American Journal of Otolaryngology–Head and Neck Medicine and Surgery xxx (2017) xxx–xxx

Contents lists available at ScienceDirect

American Journal of Otolaryngology–Head and Neck Medicine and Surgery

journal homepage: www.elsevier.com/locate/amjoto

Eosinophilic hyperplastic lymphogranuloma: Clinical diagnosis and treatment experience of 41 cases

Yang Jiang [a,*], Qingquan Hua [a], Jie Ren [a], Feng Zeng [a], Jianfei Sheng [a], Hua Liao [a], Zhijian Zhang [a], Hongxia Guan [b]

[a] Department of otolaryngology, Renmin Hospital of Wuhan University, Wuhan, China
[b] Department of otolaryngology, Hubei Material and Child Health Hospital, Wuhan, China

ARTICLE INFO

Article history:
Received 28 April 2017
Available online xxxx

Keywords:
Eosinophilic hyperplastic lymphogranuloma
Kimura disease
Clinical features
Histopathology

ABSTRACT

Purpose: The purpose of this study was to investigate the clinical features of eosinophilic hyperplastic lymphogranuloma (EHLG) in the head and neck.
Materials and methods: Collecting the patients who diagnose with EHLG by pathological examination. The EHLG patients with the masses involved regions, such as involved inguinal region, chest wall, abdominal wall, anterior superior iliac spine or clavicle, instead of head and neck were excluding. All of the participants will sign the informed consent form. The history data includes: clinical history, blood routine test, pathological examination, and recurrence will be collected.
Results: A total of 41 patients of EHLG were included. These patients predominantly presented as an enlarging and painless single or multiple masses with a history of repeated swelling. There were the complaint of itchy skin and pigmentation. The routine blood test showed that the percentage value of eosinophil increased in almost patients including 26 cases had raised absolute eosinophil count. The serum level of IgE was increased in 29 cases remarkably. With the methods of treatments, 36 patients received surgical excision, 3 patients accepted hormonotherapy, and another 2 patients for radiotherapy. The recurrence of EHLG was in 9 patients.
Conclusions: EHLG is a rare disease. The clinical manifestation (itchy skin and pigmentation) and increased eosinophil play critical values to the diagnosis of EHLG. Confirmed diagnosis always depends on pathological examination. Surgery is a preferred treatment, while low dose of radiotherapy is necessary for preventing relapse after operation and hormonotherapy.

1. Introduction

Eosinophilic hyperplastic lymphogranuloma (EHLG) was first described from china by Kimm and Szeto [1] in 1937, and became widely known as 'Kimura disease' after reported in details by Kimura and referred to it as an 'unusual granulation combined with hyperplastic changes in lymphoid tissue' [2] in 1948. It is a rare form of chronic inflammatory disorder of unknown etiology that predominantly has a predilection for Orientals. EHLG occurs commonly in the superficial skin of head and neck region and invades in young and middle-aged individuals [3]. One of the critical clinical manifestations is regional lymphadenopathy which it might be the only initial symptom of EHLG. EHLG is not a common disease which is easy to be confused with angiolymphoid hyperplasia with eosinophilia (ALHE) [4]. Some authors believe that EHLG is a deeper form of ALHE. However, increased clinical and histopathologic characteristics recently show the distinguish of the two diseases recently [5,6]. EHLG appears to represent a primary inflammatory process with secondary vascular proliferation, while ALHE may represent an arteriovenous malformation with secondary inflammation. The pathogenesis of EHLG is not clear, and there is also not a consensus on its diagnosis. We also cannot get an exact conclusion depending on ultrasonography or imaging examinations (CT, MRI and so on). It is shortly hard to distinguish from other diseases, such as inflammatory lesions, hemangioma, and malignant tumors, with a high rate of misdiagnosis and missed diagnosis. Therefore, increasing doctor's clinical experience and recognizing it as a distinctive reactive process is pivotal. Not only to avoid a waste of medical resources and anxiety of patient but to further studies of its etiology and pathogenesis. The experience studied retrospectively the clinical presentations in 41 cases of EHLG to reveal further insights of features of this disease.

2. Materials and methods

2.1. Diagnostic standard

All of the41 patients should be diagnosed with EHLG by pathological examination according to the criteria [7] at the Renmin Hospital of Wuhan University.

* Corresponding author at: Department of otolaryngology, Renmin Hospital of Wuhan University, 238 Jiefang Road, 430060 Wuhan, China.
E-mail address: yangj_1977@163.com (Y. Jiang).

http://dx.doi.org/10.1016/j.amjoto.2017.07.007
0196-0709/

2.2. Inclusion criteria

Meeting with the diagnostic standard and the EHLG patients with the masses involved in the head and neck regions. What's more, all of the participants will sign the informed consent forms voluntarily, accept the treatment the otolaryngologist asked, and have a good follow-up.

2.3. Exclusion criteria

The participants of EHLG involved inguinal region, chest wall, abdominal wall, anterior superior iliac spine or clavicle, instead of head and neck were excluding. Or the patients cannot coordinate the treatment frequently, or there are adverse reactions or other unpredictable accidents during treatment and follow-up.

2.4. Data collection

All of the patients will collect the clinical history data, such as: age, course, affected regions, symptoms, blood routine test, imaging examination and so on. Histopathologic sections from postoperative or biopsy tissues from all patients were reviewed for histopathologic changes, location, lesional severity, and intraglandular lymph nodes. Follow-up was carried out by calling or subsequent visiting in hospital.

3. Results

3.1. Clinical general data

A total of 41 participants were included. A synopsis of the clinical features of all cases is listed in Table A.1. There were 28 male and 13 female (the ratio was 2.15:1) included. The age was from 10 to 74 years, average age was 35 years, with a long duration (means, 7.5 years). The disease characterized as either single (35 cases, 85.37%) or multiple regions (6 cases, 14.63%), and mainly involved periauricular (6 cases, 12.77%), salivary glands (9 cases, 19.15%), cervical (24 cases, 51.06%) and others (8 cases, 17.02%) in isolation or combination. The in maximum diameter size of the mass ranged from 0.5 to 12 cm, mostly focused on 2–5 cm (30 cases, 63.83%). EHLG usually presented as a painless subcutaneous swelling (30 cases, 73.17%), itchy skin (14 cases, 34.15%) and pigmentation (10 cases, 24.39%). There were no significant changes of the overlying skin (delete). 12 cases (29.26%) of EHLG showed indistinct borders in deeply seated lesions, but more cases invested as well demarcated in superficial lesions or enlarged lymph nodes. Follow-up was obtained in all patients and ranged from 0.5 to 10.3 years with an average of 7.3 years. 36 cases were treated by surgery, of which 10 cases combined with low doses of radiotherapy. 3 cases were treated with glucocorticoid therapy, of while 1 patient combined with low doses of radiotherapy. The remaining 2 patients received radiotherapy only. The recurrence of EHLG after single or combined treatments was documented in 9 patients. There was no recorded mortality or malignant transformation in this series.

Table A.1
Clinical features of Kimura's disease in current study.

Sex	
Male	28
Female	13
Number of regions	
Single	35
Multiple	6
Number of tumors	
Single	24
Multiple	17
Locations of regions[a]	
Periauricular	6
Salivary glands	9
Neck	24
Others	8
Duration	
<1 year	22
1–5 year	7
>5 year	12
Size of nodes[b]	
<2 cm in diameter	8
2–5 cm	30
>5 cm	9
Manifestation	
Painless mass	30
Itchy skin	14
Pigmentation	10
Peripheral blood eosinophilia	
Normal	9
Elevated	32
IgE levels	
Normal	12
Elevated	29

[a] Locations of regions included single and multiple nodes.
[b] If there are one more nodes together, measure the biggest one.

3.2. Laboratory examination

At the clinical presentation, 32 cases showed increased proportion of peripheral blood eosinophil, of which 91% cases had raised absolute eosinophil count. The serum level of lgE was measured in all cases, of which 29 cases elevated remarkably (Table A.1).

3.3. Histologic features

All of the patients were confirmed by histologic examination. Microscopic examination exposed vital and similar histologic characteristics in all lesions of EHLG. The prominent microscopic feature was remarkable lymphoid hyperplasia (Fig. 1A), with increased capillaries, which formed new lymphoid follicles. Active germinal centers were detected in these well-formed follicles (Fig. 1B). The interfollicular areas were expanded with various degrees of vascular hyperplasia and hyalinization in the majority of lesions (38 cases, 92.68%). Foci of closely packed lymphocytes were admixed with diffuse infiltration of eosinophils, plasma cells and mast cells (Fig. 1C,D). When infiltrated by eosinophils, some germinal centers with infiltrated by eosinophils also observed progressive destruction of the follicle architecture and vascularization of the germinal centers. The cytoplasm of lymphocyte was scanty, light-staining and no vacuolated. Fibrosis was always present and most noticeable in advanced-stage disease or in subcutaneous and salivary glands lesions. Eosinophilic microabscesses were occasionally seen within the lymphoid follicle or in the connective tissue. As with the subcutaneous lesions, homogeneous material between the germinal center cells was often seen, and folliculolysis was often associated with apparent eosinophilic infiltration.

4. Discussion

EHLG, which is a benign disease has been seen mostly in young Asian men with a peak incidence in the third decade [3,8], usually, presents as a massive and subcutaneous swelling with a predilection for the head and neck region characteristically. It also reports occasionally in groin or forearm. The lesion is solitary mostly but multiple sometimes. Besides the tumefaction, the patients always complained of itchy or pigmented skin. It maybe because the inflammatory cells for example eosinophils release certain neurotransmitters or cytokines, leading to the noted skin irritations and occasionally infiltrated neural fibers. Involvement of the salivary glands was frequently reported in other studies [7,9,10]. However, only 9 cases (21.95%) were included in our experience because of different regional, races and countries. Clinically and pathologically, the affected glands resemble the benign lymphoepithelial lesion of salivary glands to a certain extent, but the latter lesion contains myoepithelial islands and eosinophilic infiltration is absent. The reason for the frequent involvement of salivary glands in patients with EHLG is

Please cite this article as: Jiang Y, et al, Eosinophilic hyperplastic lymphogranuloma: Clinical diagnosis and treatment experience of 41 cases, American Journal of Otolaryngology–Head and Neck Medicine and Surgery (2017), http://dx.doi.org/10.1016/j.amjoto.2017.07.007