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# Poroide carcinoma: anatomopathological findings

## Carcinoma poroide: descubrimientos anatomopatológicos

María Angélica Leonardo Fiel Cruz,\* Inandara Rafaela Marco De Oliveira Granado,\*  
Paola Da Costa Souza,† Gabriela Juncá Trindade Pires§

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### Palabras clave:

Carcinoma poroide,  
neoplasia maligna,  
cuero cabelludo.

### Abbreviations:

PC = Poroide carcinoma.  
CEA = Carcinoembryonic  
antigen.  
CT = Computed tomography.  
PET/CT = Positron emission  
tomography coupled to a  
computerized tomography.

\* Graduated in Medicine,  
Student of the Post-Graduate  
Faculty of Medical Sciences  
of Minas Gerais and Higher  
Institute of Medicine and  
Dermatology, São Paulo, SP,  
Brazil.

† Graduated in Medicine,  
PhD in Pathology, University  
of São Paulo, Associate  
Professor, University of  
Maringá, Post doc Student  
at University of São Paulo.  
Medical Pathologist and  
lab Technical Director of  
Pathology, São Camilo lab.

§ Dermatologist, Professor of  
the Post-Graduate Faculty of  
Medical Sciences of Minas  
Gerais and Higher Institute of  
Medicine and Dermatology,  
São Paulo, SP, Brazil.

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### ABSTRACT

The poroide carcinoma (PC) is a rare malignant neoplasm that may arise from the acrosyringium of the sweat gland, or as a malignant transformation of an eccrine poroma, a simplex hidroacanthoma or nevus sebaceous. The etiology of PC still remains unknown, with predisposing factors: sun damage, radiation therapy, immunosuppression. We report a rare positive diagnosis case for PC scalp, in a young woman, focusing on the diagnostic difficulties and their respective pathological aspect.

### RESUMEN

El carcinoma poroide (CP) es una neoplasia maligna rara que puede derivarse del acrosiringio de las glándulas sudoríparas, o como una transformación maligna de un poroma eccrino, de un hidroacantoma simplex, o de nevus sebáceo. La etiología del CP sigue siendo desconocida, con factores predisponentes: el daño solar, la radioterapia, la inmunosupresión. En este caso clínico, se presenta un raro diagnóstico positivo para el CP en cuero cabelludo, en una mujer joven, centrándose en las dificultades de diagnóstico y su respectivo aspecto patológico.

## INTRODUCTION

The poroide carcinoma (PC) was first reported by Pinks and Mehregan in 1963. However, in 1969 the term «poroide carcinoma» became used.<sup>1,2</sup>

The PC is a rare malignant neoplasm that may arise from the acrosyringium of the sweat gland, or as a malignant transformation of a poroma eccrine, of a simplex hidroacanthoma, or from a nevus sebaceous.<sup>3,4</sup>

Observed predominantly in elderly patients with mean age of 67 years, the PC does not distinguish gender and races.<sup>5</sup> The etiology of PC is unknown, with predisposing factors: sun damage, radiation therapy and immunosuppression.<sup>6</sup>

We report a rare positive diagnosis of scalp PC, in a young woman, focusing on the diagnostic difficulties and their respective pathological aspect.

## Current disease

A 32-year old female patient, leucodermic, without other clinical findings and with good health. Two years ago the patient had a lesions in the right parietal scalp region, without

local pain. The patient reported that, during pregnancy, the lesion evolved with progressive growth and ulceration (Figure 1A). The first clinical diagnosis identifies the lesion as cyst sebaceous.

## Physical and additional exploration

However, the dermatologist performed the excision of the lesion, heading for the analysis of dermatopathologist, whose diagnosis was: single lesion on the scalp, with hyperemic area and ulcerated center hole on an erythematous base. Relatively circumscribed epithelial neoplasm, comprising two distinct components:

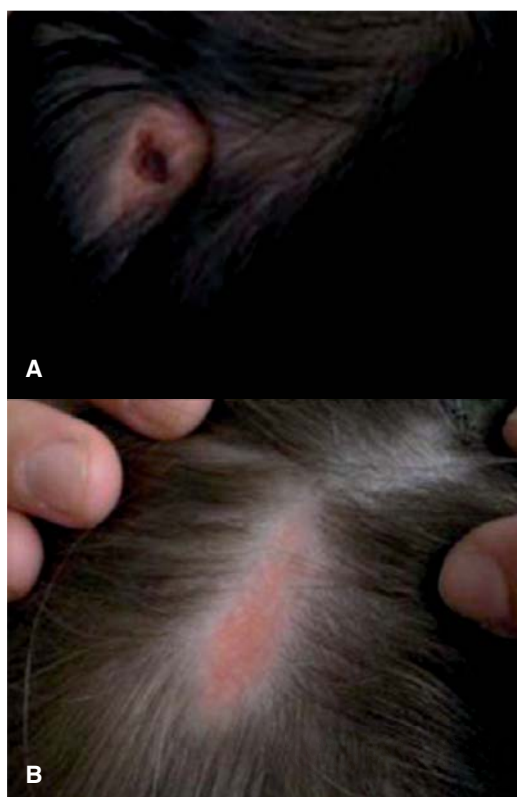
- Largely on the lesion was found solid buds of small cells with poroid features possibly associated with ducts and cells with ample and eosinophilic cytoplasm, which are characteristics of squamous differentiation (Figures 2A, 2B and 2C).
- In another area, there has been a gradual transition to a broad aspect comprises cytoplasm of cells, linked by intercellular bridges, and exhibit wide variation of sizes and shapes of hyperchromatic nuclei and, often with prominent nucleoli. This

component had imprecise limits, infiltrates (Figure 2C), noting in some extensive necrosis areas and some mitotic figures (Figures 3A and 3B).

### Diagnosis and treatment

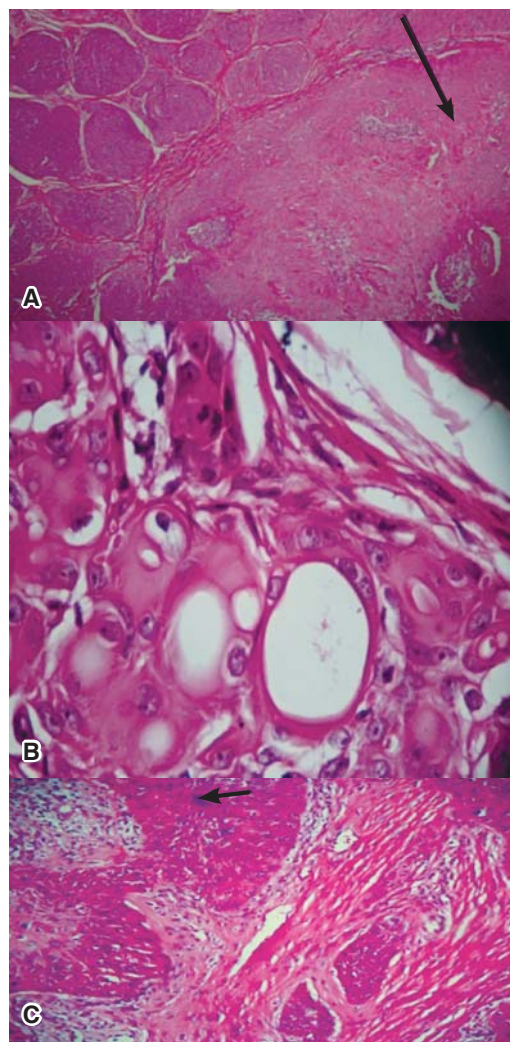
We also observed, areas of fibroplasia and neovascularization to replace part of neoplasia. Based on these histopathological changes, the first diagnosis was poroma. However, due to the presence of mitotic figures, focal atypia and pattern sometimes observed focally infiltrative, the case was referred for consultation to Dermatopathologist of the Hospital AC Camargo (São Paulo, Brazil) that owing to the atypical morphological characteristics found for a Poroma concluded the case as PC (porocarcinoma) probably originated in eccrine poromas.

Immunohistochemistry for p-53 and CEA (carcinoembryonic antigen) was negative in the neoplastic cells (data not showed).

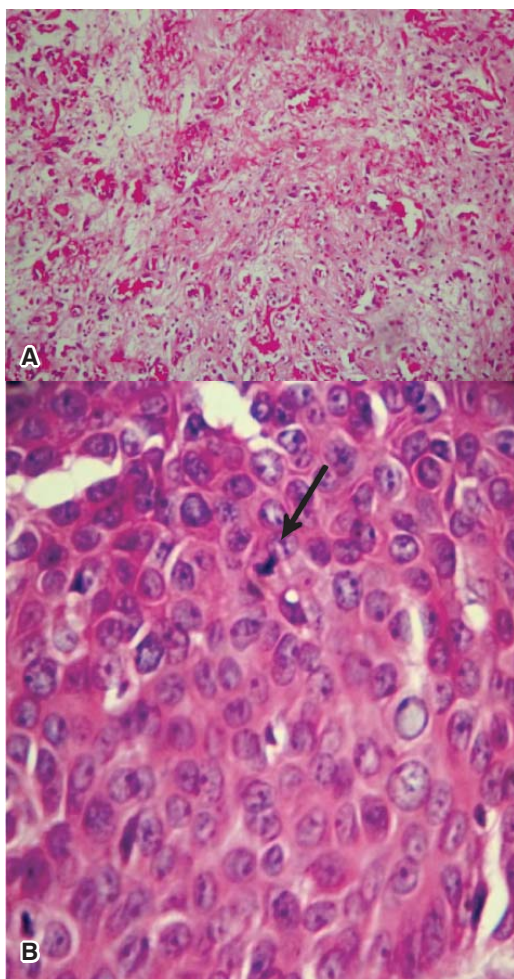


**Figure 1.** Appearance of the scalp. **A.** prior to excision of lesion. Note the hyperemic area and ulcerated center hole on an erythematous base; **B.** 20 days after excision of the lesion. Note the absence of malignancy, with free surgical margins of malignancy, dermal fibrosis and signs of previous surgery.

After 20 days of exeresis of the lesion, has programmed to second approach surgery for extension with safety margin with oncologist. Via pathological enlargement margin of



**Figure 2.** Histological section of the lesion. **A.** Appearance compatible with relatively circumscribed epithelial neoplasia: predominance of solid buds formed by small cells with poroid features, possibly associated with ducts and cells with ample and eosinophilic cytoplasm characteristic of squamous differentiation (arrow); image viewed in 4x; **B.** Cuticular differentiation with formation of ducts. Note a gradual transition to a broad aspect comprises cytoplasm of cells, linked by intercellular bridges, and exhibit wide variation of sizes and shapes of hyperchromatic nuclei and, often with prominent nucleoli; image viewed in 40x; **C.** Histological section of area with squamous standard. Note the infiltrative area of the lesion and atypical cell (arrow); image viewed in 4x. All the samples were fixated in formalin 10% and stained by the hematoxylin-eosine method.



**Figure 3.** Histological section of the lesion. **A.** Necrotic areas; image viewed in 10x; **B.** Presence of mitotic figure (arrow) on lesion; image viewed in 40x. The samples were fixated in 10% formalin and stained by the hematoxylin-eosine method.

lesion, in skin right parietal region (scalp), evaluated the lesion as cutaneous attachment tumor (macroscopic examination). The material was fixed in formalin remaining freezing on the elliptical piece of skin, which presented epidermis with finely granulomatous ulcer. The histopathological report showed epidermal acanthosis and dermal fibrosis and giant cells. The absence of malignancy in residual lesion sample, with free surgical margins of malignancy, dermal fibrosis and signs of previous surgery was observed in this second extension material sample of safe surgical margin (Figure 1B).

The patient had no metastasis after the procedure, that is, limited to the scalp disease. The lesion was of the type ulcerative-proliferative, being the base of the lesion

greater than the largest dimension. Thus, the lesion was fragmented to facilitate their removal, since it is attached to the periosteum.

The patient underwent a wide excision of the lesion, with primary closure and is doing well without signs of recurrence.

The follow-up to metastasis was performed every six months with CT and with PET/CT, after two years. The following will be retained for 5 years after diagnosis of the injury, when it will be considered cured according to orientation of the oncologist.

## DISCUSSION

According to the literature, 30-50% of cases of poroide carcinoma (PC) are described as pre-existing lesion with long latency period.<sup>1,2,5</sup> These carcinomas have a slow growth rate and a high potential for recurrence,<sup>7</sup> and the its incidence is about 0.005 to 0.01%, of all skin tumors.<sup>2,5</sup>

Clinically the lesion is not specific and presents as a nodule, circumscribed papules and plaques covered with normal skin, ulcerated or crusts of approximately 2 cm and may range from 1-10 cm,<sup>1,3</sup> predominantly asymptomatic, and there may be bleeding, drainage of clear liquid, pain or itching.<sup>1,3</sup>

Various types of associated cells can be viewed on PC: squamous cell, spindle, clear, and mucin-producing melanocytes. In classical histological PC description is observed in epithelial proliferation of acanthotic clear cell nests with radial extension of polygonal nuclei and eosinophilic cytoplasm with many atypical ductal structures intraepidermal.<sup>1,3</sup> A distinctive feature of the PC when stained with periodic acid-schiff, is the lack of keratinization, and presence of ductal formation of foci. Epidermotropism and ulceration of the skin are often seen in poroide carcinoma.<sup>5</sup>

Based on the histology, can be classified as intradermal –grows horizontally producing pagetoid infiltration (is that right?), throughout epidermis; or dermal – features nodules, without contact with the epidermis. The development of this type of eccrine tumor during pregnancy has been reported, but has not shown its direct relationship.<sup>8</sup>

In the lower limbs is observed nearly 50% of cases. Other locations described in less frequently are: face, ear, abdomen, vulva, penis and pubis. The scalp may be affected by up to 5% of cases, being rarer.<sup>3</sup> Thus, in the case approached the affected site and patient age corroborate its rarity; dermal lesion with epithelial cell atypia, with the nature of the tumor margin and advanced aggression being the most important factor, regardless of cytologic



atypia.<sup>6</sup> Therefore, we consider challenging the diagnosis based only on clinical presentation due to rarity of the case, and histopathological examination often required for final diagnosis of the lesion.<sup>4</sup>

Recently relationship was found mutated in tumor gene P53 involved in tumor suppression,<sup>3,5</sup> considering, therefore, the P53 in the differential diagnosis. The patient underwent testing for P53 protein, obtaining the negative result, although the negativity of the P53 does not exclude the diagnosis.

The traditional method of treatment is surgical, with wide local excision and free margins. Mohs surgery has been reported with effectiveness in the treatment.<sup>1,9</sup> The electrocoagulation and radiotherapy showed a high risk of local recurrence, and chemotherapy and radiation therapy are ineffective with uncertain benefit.<sup>1</sup> Thus, the sentinel lymph node can aid in the detection of metastases.<sup>9,10</sup>

Regarding the prognosis, several factors are correlated. However, the best prognostic indicators for a pathologically

unsatisfactory results seem to be a high mitotic index, lymphatic invasion and tumor size and a greater depth than 7 mm.<sup>9,10</sup>

## CONCLUSIONS

In our case, the participation of the dermatopathologist seemed crucial to the final or conclusive diagnosis, since CP is a rare and aggressive form of skin cancer, whose etiology is unknown. The CP should be a differential diagnosis of papular or nodular skin lesions mainly in the most affected population, ie, people in the sixth decade of life.

### Correspondence:

**María Angélica Leonardo Fiel Cruz**

Santa Joaquina de Vedruna Street, 1105,

Maringá (city), Paraná (State),

Brazil, Postal Code: 87013-230.

Tel: 55 44 9972-3111

E-mail: ariel@bs2.com.br

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