

Primary angiosarcoma of the scalp and lepromatous leprosy: an uncommon combination in an elderly patient

Angiossarcoma primário em couro cabeludo e hanseníase virchowiana: associação incomum em paciente idosa

ABSTRACT

Introduction: Primary cutaneous sarcomas are rare mesenchymal cancers with histopathological heterogeneity. Angiosarcomas are an uncommon cutaneous malignant sarcoma subtype that affect mainly elderly male patients. Their location is primarily cephalic, and they present as multifocal lesions which lead to local edema, bleeding and ulceration. Aggressiveness, fast growth and undefined surgical margins explain the high rates of recurrence. We describe a case of primary angiosarcoma of the scalp in an elderly female patient, who was being treated with a multidrug therapy for lepromatous leprosy. The combination of angiosarcoma and leprosy is uncommon, and the absence of similar reports in the literature motivated the description of this case.

Keywords: skin neoplasms; sarcoma; leprosy, lepromatous.

RESUMO

Introdução: Os sarcomas cutâneos primários são neoplasias mesenquimais raras e de grande heterogeneidade histopatológica. O angiossarcoma é um subtipo de sarcoma cutâneo maligno pouco comum, que atinge preferencialmente homens idosos. De localização tipicamente cefálica, apresenta-se como lesões multifocais que levam a edema, sangramento e ulceração locais. São agressivos, de crescimento rápido e difícil delimitação de margens cirúrgicas, o que explica altas taxas de recorrência. Descreve-se caso de angiossarcoma primário em couro cabeludo de paciente idosa em uso de poliquimioterapia para hanseníase virchowiana. Associação de angiossarcoma e hanseníase é incomum. A ausência de relatos semelhantes na literatura motivou a descrição do caso.

Palavras-chave: neoplasias cutâneas; sarcoma; hanseníase virchowiana.

INTRODUCTION

Primary cutaneous sarcomas are rare mesenchymal neoplasias of great histopathological heterogeneity. With the development of the fields of dermatologic surgery and cutaneous oncology, dermatologists have been increasingly required in the diagnosis and propaedeutic of these less frequent tumors. Nevertheless, there are still few studies on the subject.¹

Angiosarcomas are a malignant cutaneous sarcoma subtype – comprising around 2% of soft tissue sarcomas – with morphologic and functional characteristics similar to those of the vascular and lymphatic system of the normal endothelium. Initially described by Caro and Stubenrauch in 1945, they have uncommon characteristics,² are more prevalent in male than female patients by a 2:1 ratio, and are more common in elderly patients.³

Angiosarcomas are traditionally classified as: angiosarcoma, angiosarcoma associated with lymphedema (also known as lymphangiosarcoma or Stewart-Treves syndrome) and angiosarcoma of the breast, induced by radiation.⁴

Its pathogeny is still uncertain. It can possibly be associated with chronic lymphedema (Stewart-Treves syndrome) and

Relato de Caso

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has been described as occurring after mastectomy or in previously irradiated areas.^{5,6,7} There are reports of correlations with genetic and environmental factors, infection by type 8 herpes virus, and innate or acquired immunodeficiencies.⁵ In the literature, there is a report of angiosarcoma in the scalp of a patient who had undergone a kidney transplant, in addition to some cases in patients with a history of cardiac ischemia and other chronic cardiovascular disorders.^{8,9}

A recent review of 47 cases demonstrated that 76% of the patients were male, with a mean age of 75.1, and that almost all the lesions (96%) were cephalic.¹⁰ Some authors have tried to correlate the location of the lesions with chronic exposure to the sun, but that association has not been formally accepted until now.¹⁰ There are two reports associated with cicatricial alopecia.

Angiosarcomas usually occur as multifocal and asymptomatic lesions that can result in local edema, bleeding and ulceration. They are aggressive and fast growing, presenting difficult delimitation of surgical margins – which explains the high rates of local recurrence and metastases.⁷ The time between the beginning of the lesions and the diagnosis can be long (median of five months), which combined with the locoregional invasion can lead to a bad prognosis.^{7,10}

CLINICAL SUMMARY

We describe the case of a 71-year-old female who had been receiving dermatologic treatment for four months for lepromatous leprosy. She searched for medical care in February 2010, describing the appearance of a fast growing and very sensitive lesion (bleeding with minimal traumas) in the scalp. She was diabetic, hypertensive, and anemic, resulting from multibacillary polychemotherapy (MB-PCT). She regularly took folic acid (5 mg/day), metformin (1.5 g/day) and captopril (75 mg/day).

In the clinical examination, the lesion presented a bluish-wine colored, friable nodule, of about 3 cm in the frontal region of the scalp (Figure 1). The histopathologic analysis of the biopsy revealed an infiltrative neoplastic proliferation in the dermis, consisting of a great number of dilated and tortuous blood vessels, many of them anastomosed and replete with erythrocytes (Figure 2). The presence of considerably atypical endothelial cells along these vessels called attention, suggesting an angiosarcoma diagnosis (Figure 3). Biochemistry examinations and computerized tomography of the thorax, abdomen and pelvis, in addition to magnetic resonance of the skull, did not demonstrate significant alterations.

A complete exeresis of the lesion was carried out, followed by adjuvant radiotherapy and chemotherapy. After two months of follow-up, three nodules, measuring about 0.5 cm, appeared adjacent to the initial lesion, whose exeresis confirmed satellitosis.

The patient is currently receiving chemotherapy treatment, with no new signs of the disorder, using MB-PCT (ninth dose).

DISCUSSION

Angiosarcomas are vascular and lymphatic neoplasias that occur in elderly patients. Almost all cases are found in the head



Figure 1: Crumbly nodule, of bluish-wine color, measuring circa 3 cm, in the frontal region of the scalp

and neck, manifesting mainly in the scalp of women – such as in the case described above – and in frontal and center-facial areas in men.^{2,9}

Clinically, angiosarcomas can manifest in a great variety of ways: from macules, papules, plaques and even fast-growing and scarcely-defined erythematous nodules. The violet coloration of the lesions can cause them to be mistaken for ecchymoses and hematomas, common senile lesions whose possible malignancy can pass unnoticed – thus delaying the diagnosis and compromising the prognosis.

Image-based examinations can corroborate the diagnosis, meaning that both magnetic resonance and computerized tomography can be used in the staging of that neoplasia.¹⁰ The diagnosis is confirmed by a biopsy and histopathological analysis of the tissue.

Histologically, a well-differentiated angiosarcoma is formed by a network of well-formed irregular vascular channels in the dermis, usually delineated by flat endothelial cells. A moderately-differentiated tumor contains agglomerations of more compressed vessels and vascular channels delineated by multiple layers of atypical endothelial cells that frequently display intraluminal proliferation. In cases of less-differentiated angiosarcomas,

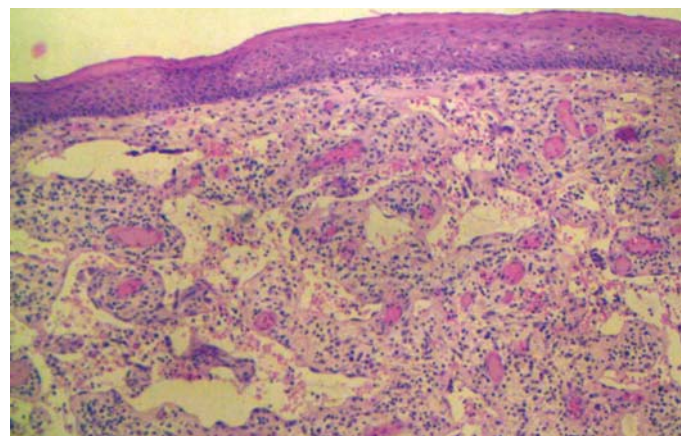


Figure 2: Hematoxylin-Eosin staining (40x): infiltrative neoplastic proliferation in the dermis, composed of a great number of dilated and tortuous blood vessels

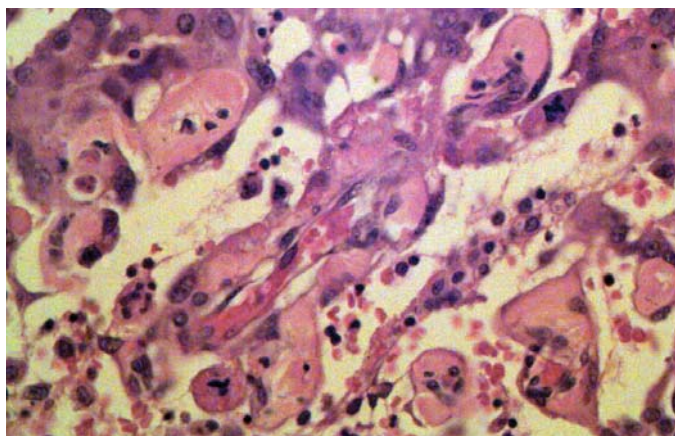


Figure 3: Hematoxylin-Eosin staining (400x): presence of atypical endothelial cells following the course of the neoplastic vessels

there may be exclusively atypical pleomorphic cells and the formation of only a tenuous vascular lumen.⁴ In the case described in this paper, the high degree of cellular atypias pointed to the latter variant. It is important to bear in mind that the high degree of atypia is what differentiates the lesion, for instance (morphologically) Kaposi's sarcoma from other vascular sarcomas with intermediary malignant behaviour that present milder atypias.

The immunohistochemistry was positive for the markers CD31 (blood platelets' adhesion molecule to the endothelium), CD34 (antigen against human hematopoietic progenitor cells) and factor VIII antigen (von Willebrand factor). Although such markers indicate the tumor's vascular origin, they do not, in isolation, allow its sub-classification.¹

The tumor's depth is an important prognostic factor; superficial lesions, located above the fascia, present better development. The TNM staging system, the accepted method of classifying malignant tumors, includes the item G (histological graduation) for sarcomas; angiosarcomas are always considered high-grade tumors (G4). The parameter T refers to the size of the lesion and the depth in relation to the fascia (T1: less than or equal to 5 cm, T2: larger than 5 cm). Lymphatic involvement, although rare (less than 4%), brings with it a prognosis similar to that of a distant metastasis (stage IV). In a study of 1,772 sarcoma patients at the Dermatology and Oncology Department of the Medical School of the Universidade de São Paulo (FMUSP) only 46 (2.6%) presented nodal metastases.¹ In that case, the staging was established as T1N1MxG4.

The differential diagnosis involves vascular malformations (such as benign hemangiomas) to other vascular tumors (such as Kaposi's sarcoma), in addition to squamous cell carcinoma and melanomas.⁷

Treatment must be individualized, according to the stage of the disorder and the patient's general state. Due to the rarity of the condition, there are no prospective randomized studies that might provide a base for therapeutic standardization. Exeresis, either alone or combined with radiotherapy, is used in initial cases. Chemotherapy with doxorubicin, cyclophosphamide, methotrexate and vincristine is indicated in advanced

cases, whereas radiotherapy is an option for the locoregional treatment of extensive lesions or as an adjuvant therapy.¹⁰ Also, there are reports of an elderly patient surviving for 5 years (asymptomatic) with the exclusive use of locoregional radiotherapy in a scalp angiosarcoma.²

There are reports of combined use of alpha interferon and 13- cis-retinoic acid in advanced stages, with good response.¹⁰ New therapeutic modalities, such as interleukin-2 and intravenous liposomal doxorubicin, are being developed and used in clinical trials.^{5,6,9} Another therapeutic option is paclitaxel, a therapy already well defined in the treatment of Kaposi's sarcoma, combined or not with the usual chemotherapy.⁷

With high rates of local recurrence (84% in five years), the prognosis is reserved. The survival rate during that period is around 34%; cerebral, pulmonary and cardiac metastases are the main causes of death.¹ Holden and others reported a series of 72 treated patients whose survival after five years was 12%, with a median of 15 months.¹⁰

Elderly patients usually display less attention to aesthetics and self-care, and co-morbidities that require the use of several medications can contribute to a higher susceptibility to infections. Hansen's Disease is a prevalent infectious dermatosis and can occur in any age group. The appearance of primary angiosarcoma during MB-PCT therapy is uncommon but not improbable, since our patient presented a deficient immune response. No similar reports demonstrating the relationship of angiosarcomas with Hansen's Disease or the polychemotherapy used in this case were found in the Brazilian or international literature, making this case unique and of academic interest. ●

REFERÊNCIAS

1. Fleury LFF Jr, Sanches JA Jr. Sarcomas cutaneos primarios. *An Bras Dermatol.* 2006;81(3):207-21.
2. Gkalpakiotis S, Arenberger P, Vohradnikova O, Arenbergerova M. Successful radiotherapy of facial angiosarcoma. *Int J Dermatol.* 2008;47(11):1190-2.
3. Murray S, Simmons I, James C. Cutaneous angiosarcoma of the face and scalp presenting as alopecia. *Australas J Dermatol.* 2003;44(4):273-6.
4. Enzinger FM, Weiss SW. *Malignant Vascular Tumors.* In: *Soft Tissue Tumors.* 4^a ed. St Louis, Missouri; 2001.
5. Eiling S, Lischner S, Busch JO, Rothaupt D, Christophers E, Hauschild A. Complete remission of a radio-resistant cutaneous angiosarcoma of the scalp by systemic treatment with liposomal doxorubicin. *Br J Dermatol.* 2002; 147(1): 150-3.
6. Kibe Y, Kishimoto S, Katoh N, Yasuno H, Yasumura T, Oka T. Angiosarcoma of the scalp associated with renal transplantation. *Br J Dermatol.* 1997;136(5):752-6.
7. Morgan MB, Swann M, Somach S, Eng W, Smoller B. Cutaneous angiosarcoma: A case series with prognostic correlation. *J Am Acad Dermatol.* 2004;50(6): 867-74.
8. Lang PG, Maize JC. Extensive angiosarcoma on chronically sun-damaged skin. *Am J Clin Dermatol.* 2004;5(1):53-5.
9. Kikuchi A, Satoh T, Yokozeki H. Primary Cutaneous Epithelioid Angiosarcoma. *Acta Derm Venereol.* 2008; 88(4):422-3.
10. Wollina U, Graefe T, Fuller J. Angiosarcoma of the scalp: new treatment modalities. *J Eur Acad Dermatol Venereol.* 2001;15(4):370-1.