

# Angiolymphoid hyperplasia with eosinophilia treated with imiquimod

## Hiperplasia angiolinfoide com eosinofilia tratada com imiquimod

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### Abstract

Angiolymphoid hyperplasia with eosinophilia (ALHE), or epithelioid hemangioma, is an uncommon benign vascular proliferation that rarely affects children and only occasionally involves the upper extremities. We report a previously healthy 9-year-old girl with a 1-year history of pruritic, violaceous, firm nodules grouped on the left arm and forearm, refractory to topical corticosteroids. Histopathology showed dermal dilated capillary vessels lined by plump endothelial cells, with a dense lymphocytic infiltrate rich in eosinophils and no lymphoid follicles. Laboratory tests, including eosinophil count, immunoglobulin E, renal function, and urinalysis, were normal, and *Bartonella* spp. The studies were negative. The findings supported ALHE and excluded Kimura disease and bacillary angiomatosis. Given the multifocal involvement and the wish to avoid invasive treatment, topical imiquimod 5% was started once daily, leading to complete clinical resolution within 1 month and no recurrence after 2 years. This case highlights imiquimod as a useful non-invasive option in pediatric multifocal ALHE.

**Keywords:** Angiolymphoid hyperplasia with eosinophilia. Epithelioid hemangioma. Imiquimod.

### Resumo

A hiperplasia angiolinfoide com eosinofilia (ALHE), ou hemangioma epitelióide, é uma proliferação vascular benigna pouco frequente, rara em idade pediátrica e nos membros superiores. Relata-se o caso de uma criança de 9 anos, previamente saudável, observada por nódulos pruriginosos, violáceos e firmes, agrupados no braço e antebraço esquerdos, com 1 ano de evolução e refratários à corticoterapia tópica. A histopatologia revelou vasos capilares dérmicos dilatados, revestidos por células endoteliais tumefactas, associados a infiltrado linfocítico denso rico em eosinófilos, sem folículos linfóides. A avaliação laboratorial, incluindo eosinófilos, IgE sérica, função renal e urina, foi normal, e a pesquisa de *Bartonella* spp. negativa. Os achados sustentaram o diagnóstico de ALHE e excluíram doença de Kimura e angiomatose bacilar. Foi iniciado imiquimod tópico a 5%, com resolução completa das lesões em um mês e sem recidiva após dois anos. Este caso relembra o imiquimod como opção não invasiva eficaz na ALHE.

**Palavras-chave:** Hiperplasia angiolinfoide com eosinofilia. Hemangioma epitelióide. Imiquimod.

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## Introduction

Angiolymphoid hyperplasia with eosinophilia (ALHE), or epithelioid hemangioma, is an uncommon benign vascular proliferation that typically presents in adults as pruritic papules or nodules on the head and neck.<sup>1-3</sup> Pediatric cases are rare, and involvement of the upper extremities is unusual.<sup>4</sup> We report a case of multifocal ALHE of the arm and forearm in a 9-year-old girl, successfully treated with topical imiquimod.

## Case report

A previously healthy 9-year-old girl was referred to the dermatology outpatient clinic for a 1-year history of pruritic lesions on the left upper limb, refractory to topical corticosteroid therapy. Physical examination revealed approximately five grouped violaceous nodules with a firm, duroelastic consistency on the left arm and forearm, along with several residual hyperpigmented macules (Fig. 1A). Dermoscopic evaluation of the largest lesion showed a homogeneous central pink area surrounded by peripheral desquamative lines (Fig. 1B). No cervical or axillary lymphadenopathy was detected.

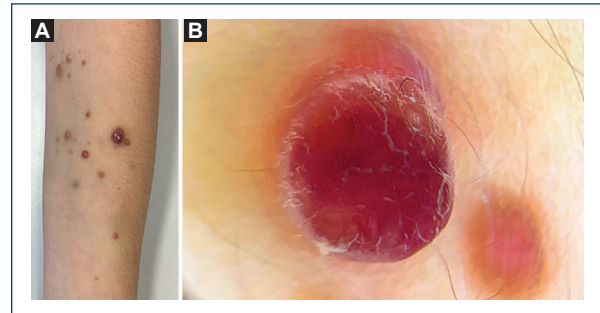
Histopathological examination revealed a proliferation of dilated capillary vessels lined by plump endothelial cells within the dermis, accompanied by a dense lymphocytic infiltrate rich in eosinophils, without formation of lymphoid follicles or germinal centers (Fig. 2).

Laboratory evaluation, including complete blood count, serum creatinine, immunoglobulin E (IgE) levels, and urinalysis, showed no abnormalities. Serological testing and polymerase chain reaction (PCR) of the biopsy specimen for *Bartonella* spp. were negative.

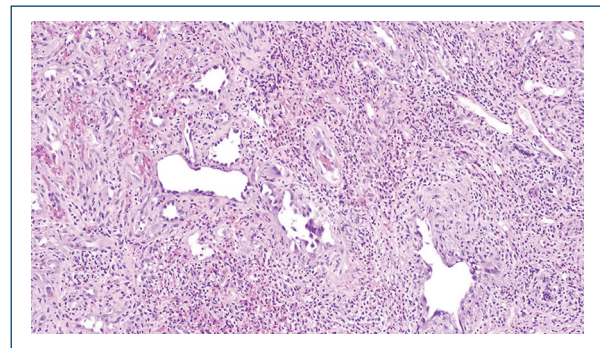
## Discussion

These findings were consistent with ALHE, also known as epithelioid hemangioma. Given the multifocal involvement of the arm and forearm and the benign nature of the condition, topical imiquimod 5% was initiated once daily. Clinical resolution was observed after 1 month of treatment (Fig. 3), with no recurrence over 2 years of follow-up.

ALHE is an uncommon benign vascular proliferative disorder characterized by angiolymphoid hyperplasia with eosinophilic inflammation.<sup>1</sup> Its pathogenesis remains uncertain, with proposed mechanisms ranging from a lymphoproliferative disorder<sup>2</sup> to a reactive vascular hyperplasia triggered by trauma, infection,



**Figure 1:** Clinical presentation. **A:** initial presentation with grouped angiomatous papulonodules on the left upper limb. **B:** dermoscopy of the largest lesion, showing a homogeneous central pink area with a peripheral desquamative halo.



**Figure 2:** Histopathology demonstrating dilated capillary vessels lined by plump endothelial cells with an eosinophil-rich inflammatory infiltrate.

hormonal factors, or vascular injury, possibly related to underlying arteriovenous shunts.<sup>1,3</sup>

ALHE most commonly affects Asian and caucasian patients, with a mean age of 37.6 years, and typically presents as a single pruritic lesion on the head and neck, particularly in the periauricular area, although multifocal disease and widespread involvement have been reported.<sup>4</sup> Upper extremity involvement accounts for approximately 10-15% of cases, and pediatric presentations are infrequent,<sup>4</sup> making the present case notable for both the patient's young age and the limb localization.

Histologically, ALHE is characterized by plump endothelial cells forming variably sized vascular channels, accompanied by a diffuse inflammatory infiltrate rich in eosinophils. Well-formed lymphoid follicles are absent in most cases.<sup>1,3</sup>

The main clinicopathological differential diagnosis is Kimura disease, but it typically presents with deeper



**Figure 3:** Complete regression after one month of once-daily treatment with 5% imiquimod.

subcutaneous masses, prominent lymphadenopathy, peripheral eosinophilia, elevated serum IgE levels, possible renal involvement, and histologically shows hyperplastic lymphoid follicles with prominent germinal centers.<sup>3</sup> The absence of these systemic and histopathological features in the present case supports the diagnosis of ALHE.

Other clinical differential diagnoses, given the angiomatous morphology, include pyogenic granuloma, hemangioma, Kaposi sarcoma, insect bite reactions, and bacillary angiomatosis; however, these lack the characteristic histopathological features of ALHE.<sup>1,3,5</sup> Bacillary angiomatosis was further excluded by negative *Bartonella* spp. PCR testing.

Treatment of ALHE remains challenging, with surgical excision considered the most effective approach but associated with recurrence rates of up to 40%.<sup>4</sup> Laser therapies have shown encouraging results in limited reports, particularly for multifocal disease, although

robust evidence is lacking.<sup>4</sup> Topical imiquimod has emerged as a non-invasive alternative,<sup>5,6</sup> supported by its efficacy in infantile hemangiomas. Redondo et al. reported complete lesion resolution with imiquimod 5% applied 5 days/week for 16 weeks without recurrence,<sup>6</sup> with higher application frequency associated with faster clearance.<sup>5</sup>

In this child with multifocal disease, imiquimod was favored over surgical or laser treatment to avoid invasive procedures, potential scarring, and the need for anesthesia. Daily application led to complete clinical resolution within 1 month, with no recurrence over 2 years of follow-up.

### Funding

None.

### Conflicts of interest

None.

### Ethical considerations

**Protection of human subjects and animals.** The authors declare that no experiments on humans or animals were performed for this research.

**Confidentiality, informed consent, and ethical approval.** The authors obtained approval from the Ethics Committee for the analysis of routinely collected and anonymized clinical data; therefore, individual informed consent was not required. Relevant ethical recommendations have been followed.

**Declaration on the use of artificial intelligence.** The authors declare that no generative artificial intelligence was used in the writing or creation of the content of this manuscript.

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