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Kimura Lymphadenitis of the Retroauricular Region in a 48-Year-Old Indonesian Male: A Rare Case Report with Long-Standing Disease Duration

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A B S T R A C T

Introduction: Kimura disease is a rare chronic inflammatory disorder of unknown etiology predominantly affecting young Asian males, characterized by painless subcutaneous masses in the head and neck region, peripheral eosinophilia, and elevated serum immunoglobulin E levels. This condition remains underreported in Southeast Asian countries, particularly Indonesia, leading to significant diagnostic delays. **Case presentation:** We present the case of a 48-year-old Indonesian male from Bali who presented with a retroauricular mass persisting for 10 years prior to definitive diagnosis. The patient had undergone surgical excision one month prior and was subsequently referred for further evaluation. Laboratory investigations demonstrated leukocytosis with a white blood cell count of 13.82 × 10^3/μL, peripheral eosinophilia of 8.60%, absolute eosinophil count of 1.19 × 10^3/μL, and elevated total serum immunoglobulin E of 168.16 KUI/L. Renal function was preserved without proteinuria despite prolonged disease duration. Histopathological examination confirmed Kimura lymphadenitis with reactive follicular hyperplasia, dense eosinophilic microabscesses, vascular hyalinization, and multinucleated Warthin-Finkeldey giant cells. The patient was managed with surgical excision followed by oral methylprednisolone 8 mg daily with planned tapering. **Conclusion:** This case highlights diagnostic challenges of Kimura disease in Indonesian clinical settings and the importance of histopathological confirmation.

1. Introduction

Kimura disease (KD) is a rare chronic inflammatory disorder of unknown etiology that predominantly affects the subcutaneous tissues of the head and neck region. The disease was first described in the Chinese literature by Kimm and Szeto in 1937 as a form of eosinophilic hyperplastic lymphogranuloma, and subsequently received its eponymous designation following a more systematic characterization by Kimura and colleagues in 1948.[1,2] Since its initial description, KD has been recognized as a distinctive clinicopathological entity characterized by painless subcutaneous nodules, regional lymphadenopathy, peripheral blood eosinophilia, and markedly elevated serum immunoglobulin E (IgE) levels. The disease process is characterized by a chronic, indolent course with a propensity for local recurrence despite various therapeutic interventions.[1,3]

Epidemiologically, KD demonstrates a striking predilection for young males of Asian descent, with the

majority of cases reported from Japan, China, and Southeast Asian countries. The disease typically presents between the second and fourth decades of life, with a male-to-female ratio ranging from 3:1 to 6:1.[1,3,4] The most commonly affected anatomical sites include the periauricular, retroauricular, submandibular, and cervical regions, although involvement of the inguinal, orbital, axillary, and extremity regions has also been documented in the literature.[2,5,6] Approximately 200 cases have been reported worldwide since the initial histopathological description, underscoring the extreme rarity of this condition. Despite its preferential occurrence in Asian populations, sporadic cases have been increasingly reported from Africa, the Middle East, and Western countries, expanding the recognized geographic distribution of this disease.[3,7]

The pathogenesis of KD remains incompletely understood despite extensive investigation over several decades. Current evidence strongly suggests a T-helper type 2 (Th2)-mediated immune dysregulation, supported by the consistent finding of elevated Th2 cytokines, including interleukin (IL)-4, IL-5, and IL-13, as well as tumor necrosis factor-alpha (TNF-α) in affected tissues and peripheral blood.[1,4,8] The resulting eosinophilic infiltration and IgE overproduction suggest an underlying hypersensitivity mechanism, although no specific antigenic trigger has been identified to date. The molecular and cellular mechanisms involve activation of CD4+ T lymphocytes, which produce excess Th2 cytokines that drive eosinophil recruitment through IL-5, promote immunoglobulin class switching to IgE through IL-4 and IL-13, stimulate mast cell proliferation, and activate vascular endothelial cells. Renal involvement, manifesting as proteinuria, nephrotic syndrome, or various forms of glomerulonephritis, including membranous nephropathy, minimal change disease, mesangial proliferative glomerulonephritis, and focal segmental glomerulosclerosis, has been reported in 10% to 60% of KD patients, representing the most significant and potentially life-threatening systemic complication.[1]

Histopathological examination remains the gold standard for definitive diagnosis of KD, as no single clinical or laboratory test is pathognomonic. The characteristic features include reactive follicular hyperplasia with prominent germinal centers, dense eosinophilic infiltration with microabscess formation, proliferation of post-capillary venules with hobnail endothelium, progressive fibrosis, and the presence of Warthin-Finkeldey polykaryocytes (multinucleated giant cells formed by lymphoid cell fusion).[1,3] These findings must be carefully differentiated from several important mimickers, including angiolymphoid hyperplasia with eosinophilia (ALHE), Hodgkin lymphoma (particularly the mixed cellularity subtype), Castleman disease, Langerhans cell histiocytosis, and parasitic or tuberculous lymphadenitis.[1] ALHE, historically considered part of the same disease spectrum as KD, is now recognized as a distinct vascular neoplasm (epithelioid hemangioma) predominantly affecting middle-aged Caucasian women, characterized by superficial dermal involvement, proliferation of thick-walled blood vessels with plump endothelial cells, and typically without peripheral eosinophilia or elevated serum IgE levels.

Treatment strategies for KD include surgical excision, systemic corticosteroids, radiotherapy, cyclosporine A, and emerging biologic agents targeting the Th2 cytokine pathway, such as dupilumab (anti-IL-4 receptor alpha) and mepolizumab (anti-IL-5). A meta-analysis by Ye and colleagues, incorporating data from 22 studies involving 570 patients, demonstrated that surgical excision combined with postoperative radiotherapy provides superior local disease control compared to either modality alone, with recurrence rates of approximately 30.5% for surgery alone, 45% for corticosteroids, and 60% for radiotherapy. Cyclosporine A, which inhibits calcineurin and suppresses IL-2-mediated T-cell proliferation, has been reported as an effective steroid-sparing agent for recurrent KD, typically administered in combination with corticosteroids.[1] Mycophenolate

mofetil has also emerged as a potential maintenance therapy option.[9,10]

Despite its endemic nature in Asian populations, KD remains markedly underreported in Indonesia and other Southeast Asian nations. The scarcity of documented Indonesian cases contributes to limited clinical awareness among healthcare practitioners and potentially prolongs the diagnostic timeline, particularly in settings where tuberculosis is endemic and chronic lymphadenopathy is primarily investigated for mycobacterial infection. Herein, we report a rare case of retroauricular Kimura lymphadenitis in a 48-year-old Indonesian male from Bali who experienced a remarkable 10-year disease duration before definitive histopathological diagnosis was achieved. This case is notable for several distinctive features: the absence of renal involvement despite prolonged disease and elevated IgE, the characteristic histopathological findings including Warthin-Finkeldey giant cells, the geographic rarity of a documented Indonesian case from Bali, and the successful management with combined surgical excision and corticosteroid therapy. This report aims to enhance clinical awareness of KD in Indonesian medical practice and contribute meaningfully to the growing body of Southeast Asian case literature on this rare inflammatory condition.

2. Case Presentation

Table 1 presents the demographic and clinical characteristics of the patient. A 48-year-old Indonesian male presented to the outpatient clinic of the Department of Internal Medicine at Prof. Dr. I.G.N.G. Ngoerah General Hospital, Denpasar, Bali, with a chief complaint of a mass behind the right ear that had been present for approximately 10 years. The mass was initially small, approximately the size of a mung bean (Vigna radiata seed, approximately 3-5 mm), and had gradually enlarged over the years to approximately the size of a marble (approximately 15-20 mm). The patient described the mass as firm, rubbery in consistency, and painless to palpation. No erythema or warmth was observed overlying the lesion; however, intermittent pruritus localized to the area of the mass was occasionally noted by the patient. The patient denied any associated systemic symptoms, including persistent fever, night sweats, unintentional weight loss, chronic cough, hemoptysis, or easy fatigability. There was no history of similar masses in other body regions.

One month prior to the current presentation, the patient had undergone surgical excision of the retroauricular mass at Balimed Hospital, Denpasar. The excised specimen was submitted for histopathological examination, which subsequently revealed findings consistent with Kimura lymphadenitis. Following this histopathological diagnosis, the patient was referred to the Department of Internal Medicine at Prof. Dr. I.G.N.G. Ngoerah General Hospital for comprehensive evaluation of the underlying systemic condition and initiation of appropriate adjuvant medical management.

A thorough review of the patient's past medical history revealed no significant prior illnesses. There was no history of food allergies, atopic dermatitis, or other atopic conditions. The patient specifically denied any history of allergic rhinitis, bronchial asthma, or urticaria. No history of hypertension, diabetes mellitus, thyroid disease, or autoimmune conditions was elicited. The patient did not report any prior hospitalizations or surgical procedures other than the recent excision. No family history of similar conditions, malignancy, autoimmune diseases, or immunological disorders was identified. The patient did not use any regular medications prior to the current presentation.

On physical examination, the patient was alert and fully oriented with a Glasgow Coma Scale of 15 (E4V5M6). Vital signs were within normal limits as detailed in Table 1, with blood pressure of 120/69 mmHg, heart rate of 80 beats per minute with regular rhythm, respiratory rate of 20 breaths per minute, temperature of 36.5°C measured axillary, and peripheral oxygen saturation of 99% on room air. General appearance revealed a well-nourished male in no acute distress.

Table 1. Demographic and clinical characteristics of the patient.

Parameter	Finding
Age	48 years
Gender	Male
Ethnicity	Indonesian (Balinese)
Chief complaint	Right retroauricular mass, 10 years duration
Mass characteristics	Firm, rubbery, painless, gradually enlarging (mung bean to marble size), intermittent pruritus
Systemic symptoms	Absent (no fever, night sweats, weight loss, cough, or fatigue)
Past medical history	No significant history; no atopy, allergic rhinitis, asthma, hypertension, or diabetes mellitus
Previous intervention	Surgical excision at Balimed Hospital, Denpasar, 1 month prior to presentation; referred to Prof. Dr. I.G.N.G. Ngoerah General Hospital for further management
Blood pressure	120/69 mmHg
Heart rate	80 beats/minute, regular rhythm
Respiratory rate	20 breaths/minute
Temperature	36.5°C (axillary)
Oxygen saturation	99% on room air
Local examination*	Right retroauricular region: well-healed post-excision scar with hyperpigmentation, no active inflammation, no residual mass, no palpable lymphadenopathy

* Local examination (status lokalis) refers to the focused regional physical examination of the specific affected anatomical site, a standard component of the Indonesian medical examination format.

Head and neck examination showed no conjunctival pallor, no scleral icterus, and no palpable cervical, supraclavicular, or axillary lymphadenopathy bilaterally. Cardiopulmonary examination was unremarkable with normal heart sounds, no murmurs, and bilateral clear lung fields. Abdominal examination demonstrated normoactive bowel sounds with a soft, non-distended abdomen, without hepatosplenomegaly, tenderness, or palpable masses. Extremity examination revealed no peripheral edema, which was particularly relevant given the potential for renal involvement in KD. Focused regional examination (status lokalis) of the right retroauricular region revealed a well-healed post-excision surgical scar with post-inflammatory hyperpigmentation at the excision site, without active signs of inflammation, erythema, warmth, residual mass, or regional lymphadenopathy.

Laboratory findings are summarized in Table 2, which revealed several clinically significant abnormalities. Complete blood count demonstrated leukocytosis with a white blood cell (WBC) count of 13.82 × 10^3/μL, exceeding the upper normal limit of 11.0 × 10^3/μL. Differential count revealed peripheral eosinophilia with an eosinophil percentage of 8.60% (normal 1-6%) and an absolute eosinophil count of 1.19 × 10^3/μL (normal 0.02-0.50 × 10^3/μL), both significantly elevated above their respective normal ranges. The neutrophil count was 51.30% with an absolute count of 7.09 × 10^3/μL, both within normal

limits. Hemoglobin was 15.00 g/dL, hematocrit 47.40%, mean corpuscular volume (MCV) 83.90 fL, mean corpuscular hemoglobin (MCH) 26.50 pg, mean corpuscular hemoglobin concentration (MCHC) 31.60 g/dL, and platelet count 328.00 × 10^3/μL, all within the expected ranges. As shown in Table 2, the immunological workup revealed an elevated total serum IgE level of 168.16 KUI/L, exceeding the upper limit of normal (<100 KUI/L). Renal function tests were within normal limits with blood urea nitrogen (BUN) of 7.0 mg/dL, serum creatinine of 0.72 mg/dL, and estimated glomerular filtration rate (eGFR) of 110.31 mL/min/1.73m², indicating well-preserved renal function. Hepatic function was preserved with aspartate aminotransferase (AST/SGOT) of 23 U/L and alanine aminotransferase (ALT/SGPT) of 28 U/L. Complete urinalysis was unremarkable with clear appearance, specific gravity 1.022, pH 5.00, negative leukocyte esterase, negative proteinuria, urine sediment showing 1 leukocyte per high power field, and bacteria count of 4.60, all within normal parameters.

Table 2. Laboratory examination results with reference ranges.

Parameter	Result	Reference range	Interpretation
WBC	13.82 × 10^3/μL	4.0–11.0 × 10^3/μL	Abnormal ↑
Eosinophils (%)	8.60%	1–6%	Abnormal ↑
Absolute eosinophil count	1.19 × 10^3/μL	0.02–0.50 × 10^3/μL	Abnormal ↑
Neutrophils (%)	51.30%	40–70%	Normal
Absolute neutrophil count	7.09 × 10^3/μL	1.5–8.0 × 10^3/μL	Normal
Hemoglobin	15.00 g/dL	13.0–17.5 g/dL	Normal
Hematocrit	47.40%	40–54%	Normal
MCV	83.90 fL	80–100 fL	Normal
MCH	26.50 pg	27–31 pg	Normal
MCHC	31.60 g/dL	32–36 g/dL	Normal
Platelet count	328.00 × 10^3/μL	150–400 × 10^3/μL	Normal
BUN	7.0 mg/dL	7–20 mg/dL	Normal
Creatinine	0.72 mg/dL	0.7–1.3 mg/dL	Normal
eGFR	110.31 mL/min/1.73m²	>90 mL/min/1.73m²	Normal
AST/SGOT	23 U/L	5–40 U/L	Normal
ALT/SGPT	28 U/L	7–56 U/L	Normal
Total serum IgE	168.16 KUI/L	<100 KUI/L	Abnormal ↑
Urine protein	Negative	Negative	Normal
Urine specific gravity	1.022	1.005–1.030	Normal
Urine pH	5.00	4.5–8.0	Normal

* Abnormal values are highlighted in bold red. WBC = white blood cell; MCV = mean corpuscular volume; MCH = mean corpuscular hemoglobin; MCHC = mean corpuscular hemoglobin concentration; BUN = blood urea nitrogen; eGFR = estimated glomerular filtration rate; AST = aspartate aminotransferase; ALT = alanine aminotransferase; IgE = immunoglobulin E.

Chest radiography revealed cardiomegaly with a cardiothoracic ratio (CTR) of 60%, which was considered an incidental finding unrelated to the primary diagnosis of Kimura disease. This finding warrants separate cardiovascular evaluation and echocardiographic assessment as part of the patient's comprehensive health management, as cardiomegaly may represent underlying hypertensive heart disease, valvular pathology, or cardiomyopathy independent of the KD diagnosis. The pulmonary fields showed no apparent parenchymal abnormalities or pleural effusion. Suspicion of mild ascites was noted. Abdominal ultrasonography demonstrated diffuse fatty liver grade I without evidence of chronic liver disease, portal hypertension, or focal hepatic lesions.

The histopathological examination of the excised retroauricular specimen from Balimed Hospital constituted the definitive diagnostic investigation. Macroscopic examination revealed a single tissue specimen measuring 2.0 × 1.6 × 1.4 cm, whitish-brown in color, with a rubbery consistency. On cross-section, the cut surface appeared uniformly white. The specimen was partially processed in one tissue cassette for microscopic evaluation. Microscopic examination of the lymph node sections revealed cortex and medulla composed of lymphoid follicles, some of which demonstrated reactive changes with widened germinal centers, indicative of chronic antigenic stimulation (Figure 1). Several lymphoid follicles showed germinal center involution surrounded by expanded mantle zones. Notably, the paracortical regions contained multiple foci of microabscesses with dense eosinophilic inflammatory cell infiltration (Figure 2), a pathognomonic feature of KD. Additional findings included foci of fibrosis, prominent vascular hyalinization with thickened vessel walls in the paracortical areas, and the presence of multinucleated Warthin-Finkeldey giant cells, which are polykaryocytes formed by fusion of lymphoid cells and represent a highly characteristic histological hallmark of KD. The overall lymph node architecture was preserved without evidence of effacement, ruling out lymphoproliferative disorders. The histopathological diagnosis was confirmed as Kimura Lymphadenitis of the right retroauricular region.

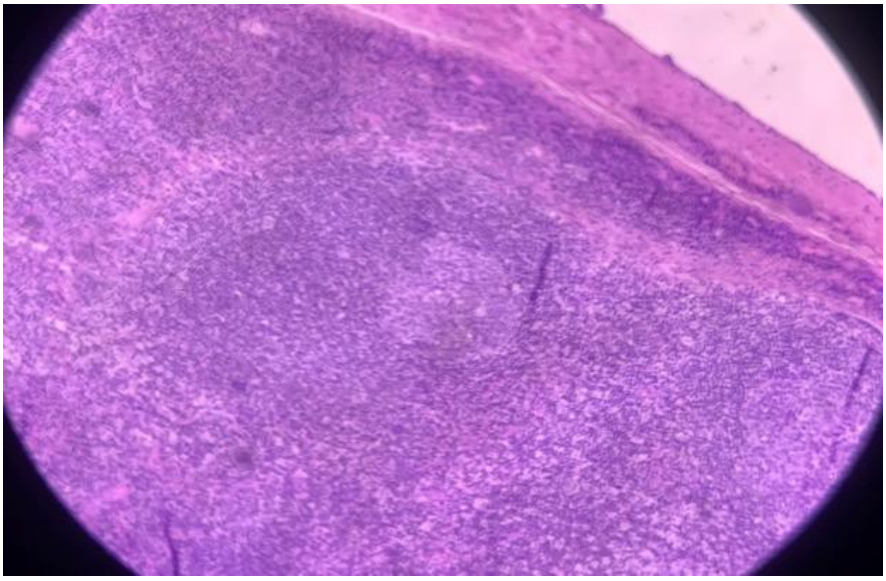

Figure 1. Histopathological examination of the excised retroauricular lymph node specimen shows cortex and medulla composed of lymphoid follicles with reactive germinal centers and surrounding lymphoid stroma. The overall nodal architecture is preserved (hematoxylin and eosin stain, low magnification).

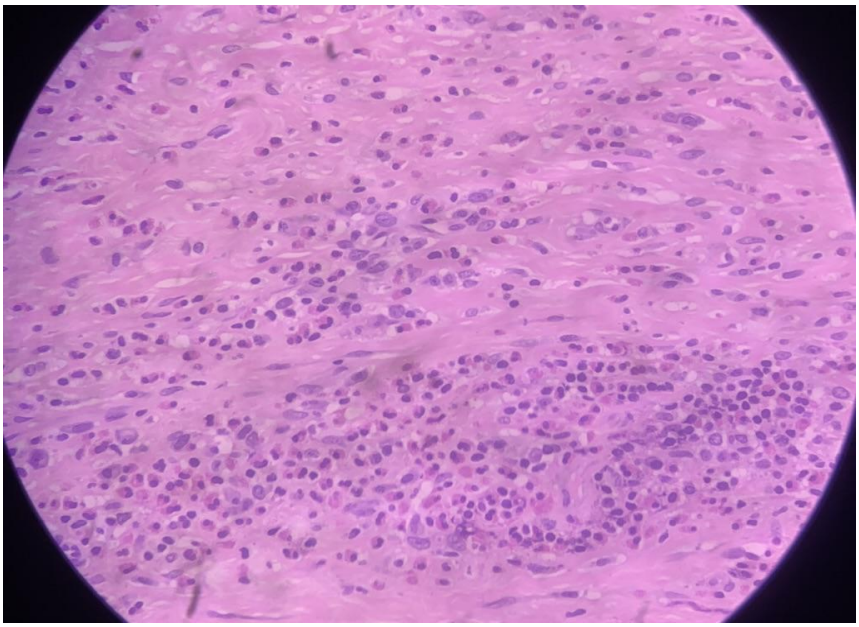

Figure 2. High-power microscopic view demonstrating dense eosinophilic inflammatory cell infiltration forming microabscesses within the lymph node parenchyma, a hallmark histopathological feature of Kimura disease (hematoxylin and eosin stain, high magnification).

Following the histopathological confirmation of Kimura lymphadenitis, the patient was initiated on adjuvant immunosuppressive therapy with oral methylprednisolone 8 mg once daily, administered each morning, with a planned gradual tapering schedule over several weeks to months, depending on clinical response. The corticosteroid therapy was administered in conjunction with the preceding surgical excision to reduce the risk of disease recurrence and prevent long-term complications, particularly the development of KD-associated nephritis. The combined surgical and medical approach was selected based on current evidence suggesting that multimodal therapy provides better disease control than either modality alone.[1,5] The patient was scheduled for regular follow-up monitoring including clinical assessment of the surgical site for any signs of local recurrence, serial complete blood count with differential to track eosinophil count trends as a surrogate marker of disease activity, periodic serum IgE level measurements, and regular renal function assessment including serum creatinine, eGFR, and urinalysis with protein quantification to detect any emerging nephropathy at the earliest possible stage.

3. Discussion

This report describes a rare case of histopathologically confirmed Kimura lymphadenitis involving the retroauricular region in a 48-year-old Indonesian male from Bali with a remarkably prolonged disease duration of 10 years prior to definitive diagnosis. Kimura disease is a chronic inflammatory condition of unknown etiology that primarily affects the subcutaneous tissues and lymph nodes of the head and neck region.[1,2] The retroauricular and periauricular regions represent the most commonly affected anatomical sites, consistent with the presentation observed in our patient. A prospective study of 18 pediatric KD cases by Viswanatha reported that the post-auricular region was the commonest site of involvement, accounting for 50% of cases, with recurrence rates of 6.6% following

surgical management compared to 66.6% with corticosteroid therapy alone.[6]

The epidemiological profile of our patient aligns with several established characteristics of KD while also presenting notable exceptions worthy of clinical discussion. KD demonstrates a strong male predominance with male-to-female ratios reported between 3:1 and 6:1, consistent with our male patient.[1,3] However, the typical age of onset for KD is between 20 and 40 years, whereas our patient was 48 years old at the time of presentation and diagnosis.[1,4] Importantly, the mass had been present for approximately 10 years, suggesting that the disease onset likely occurred around 38 years of age, which falls within the upper end of the typical age range. A clinicopathologic study of 21 cases conducted at the Armed Forces Institute of Pathology by Chen and colleagues reported a mean age of 32 years with a range from 8 to 64 years, indicating that KD can present across a wide age spectrum.[3] A recent case reported from Vietnam by Le and colleagues described a 31-year-old Vietnamese woman with bilateral cheek and postauricular masses persisting for 15 years, demonstrating that prolonged diagnostic delays represent a common challenge in Southeast Asian clinical settings, particularly when the disease affects unusual demographics such as females.[11,12]

The clinical presentation of our patient was characteristic of KD, featuring a painless, firm, gradually enlarging retroauricular mass with intermittent pruritus and complete absence of constitutional symptoms. The painless nature of the mass is consistent with the typical clinical behavior of KD, as most patients do not exhibit tenderness or pain at the lesion site.[1,2] The presence of pruritus, although not universally reported, has been described in association with KD and may reflect the underlying Th2-mediated hypersensitivity mechanism with local mast cell degranulation and histamine release within the subcutaneous tissues.[2,12] The absence of systemic symptoms such as fever, night sweats, and unintentional weight loss is also consistent with the benign inflammatory nature of KD. When such constitutional symptoms are present, clinicians should consider alternative or co-existing diagnoses including lymphoma, tuberculosis, or other infectious etiologies.[1,2]

The protracted clinical course spanning 10 years before definitive diagnosis underscores the diagnostic challenges posed by KD, particularly in regions where clinical awareness of this rare condition may be limited. In Southeast Asian countries and other tropical endemic regions where tuberculosis is highly prevalent, chronic cervical and retroauricular lymphadenopathy is often primarily investigated for mycobacterial infection through acid-fast bacilli smear, GeneXpert assay, and fine-needle aspiration cytology. This diagnostic approach, while appropriate for the most common causes of chronic lymphadenopathy in these regions, may result in delayed consideration of rarer conditions such as KD.[13] Paneru and colleagues reported an illustrative case from Nepal in which a 26-year-old male with KD was initially misdiagnosed and treated with antitubercular therapy for several months before the correct diagnosis was established through histopathological examination of a biopsied lymph node.[13-15] This diagnostic pitfall is particularly relevant in the Indonesian healthcare context, where tuberculosis remains one of the highest-burden diseases nationally.

The laboratory findings in our patient were consistent with the established diagnostic triad of KD, which includes peripheral eosinophilia, elevated serum IgE, and characteristic histopathological features.[1,4] The peripheral eosinophilia observed in our patient (8.60%, absolute count 1.19 × 10^3/μL) exceeded the normal range (1-6%, absolute 0.02-0.50 × 10^3/μL), although it did not reach the severe eosinophilia threshold (>20%) that has been associated with higher recurrence risk following surgical excision.[1] The elevated total serum IgE of 168.16 KUI/L, while above the normal threshold of 100 KUI/L, was substantially lower than the extreme elevations exceeding 10,000 IU/mL that have been correlated with more aggressive disease behavior,

higher likelihood of renal involvement, and greater requirement for adjuvant therapy following surgical excision.[1,4] The largest recent retrospective analysis by Zhu and colleagues, reviewing 53 KD cases, reported that 93% of patients demonstrated peripheral eosinophilia and 87% had elevated serum IgE levels, confirming the high sensitivity of these markers for KD diagnosis.[4] These findings suggest that our patient may have a relatively favorable prognostic profile despite the prolonged disease duration.

A particularly noteworthy and clinically significant feature of this case is the complete absence of renal involvement despite the extraordinarily prolonged 10-year disease duration. Published literature consistently reports renal complications in 10% to 60% of KD patients, with manifestations ranging from subclinical proteinuria to overt nephrotic syndrome and progressive renal failure requiring dialysis.[1,16-19] The spectrum of renal pathology associated with KD encompasses membranous nephropathy, minimal change disease, mesangial proliferative glomerulonephritis, IgA nephropathy, and focal segmental glomerulosclerosis (FSGS), all believed to be mediated by immune complex deposition or aberrant Th2 immune responses targeting the glomerular basement membrane.[16-18] Su and colleagues reported a case of KD complicated by membranoproliferative glomerulonephritis in a 42-year-old male with cervical lymphadenopathy, demonstrating that renal involvement can occur concurrently with relatively modest peripheral eosinophilia.[16] Yu and colleagues documented a more severe case with eosinophilic peritonitis, nephrotic syndrome, and FSGS requiring continuous ambulatory peritoneal dialysis.[17]

In our patient, urinalysis demonstrated no proteinuria, and renal function parameters remained well within normal limits (creatinine 0.72 mg/dL, eGFR 110.31 mL/min/1.73m^2). Several factors may contribute to the preserved renal function in this patient. First, the relatively moderate degree of eosinophilia (8.60%) and IgE elevation (168.16 KUI/L) compared to cases with renal involvement, where extremely high levels are more commonly observed, may result in lower circulating immune complex concentrations and reduced glomerular deposition. Second, individual variation in genetic susceptibility to immune complex-mediated renal injury may play a protective role. Third, the possibility exists that renal involvement in KD may develop preferentially in patients with specific immunological phenotypes or HLA associations that were absent in this patient. Fourth, the localized nature of the disease in this case, confined to the retroauricular region without disseminated lymphadenopathy, may have limited the systemic immune activation necessary to trigger renal pathology. Nevertheless, continuous renal monitoring with periodic urinalysis and serum creatinine assessment remains essential throughout the follow-up period, as nephropathy can develop insidiously at any point during the clinical course of KD.[19]

The immunopathogenesis of KD is centered on a dysregulated T-helper type 2 (Th2) immune response, which provides the mechanistic basis for the clinical and laboratory findings observed in our patient. The Th2 cytokine milieu, particularly IL-4, IL-5, and IL-13 produced by overactivated CD4+ T lymphocytes, drives multiple interconnected pathological processes.[1,4,8] IL-5 serves as the primary eosinophil survival and activation factor, promoting eosinophil differentiation in the bone marrow, mobilization into the peripheral circulation, and tissue recruitment through chemotactic gradients. This mechanism directly explains the peripheral eosinophilia observed in our patient. IL-4 and IL-13, through their shared signaling via the IL-4 receptor alpha subunit, promote immunoglobulin class switching from IgM/IgG to IgE in B lymphocytes, accounting for the elevated serum IgE levels. Additionally, these cytokines stimulate mast cell proliferation and activate vascular endothelial cells, contributing to the vascular proliferation observed histopathologically. The eosinophilic infiltration leads to progressive tissue damage through the release of cytotoxic granule proteins, including major basic protein, eosinophil-derived neurotoxin, eosinophil cationic protein, and

eosinophil peroxidase. The vascular hyalinization observed in our patient's histopathology represents the end-stage fibrotic remodeling that occurs following chronic eosinophilic inflammation and sustained vascular endothelial injury.[1,3]

Recent advances in understanding these immunological mechanisms have catalyzed the development and application of targeted biologic therapies for KD. Dupilumab, a fully human monoclonal antibody directed against the IL-4 receptor alpha subunit that simultaneously inhibits both IL-4 and IL-13 signaling, has demonstrated clinical efficacy in several case reports of KD, with significant reductions in mass size, eosinophil counts, and serum IgE levels.[8,20] Luo and colleagues reported successful treatment of KD with dupilumab in a patient who had experienced multiple recurrences following surgical excision, achieving sustained remission during the follow-up period.[8] Mepolizumab, an anti-IL-5 monoclonal antibody that targets the primary eosinophil survival factor, has shown promising results in three patients within a retrospective analysis of 53 KD cases by Zhu and colleagues.[4] Mycophenolate mofetil, a purine synthesis inhibitor that suppresses T and B lymphocyte proliferation, has been reported by Fenech and colleagues as a steroid-sparing maintenance agent for orbital KD, achieving disease stability without the adverse effects of chronic corticosteroid therapy.[22] Additionally, cyclosporine A, a calcineurin inhibitor that suppresses IL-2-mediated T-cell proliferation, has been reported to be effective for inducing re-remission in recurrent KD when combined with corticosteroids.[1] These therapeutic advances offer important options for patients with refractory, frequently recurrent, or steroid-dependent disease.

The histopathological findings in our case were prototypical of KD and merit detailed discussion, as histopathology constitutes the gold standard for definitive diagnosis.[1,3] The presence of reactive follicular hyperplasia with widened germinal centers reflects the chronic antigenic stimulation and sustained B-cell activation underlying the disease process. The dense eosinophilic microabscesses observed within the lymph node parenchyma are considered pathognomonic of KD and serve as one of the most reliable histological features distinguishing KD from its differential diagnoses.[3,14] The vascular hyalinization in the paracortical regions represents the characteristic vascular proliferation followed by progressive sclerosis and wall thickening. The identification of multinucleated Warthin-Finkeldey giant cells is a highly characteristic feature that strongly supports the diagnosis. These polykaryocytic giant cells, formed by fusion of multiple lymphoid cells to create a single multinucleated cell with up to 100 nuclei arranged in a wreath-like pattern, are also occasionally observed in measles infection, HIV-associated lymphadenopathy, and autoimmune lymphoproliferative syndromes, but their presence in the context of eosinophilic infiltration, follicular hyperplasia, and vascular changes is highly suggestive of KD.[1,3]

The differential diagnosis of KD is broad and clinically important, requiring careful histopathological differentiation. ALHE, the most important differential, is now recognized as a distinct vascular neoplasm (epithelioid hemangioma) characterized by proliferation of thick-walled blood vessels with plump, hobnail-shaped endothelial cells in the superficial dermis and subcutis.[21] Key histopathological features differentiating KD from ALHE include: KD demonstrates deep subcutaneous involvement with prominent follicular hyperplasia and eosinophilic microabscesses, whereas ALHE shows superficial dermal vascular proliferation with perivascular eosinophilic infiltration; KD characteristically features Warthin-Finkeldey giant cells, which are absent in ALHE; KD is consistently associated with peripheral eosinophilia and elevated IgE, while ALHE typically lacks these systemic findings; and KD demonstrates progressive fibrosis and vascular hyalinization, while ALHE shows characteristic thick-walled vessels with prominent endothelial cells.[21-25] Other differential diagnoses include Hodgkin lymphoma, particularly the mixed

cellularity subtype, which may demonstrate eosinophilia; Castleman disease with its characteristic onion-skin mantle zones and hyalinized vessels; tuberculosis lymphadenitis with caseating granulomatous inflammation; drug-induced lymphadenopathy; Langerhans cell histiocytosis; and parasitic lymphadenitis with eosinophilic infiltration.[1,13,25]

As demonstrated in Table 3, comparison of our case with previously reported cases reveals both similarities and notable differences. Our patient shares the typical male sex and Asian ethnicity with most reported cases, but differs in the older age at diagnosis and remarkably prolonged disease duration. The absence of renal involvement contrasts with several reported cases that developed nephrotic syndrome or glomerulonephritis, underscoring the variable clinical spectrum of KD across individual patients.[16-18]

Table 3. Comparison of the present case with selected cases reported in the literature.

Study (Year)	Age/Gender	Location	Duration	Eosinophilia	IgE elevated	Renal	Treatment
Present case	48/M	Retroauricular	10 years	Yes (8.6%)	Yes (168)	No	Excision + steroid
Anbessie (2024)	25/M	Cervical	NR	Yes	Yes	No	Excision + steroid
Le (2024)	31/F	Postauricular	15 years	Yes	Yes	No	Excision
Paneru (2023)	26/M	Head/neck	NR	Yes	Yes	No	Steroid
Su (2019)	42/M	Cervical	2 years	Yes	Yes	MPGN	Steroid
Yu (2020)	44/M	Inguinal	1 month	Yes	Yes	FSGS	Steroid + CAPD
Zhu (2025)	Various	Head/neck	Various	Yes (93%)	Yes (87%)	17%	Various

† NR = Not reported; MPGN = Membranoproliferative glomerulonephritis; FSGS = Focal segmental glomerulosclerosis; CAPD = Continuous ambulatory peritoneal dialysis; IgE values in KUI/L where reported.

The management of our patient with surgical excision followed by adjuvant corticosteroid therapy with methylprednisolone 8 mg daily and planned tapering is consistent with current evidence-based treatment recommendations for localized KD. Surgical excision serves as the primary therapeutic modality for localized disease, offering the dual advantages of immediate mass reduction and provision of tissue for definitive histopathological diagnosis.[1,5,6] However, the reported recurrence rate following surgery alone is approximately 30.5%, underscoring the importance of adjuvant therapy.[1,5] The meta-analysis by Ye and colleagues, incorporating data from 22 studies involving 570 patients, demonstrated that surgical excision combined with postoperative radiotherapy provided superior recurrence control compared to either modality alone (risk ratio 4.72 for surgery alone versus combined therapy; 95% confidence interval 2.53-8.82).[5] In our patient, corticosteroid therapy was selected as the adjuvant modality rather than radiotherapy, given the completely localized nature of the disease, the successful complete excision of the mass, and the patient's overall clinical stability. This decision is supported by the well-established efficacy of corticosteroids in controlling local disease activity, reducing lymphadenopathy, and preventing the development of KD-associated nephritis.[1]

The prognosis of KD is generally favorable, as the disease does not exhibit malignant transformation potential despite its chronic and recurrent nature.[1]

However, the overall recurrence rate of approximately 25% across all treatment modalities necessitates vigilant long-term clinical surveillance. Risk factors for recurrence identified in the literature include tumor diameter greater than or equal to 3 cm, disease duration exceeding 5 years, peripheral eosinophil percentage exceeding 20%, and serum IgE levels exceeding 10,000 IU/mL.[1,4] In our patient, the disease duration of 10 years clearly exceeds the 5-year threshold, conferring an increased theoretical recurrence risk. However, the eosinophil percentage of 8.60% and serum IgE of 168.16 KUI/L are both substantially below their respective risk thresholds of 20% and 10,000 IU/mL, providing a favorable counterbalance. The eosinophil count has been proposed as a predictive marker for treatment response and disease monitoring in KD, and serial monitoring of peripheral eosinophil trends may help guide clinical decisions regarding the duration and intensity of adjuvant corticosteroid therapy as well as the timing of potential dose reduction.[1,4]

4. Conclusion

This case report presents a rare instance of retroauricular Kimura lymphadenitis in a 48-year-old Indonesian male from Bali with a remarkable 10-year disease duration before definitive histopathological diagnosis. The case exemplifies the significant diagnostic challenges associated with Kimura disease in Southeast Asian clinical settings, where chronic lymphadenopathy is more commonly attributed to infectious etiologies such as tuberculosis, potentially leading to prolonged diagnostic delays. The diagnosis was definitively confirmed through characteristic histopathological findings, including reactive follicular hyperplasia with widened germinal centers, dense eosinophilic microabscesses, vascular hyalinization in the paracortical areas, and the presence of multinucleated Warthin-Finkeldey giant cells. Laboratory investigations revealed peripheral eosinophilia (8.60%, absolute 1.19 × 10^3/μL) and elevated serum IgE (168.16 KUI/L), consistent with the diagnostic triad of Kimura disease. Notably, renal function was completely preserved without proteinuria despite the prolonged disease duration, contrasting with the reported 10% to 60% incidence of renal involvement in KD and suggesting potential protective factors in this individual patient. Combined therapy with surgical excision and low-dose oral methylprednisolone with gradual tapering was administered to minimize recurrence risk and prevent the development of nephritis. This case contributes meaningfully to the limited body of Indonesian case literature on Kimura disease and underscores the critical importance of including this rare diagnosis in the differential evaluation of chronic head and neck masses, particularly in Asian patients presenting with peripheral eosinophilia and elevated IgE. Long-term follow-up with serial monitoring of eosinophil counts, serum IgE levels, and renal function parameters including urinalysis, is essential to detect potential disease recurrence or the insidious development of KD-associated nephropathy.

5. References

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