

Angiolymphoid Hyperplasia with Eosinophilia Involving the Occipital Artery: Case Report and Review of Literature

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ABSTRACT

Angiolymphoid Hyperplasia with Eosinophilia (ALHE) is an atypical vascular tumour occurring primarily in the head and neck area, which must be distinguished from Kimura's disease. The lesions can appear as single or multiple grouped intradermal papules or subcutaneous nodules. We report a rare case of ALHE in a 57-year-old female with a large lesion of three nodules involving the right occipital artery which had a long term evolution and we treated it by surgical excision. The definitive histopathological diagnosis was ALHE. Our case report is accompanied by a discussion of clinical, radiological and histological features. Surgical excision with free margins is the treatment of choice but, even though ALHE is considered a benign condition, recurrence is common.

Keywords: Epithelioid haemangioma, Head and neck, Kimura's disease, Occipital region, Scalp, Surgical treatment

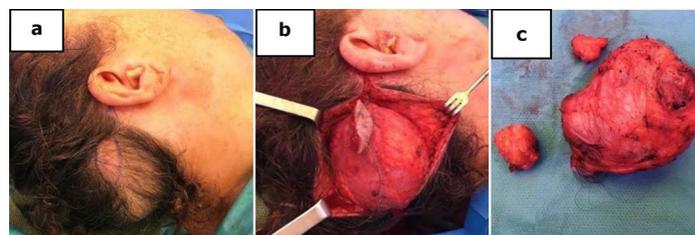
CASE REPORT

A 57-year-old Caucasian female consulted our clinic to assess the appearance of a large right occipital soft and well-defined swelling which had a progressive growth during last three years. It was not accompanied by pain, swelling, pruritus or bleeding [Table/Fig-1]. She denied any medical history of interest or trauma. On examination, she had a non-tender swelling, which was 6 cm x 6 cm in size, firm in consistency and without evidence of regional lymphadenopathy at physical examination. Initial laboratory values did not reveal peripheral eosinophilia or any other disorders. MRI showed a well-defined subcutaneous right suboccipital solid mass of 57 mm x 32 mm x 58 mm, with high cellularity and diffusion restriction, in contact with the occipital triangle muscles and the skull but without signs of bone erosion. Two smaller nodules of similar radiologic characteristics accompanied the main lesion. The biggest lesion had intense contrast enhancement, and a vascular supply through a branch of the occipital artery was observed [Table/Fig-1]. The differential diagnosis included a benign vascular lesion or neurofibromatosis, without being able to discard a malignant tumour. A surgical biopsy was performed and the histopathological result was diagnostic of Angiolymphoid Hyperplasia with Eosinophilia (ALHE). In January 2016 surgical removal of the three tumours under general anaesthesia was performed through a right occipital approach concealing the incision inside the hairline. The lesions showed a rich vascular supply and were located in a subcutaneous plane with well-defined margins without underlying muscle or bone

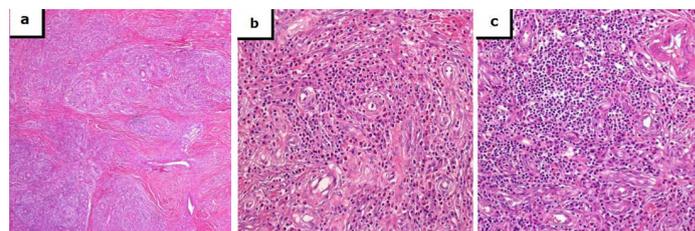
infiltration [Table/Fig-2]. The patient was discharged two days after the surgery without any complications. The histopathological examination showed a vascular lobular proliferation of small and medium blood vessels lined by plump, epithelioid endothelial cells with a rich perivascular infiltrate of mature lymphocytes which was admixed with numerous eosinophils without germinal center formation or eosinophilic abscess formation suggestive of ALHE [Table/Fig-3]. On follow-up, after nine months post-operatively, the patient had no pain, no pruritus, a correct healing and no signs of clinical recurrence.

DISCUSSION

ALHE is an uncommon, benign, vascular and inflammatory disorder involving the skin microvasculature with an undetermined pathogenesis. This anomaly was first described by Wells GC and Whimster IW in 1969 [1,2]. Initially, this entity and Kimura's disease were considered part of the same disease spectrum. Nowadays it is known that ALHE has distinctive histological features and both are categorized under eosinophilic dermatoses [1,3]. The main characteristics of ALHE and Kimura's disease are shown in [Table/Fig-4] [4].



[Table/Fig-2]: Intraoperative images. a) well-defined tumor of 6x6cm. b) exposure of the lesion through a right occipital approach. c) Macroscopic image of the surgical specimen (7x6x4cm) composed of three nodules.



[Table/Fig-3]: Histopathological examination images. a) H&E: Lobular proliferation of small and medium blood vessels. (4X) b) H&E: Perivascular infiltrate with numerous eosinophils. (10X) c) H&E: Vascular proliferations lined by plump, epithelioid endothelial cells with inflammatory infiltrate (lymphocytes and eosinophils) (10X).



[Table/Fig-1]: Contrast MRI T1 scan showing a large mass in the subcutaneous occipital plane with a vascular supply through an arterial pedicle from a branch of the occipital artery [white arrow]. a) axial view. b) sagittal view.

Characteristics	ALHE	Kimura's Disease
Clinical Presentation		
Age	3 rd -5 th decade	1 st -3 rd decade
Sex	Female (70%)	Male (85%)
Race	All	Asian
Site	Head and neck	Head and neck, salivary glands
Size of skin lesion	About 1cm	About 3cm
Growth progression	Longer (up to 25 years)	Shorter (1-4 years)
Aetiology	Unknown. Vascular neoplasm vs reaction at vascular traumatic insults	Autoimmune disorder, allergic or neoplastic reactions, insect bites, parasites, infection
Systemic Disease		
Lymph node involvement	Rare (5 to 20%)	Common (50-75%)
Salivary gland involvement	Rare	Common
Renal involvement	Rare	Common (about 20%)
Recurrence rate	30%	15-40%
Peripheral eosinophilia	Usually not present	Usually present (98%)
Concentration of IgE (serum)	Normal	High
Pruritus	Yes	No
AV Shunts	Usually	Rare
Histological Features		
Neoangiogenesis	Prominent	Less prominent
Plump, epithelioid endothelial cells	Present	Absent
Lymphoid follicles	Rare (10%)	Common
Eosinophilic abscesses	Not seen	Present
IgE deposits in germinal center	Absent	Present
Fibrosis	Absent	Present

[Table/Fig-4]: Main characteristics of ALHE and Kimura's disease.

Regarding its epidemiology, the latest revisions indicate that there is no sex or race predominance and the mean age of presentation is the fourth decade [5,6]. Adler B et al., also described that the typical appearance is a firm single (53.4%) or multiple (46.6%) nodules in the dermis or subcutaneous tissue, which can be asymptomatic or can be accompanied by pruritus (about third of cases), pain or bleeding, with a benign and chronic clinical evolution [5]. However, it remains unclear how often symptoms occur and if they have any prognostic value, the certain is that cases reports of the literature that we have reviewed manifested minor symptoms or were affected for the mass effect at the anatomical region. Systemic eosinophilia is rare. The head and neck region is the most frequent location, with predilection to the preauricular area (36.3%), face (28.2%) and scalp (17.3%) [4]. Conversely, it's rarely seen on the trunk, extremities [7], genitalia or in an extracutaneous location (orbit, lacrimal gland, oral mucosa, tongue, lung or intestinal mucosa) [8-10]. Injuries to the temporoparietal area are more likely to form large clusters. On the contrary, those located in other regions are usually solitary and well defined with better treatment response. Despite spontaneous involution has been described in 17 cases [5], this is exceptional, and no publication has reported malignant transformation [10]. This is an important datum because most of the patients consult for the injury months or years after its first manifestation, if ALHE was an injurious disease we would be in another context.

Aetiology could be related to hormones (hyperestrogenism, pregnancy) [6], infection (Herpes Virus 8, Human polyomavirus-6) [11], immunological factors, mild trauma (bites, vaccinations) or environmental factors (there is an increased prevalence in coastal communities) [5]. The expression of endothelial markers such as factor VII, CD34 or VEGF [1,12] has been reported. However, this is not an essential condition and its pathogenesis remains uncertain

[13]. The main entities to consider for differential diagnosis are epithelioid haemangioendothelioma, extranodal lymphoma, pyogenic granuloma, insect bite (which is characterized by a more florid mixed inflammatory infiltrate without vascular proliferation), angiosarcoma, Kaposi's sarcoma (slit-like spindle cells within vascular space with extravasation of erythrocytes and positive HHV [8], angioma (vascular proliferation without eosinophilic component) and cutaneous metastases [4].

Although therapeutic management is not well defined, there are multiple treatment options. Maybe this fact reflects the knowledge gap related to its true pathogenesis. As Adler BL et al., reflects in their systematic review, surgical excision is the most accepted treatment (44.2%), despite the difficulty in identifying the required surgical margin [5]. As we commented earlier, ALHE is not an aggressive disease and that's why a lot of other relevant and non-invasive treatments are cited on the literature: intralesional interferon- α , oral isotretinoin (which affects the angiogenesis process at a dose of 0.5 mg/Kg/day), topical imiquimod, systemic or injected steroids, injection of cytotoxic drugs, micrographic surgery, cryotherapy, intralesional radiofrequency ablation and laser therapy, the latter having a promising future due to low recurrence rates and its ability of being a good option for elderly or non-surgical patients [5,14]. A case report describes a 53-year-old man with frontal scalp ALHE lesion, received intralesional radiofrequency ablation avoiding an epidermal damage and having a reduction about 75%-80% of the injury, after three years of follow up he hasn't had any recurrence [14]. Recently, an interleukin-5 based therapy has been described to be effective [12,15], which can meddle in the production and activation of eosinophils. Some studies have reported the use of a daily oral dose of propranolol 40 mg in order to reduce the lesion size. It has been identified that surgical excision, dye laser and carbon-dioxide laser are the therapeutic options with less treatment failure (defined as incomplete resolution or recurrence after treatment of the disease) with 40.8%, 50% and 54.6% respectively, and the highest rates are for systemic (87.8%) and topical corticosteroids (98.2%) [5]. Spontaneous resolution is an unusual behaviour of ALHE and treatment failure has been related to early age of onset, longer duration, multiple lesions and presence of symptoms.

In our case, the patient was a healthy mid-age woman with an important mass at occipital scalp, being a suspect of ALHE which involved the occipital artery. Surgery was the therapy of choice because of the size of the lesion and its aesthetic involvement. During surgery a wide surgical margin was able to achieve. Nine months later the patient remains asymptomatic without signs of local recurrence. Despite surgical excision remains to be the most effective treatment option, its recurrence rate is closely related to the identification of clear surgical margins to excise the lesion properly. This implies the need for further research into the required surgical margin necessary to excise the lesion properly.

CONCLUSION

We can conclude that, may be because we don't know the essential aetiology, and ALHE is a rare disease, multiple treatments had been tested without find a non-invasive standard treatment. It's important to highlight that there is few published literature and the studies revised are insufficient to conclude and identify a standard treatment because current knowledge derives from retrospective reports and case series, leading to a non-evidence-based treatment approach. Although, surgery is the best option due to having the lower recurrence rate. Therefore, whatever the treatment of choice applied, it is essential to carry out close monitoring of the patient to detect possible recurrences.

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Date of Submission: **Aug 03, 2016**
 Date of Peer Review: **Aug 29, 2016**
 Date of Acceptance: **Oct 17, 2016**
 Date of Publishing: **Mar 01, 2017**

FINANCIAL OR OTHER COMPETING INTERESTS: None.