

Kimura's disease of the parotid glands and multiple cervical lymph nodes

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KEYWORDS

Kimura disease, lymphadenopathy, eosinophilia

SUMMARY

A Pakistani male patient presented with a parotid and retroauricular mass on both sides, which was diagnosed as Kimura's disease. Kimura's disease is a chronic disorder of unknown origin, which presents as subcutaneous mass, predominantly in the cervical and head region, with regional lymphadenopathy, blood eosinophilia and elevated serum IgE levels. Steroid therapy usually induces remission of the disease.

CASE

A 47-year-old male of Pakistani origin presented to our outpatients' clinic with a painless mass on both sides in the parotid region, extending to the neck and retroauricular regions (*figure 1*). The swellings had already existed for six years and had varied slightly in size over time. The patient did not have any complaints of pain, dry mouth, weight loss or night sweating and he felt in good condition. For years he had been suffering from itchiness over his whole body, without a known cause. He had not had any unsafe sexual contacts in the past and had lived in the Netherlands for the past nine years. Physical examination showed a bilateral swelling in the region of the parotid gland of approximately 8 x 3 cm in size on the left side, at the right of 6 x 3 cm. In addition, multiple lymph nodes were palpated in the head and neck region of 1-2 cm in diameter. There was no axillary or inguinal lymphadenopathy present and the liver and spleen were not enlarged. Retroauricular, the skin showed some erythema with excoriations.

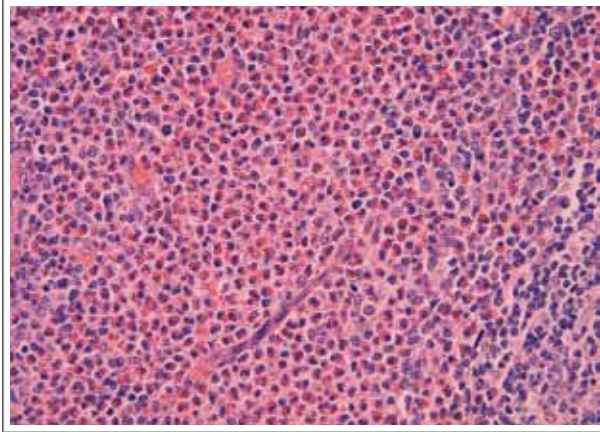
Figure 1. Bilateral swelling of the neck and parotid gland regions.



Laboratory findings were as follows: erythrocyte sedimentation rate 6 mm/h, haemoglobin 9.2 mmol/l, platelets $350 \times 10^9/l$, leucocytes $19.8 \times 10^9/l$, neutrophils $3.0 \times 10^9/l$, eosinophils $13.3 \times 10^9/l$, aspartate transaminase 26 U/l, alanine aminotransferase (ALAT) 32 U/l, lactate dehydrogenase 250 U/l, gamma glutamyltransferase 45 U/l, and alkaline phosphatase 84 U/l; the immunoglobulin E (IgE) serum level was not determined.

Chest radiography and abdominal echography were both normal. An incisional biopsy of one of the regional lymph nodes was performed. Histological examination showed a preserved nodal architecture with follicular hyperplasia, eosinophilic infiltrates with microabscesses in the interfollicular areas and proliferation of postcapillary venules (*figure 2*). There were several small clusters of epithelioid histiocytes without necrosis. Immunohistochemistry showed normal B and T cells

Figure 2. Detail of an eosinophilic micro-abscess. H&E, 200x magnification



compartments with Bcl-2 negative germinal centres. Histochemical staining with Ziehl-Nielsen, Grocott Methamine silver and periodic acid Schiff did not show any infectious agents. Both polymerase chain reaction and culture for *Mycobacterium tuberculosis* were negative.

Hence, based on the combination of these clinical data and biopsy results the diagnosis of Kimura's disease was made six months after first presentation.

Surgery was considered during this period. However, this was not performed because of the known high risk of complications and the risk of recurrent disease after surgery.¹ We followed a careful wait and see policy.

Initially the lesions did not grow, but two years after first presentation, both left and right parotid glands had grown to a size of 12 x 5 cm and 8 x 4 cm, respectively. The patient was complaining of progressive pruritus and erythematous lesions spread out over all parts of the body. During this period the leucocyte and eosinophil count were $18.0 \times 10^9/l$ and $10.4 \times 10^9/l$, respectively. Therapy with an H₂ blocking agent, cetirizine 10 mg/day, was started without effect. Subsequently we started steroid therapy (prednisolone 30 mg/day orally), combined with osteoporosis prophylaxis. The effects of prednisolone were spectacular within two weeks. Both the swelling and his pruritus diminished significantly.

DISCUSSION

Kimura's disease was first described in 1937 as eosinophilic hyperplastic lymphogranuloma, but later became known as Kimura's disease after Kimura *et al.* reported their findings in similar cases.²

Kimura's disease is most commonly seen in men, with an average age of 30 years, from Asian countries such as Japan, Taiwan and China, although it has also been reported in Caucasians. The symptoms can exist for several months to years before patients present, because the size of the lesion

progresses slowly. Patients mainly present with a mass in the neck and retroauricular region, but other locations such as temporal, inguinal and axillary regions have been reported. Parotid gland involvement is not very common, but nevertheless, may occur. In most cases the size of the mass is between 1 and 7 cm. In addition, multiple regional lymph nodes are involved presenting as a multifocal mass of 1 to 2 cm. As demonstrated in our patient, Kimura's disease can be accompanied by pruritis surrounding the tumour area, but also spreading out over the whole body.^{3,4} Histologically, the lymph nodes are characterised by eosinophilic microabscesses, eosinophilic folliculolysis, (perivenular) sclerosis and eosinophilic infiltrates in the germinal centre. Vascularisation of the germinal centre is common, but also germinal centre necrosis can be present. Besides hyperplasia, the lymph node architecture remains preserved and B and T cells are found in their normal nodal compartments. Laboratory findings that support the diagnosis of Kimura's disease are blood eosinophilia and elevated serum IgE levels. The level of blood eosinophilia seems to be closely related to the size of the mass and might be used as a parameter of disease activity.^{5,6} The aetiology of Kimura's disease still remains unclear. An abnormal T cell stimulation seems possible when considering the presence of eosinophilia and elevated IgE and IL-5 levels.^{4,7} Infectious agents as well as autoantibodies have not yet been identified. However, it is thought that an unusual autoimmune response or a parasitic infection is responsible for the onset of the disease.⁴

When considering the diagnosis, other common causes of lymphadenopathy such as metastatic lymphadenopathy, lymphoma and infectious diseases should be ruled out (table 1). In the differential diagnosis angiolymphoid hyperplasia with eosinophilia and Kikuchi's disease should be considered as well.³ Both angiolymphoid hyperplasia with eosinophilia and Kimura's disease present with soft tissue masses usually in the head and neck region with microscopically eosinophilic infiltrates. Histologically, in angiolymphoid hyperplasia with eosinophilia, vascular proliferation is more significant and regional lymphadenopathy, serum eosinophilia and elevated serum IgE levels are rare. In contrast with Kimura's disease, Kikuchi's disease is characterised by necrosis and large numbers of different histiocytes surrounding the necrotic areas.^{3,8}

A standard therapy has not yet been established. Multiple treatment options have been used with varying results, including surgery, radiotherapy, cetirizine, steroid and cyclosporine therapy.^{4,9} Recently, Sun *et al.* proposed treatment with imatinib, because of its inhibitory effect on the protein-tyrosine kinases PDGFR and c-Kit reported in the hypereosinophilic syndrome. Sun *et al.* found a positive expression of c-Kit and PDGFR α patients with Kimura's disease as well and imatinib could therefore have

Table 1. *Differential diagnosis of Kimura disease*

Disease	Clinical and histological characteristics
Kimura's disease	Predominantly young Asian men, neck and retroauricular mass, blood eosinophilia, elevated serum IgE levels, histologically preserved lymph node architecture, eosinophilic microabscesses and folliculolysis, eosinophilic infiltrates in the germinal centre
Angio-lymphoid hyperplasia with eosinophilia	Usually in the head and neck region, regional lymphadenopathy, blood eosinophilia and elevated serum IgE levels are rare, histologically microscopically eosinophilic infiltrates and vascular proliferation
Kikuchi-Fujimoto disease	Cervical lymphadenopathy, fever, elevated ESR, histologically necrosis and large numbers of different histiocytes surrounding the necrotic areas, associated with SLE
Kawasaki's disease	Predominantly young children, skin involvement, histologically geographic necrosis, fibrinoid thrombosis and neutrophilic infiltrates
Hodgkin's lymphoma	Young adults, systemic B symptoms, cervical and supraclavicular lymphadenopathy, presence of Reed-Sternberg cells
Non-Hodgkin's lymphoma	Children and young adults, systemic B symptoms, anaemia, tenderless peripheral lymphadenopathy, no striking polymorphous histiocytic infiltrate
Tuberculosis	Young adult (immigrants) from endemic countries, family history of tuberculosis, mostly cervical lymphadenopathy, mass fixed to surrounding structures, histologically caseating granulomas

a beneficial effect on Kimura's disease.^{4,10} As yet, no studies concerning imatinib therapy in Kimura's disease have been published. In our patient immunosuppressive therapy with steroids promptly resulted in a good clinical response. In conclusion, Kimura's disease is a chronic disorder of unknown origin. The subcutaneous masses are predominantly seen in the cervical and head region with regional lymphadenopathy, blood eosinophilia and elevated

serum IgE levels. Preliminary reports on the use of imatinib in Kimura's disease suggest a beneficial effect. However, in our patient steroid therapy was successfully initiated.

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