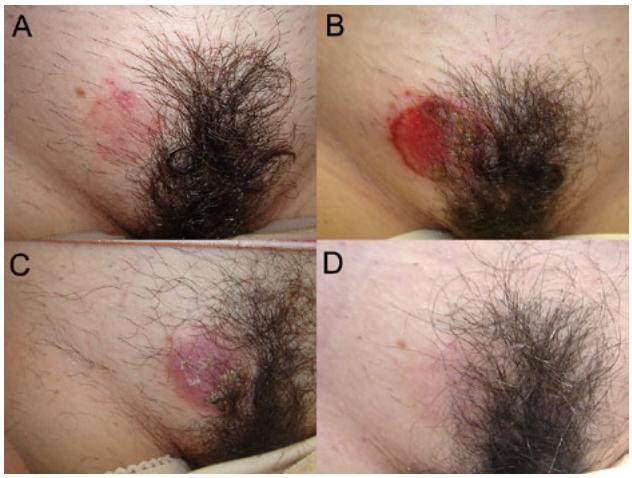


Figure 4. A: Clinical aspect before treatment; B: Three weeks after imiquimod cream with severe inflammation; C: Six weeks after Imiquimod cream with partial healing and focal crusting; D: Six months after treatment. Complete healing and no signs of recurrence.

Another feature that contributes to the peculiarity of this case is that the diagnosis of basal cell carcinoma was possible because step sections were ordered. The order was based on the odd aspect of the first hematoxylin and eosin slide where an area of ulceration could be seen. A PAS stain with diastase was already performed and had not given any enlightenment on the matter.

The intention of ordering deeper sections was to find the explanation for that ulceration and to rule out the remote possibility of a bullous disease or of herpes simplex virus infection. Actually, in the author's (BW) own experience, herpes simplex virus infection is the "champion" among the diagnoses made by deeper/step sections, especially when follicular herpes infection is present. Resnik and DiLeonardo [10] reported three such cases, a setting they called "herpes incognito."

Some studies have approached the matter of step sectioning in dermatopathology [11–14] and its usefulness in enhancing diagnostic accuracy and cost-benefit issues are the major concerns. These authors were all convinced that 30–37% of their cases benefitted from that practice [11–14]. The higher rate of ordering step sections was obtained in a retrospective study by Maingi and Helm [11], where the dermatopathologist felt compelled to order deeper sections based on histological aspects. This study best reflects what in reality occurs in a dermatopathology service – 63% of the step sectioned cases could be signed out without ordering them, with no change in diagnosis.

On the other hand, if no step sectioning were performed, 37% of the patients would not benefit maximally from the diagnostic power of skin biopsy. Step sectioning can be crucial to diagnosis, like what happened in the case reported by us.

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