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Review Article

A Contemporary View on Kimura Disease

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Abstract

Kimura disease is a rare, chronic inflammatory disorder of unclear etiology, characterized by peripheral eosinophilia, elevated serum IgE levels, and the development of subcutaneous nodules, most commonly located in the head and neck region. This review aims to summarize the current understanding of the disease, including its etiology, pathogenesis, clinical presentation, histopathological features, and diagnostic criteria. Particular emphasis is placed on the differential diagnosis with angiolymphoid hyperplasia with eosinophilia, as well as other conditions associated with lymphadenopathy and eosinophilia. Contemporary therapeutic approaches are also discussed, including surgical management, corticosteroid therapy, immunosuppressive agents, and alternative treatment modalities. Awareness of the clinical and histopathological features of Kimura disease is essential for accurate diagnosis and appropriate therapeutic decision-making.

Keywords

Kimura Disease, Eosinophilia, Angiolymphoid Hyperplasia with Eosinophilia, Subcutaneous Nodules, Differential Diagnosis, Therapy

1. Introduction

Kimura disease is a rare, chronic inflammatory disorder of unknown etiology, characterized by peripheral eosinophilia, elevated serum immunoglobulin E (IgE) levels, and the development of subcutaneous nodules. The disease most commonly affects the subcutaneous tissues, salivary glands, and lymph nodes in the head and neck region, although other anatomical sites may also be involved [1-4]. Histopathological findings typically include lymphoid hyperplasia with prominent germinal center formation, marked eosinophilic infiltration, as well as vascular proliferation and varying degrees of fibrosis [3].

The condition was first described in 1937 by H. T. Kimm and C. Szeto under the term *eosinophilic hyperplastic lymphogranuloma* [5]. In 1948, T. Kimura et al. reported a series of cases detailing the characteristic histopathological features, which led to the introduction of the term “Kimura

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disease" [6]. Initially, the disease was considered in association with angiolymphoid hyperplasia with eosinophilia (ALHE); however, these entities were subsequently recognized as distinct nosological conditions [3, 7].

Kimura disease is currently regarded as an immune-mediated disorder and is classified among eosinophilic inflammatory and lymphoproliferative conditions [2, 4]. The presence of peripheral eosinophilia, elevated IgE levels, and increased production of Th2-associated cytokines (interleukin [IL] -4, IL-5, and IL-13) supports a central role of a Th2-mediated immune response in its pathogenesis [4]. In a subset of patients, systemic manifestations such as nephrotic syndrome and glomerulopathies have been reported, underscoring the potential systemic nature of the disease [8].

Kimura disease is of particular relevance in dermatological practice, as its clinical presentation may mimic neoplastic or infectious processes, including lymphomas, metastatic disease, and other inflammatory conditions [4, 7]. Recognition of its characteristic clinical, laboratory, and histopathological features is essential for accurate diagnosis and appropriate management. From an immunological perspective, the disease represents a model of chronic eosinophilic inflammation and Th2-driven immune response, which explains the growing scientific interest in this entity [1, 2].

2. Epidemiology

2.1. Geographic Distribution

Kimura disease is a rare chronic inflammatory disorder predominantly reported in East and Southeast Asian countries, including China, Japan, and Korea. The majority of documented cases originate from these regions, suggesting a distinct geographic and ethnic predilection [3, 4].

Nevertheless, the disease is not limited to Asian populations, as sporadic cases have been described in Europe, North America, and the Middle East [9]. Available data indicate that, although considerably less common, the condition may occur across all racial groups [10].

2.2. Age Distribution

Kimura disease most commonly affects young individuals, with a peak incidence during the second and third decades of life. The mean age of affected patients ranges approximately between 28 and 36 years [9, 10]. Across different clinical series, the reported age range varies from approximately 5 to 65 years [11, 12].

2.3. Sex Predilection

Kimura disease demonstrates a marked male predominance. Most published series report a male-to-female ratio ranging from approximately 3.5: 1 to 9: 1 [7, 9]. In some analyses, particularly among younger patients, this ratio may reach as high as 17: 1 in individuals under 20 years of age [11]. The reasons for this pronounced sex disparity remain unclear; however, hormonal, genetic, and immunological factors have been proposed [12].

2.4. Disease Frequency

Kimura disease is an exceptionally rare condition, and its precise incidence and prevalence remain uncertain due to limited epidemiological data and the predominance of case reports and small clinical series [3].

The clustering of cases in Asian populations suggests a degree of regional endemicity, whereas in Europe and North America the disease is observed mainly in a sporadic pattern [1, 3]. Clinical observations indicate that Kimura disease predominantly affects young Asian males and most commonly presents with subcutaneous masses in the head and neck region, accompanied by peripheral eosinophilia and elevated serum IgE levels. Cervical lymph node involvement is frequent, and a subset of patients exhibits associated atopic conditions or renal involvement, most often in the form of nephrotic syndrome.

3. Etiology and Pathogenesis

3.1. Etiology

Kimura disease remains a disorder of unknown etiology and is considered a chronic inflammatory condition characterized by peripheral eosinophilia, elevated serum IgE levels, and lymphoid hyperplasia. Current evidence suggests the involvement of complex immunological mechanisms associated with a dysregulated, hyperreactive immune response to various antigenic stimuli [3, 13].

3.1.1. Allergic Reactions

One of the leading hypotheses proposes that the disease represents a form of chronic allergic reaction. The presence of marked eosinophilia, significantly elevated IgE levels, and frequent association with atopic conditions (such as atopic dermatitis, allergic rhinitis, and asthma) strongly supports this concept [14].

3.1.2. Parasitic Infections

A potential role of chronic antigenic stimulation by parasitic infections, particularly helminths, has also been suggested. This hypothesis is based on the characteristic eosinophilic and IgE-mediated immune response; however, a direct causal relationship has not been conclusively established [15, 16].

3.1.3. Autoimmune Mechanisms

The involvement of autoimmune processes has also been considered, given the presence of lymphoid hyperplasia and

germinal center formation. Nevertheless, evidence supporting a classical autoimmune mechanism remains limited [13].

Available data indicate a predominance of a Th2-type immune response, leading to B-cell activation, increased IgE production, and recruitment of eosinophils into affected tissues [17]. Key cytokines implicated in this process include interleukin (IL)-4, IL-5, and IL-13. IL-4 promotes immunoglobulin class switching toward IgE synthesis; IL-5 stimulates eosinophil differentiation, activation, and survival; and IL-13 contributes to the maintenance of chronic inflammation and IgE-mediated responses [18]. Increased expression of these cytokines has been demonstrated both in serum and within lesional tissues in affected patients [6].

Elevated IgE levels further contribute to the activation of mast cells and basophils, thereby sustaining chronic inflammation and eosinophilic infiltration [14].

Table 1. *Immunological Profile in Kimura Disease (Th2-Type Response).*

Factor	Biological Function	Role in Disease
Th2 lymphocytes	Regulation of humoral and allergic immune response	Dominant immunological mechanism
IL-4	Induces IgE synthesis	Elevated serum levels
IL-5	Stimulates eosinophil proliferation and activation	Peripheral eosinophilia
IL-13	Maintains allergic inflammation	Enhanced IgE production
IgE	Mediator of allergic immunity	Markedly elevated levels
Eosinophils	Release cytotoxic mediators	Key cellular component
Eosinophil mediators (MBP, ECP, EPO)	Tissue damage and inflammation	Sustain chronic inflammatory process

3.2. Pathogenesis

3.2.1. Role of Eosinophils

Eosinophils play a central role in the pathogenesis of Kimura disease. They accumulate in affected tissues and release cytotoxic granule proteins, including major basic protein (MBP), eosinophil cationic protein (ECP), and eosinophil peroxidase (EPO). These mediators induce tissue damage, sustain the inflammatory process, and contribute to vascular remodeling [19].

3.2.2. Cytokine Profile and Chronic Inflammation

Increased expression of Th2-associated cytokines sustains the chronic inflammatory response, promotes lymphoid hyperplasia, and facilitates eosinophilic infiltration within affected tissues [17, 18].

3.2.3. Vascular Changes

A characteristic feature of Kimura disease is pronounced vascular proliferation with increased numbers of small blood vessels, likely mediated by angiogenic factors such as vascular endothelial growth factor (VEGF), which are upregulated under conditions of chronic inflammation [3].

Overall, Kimura disease is most likely the result of immunological hyperreactivity to an as yet unidentified antigen, leading to a Th2-mediated inflammatory response. This process involves B-cell activation, increased IgE production, enhanced eosinophil chemotaxis, and the formation of lymphoid follicles within affected tissues [3, 13].

4. Clinical Presentation

Kimura disease is a chronic inflammatory condition characterized by subcutaneous tumor-like lesions, lymphadenopathy, and potential systemic manifestations, most commonly involving the kidneys. The clinical course is typically indolent and benign, but often follows a chronic relapsing pattern [3, 13].

4.1. Dermatological Features

The most characteristic clinical finding is the presence of painless, slowly enlarging subcutaneous nodules. These lesions are usually well circumscribed, have an elastic consistency, and may be solitary or multiple. The overlying skin is typically unremarkable, although mild erythema or hyperpigmentation may occasionally be observed [14].

Lesion size ranges from a few millimeters to several centimeters, and in some cases, lesions may extend into adjacent structures, including salivary glands and lymph nodes [3].

In approximately 70–90% of cases, lesions are localized to the head and neck region. The most commonly affected sites include the parotid and submandibular regions, the retroauricular area, the scalp, and the periorbital region. Less frequently, involvement of the axillary and inguinal regions, as well as the

extremities, has been reported [3, 20].

Salivary gland involvement is common, particularly affecting the parotid gland. Clinically, this presents as unilateral or bilateral enlargement, which may mimic a neoplastic process or chronic sialadenitis [4, 15]. Parotid involvement is often associated with subcutaneous nodules and regional lymphadenopathy and may, in some cases, represent the initial manifestation of the disease [16].

Regional lymphadenopathy is a prominent feature and typically accompanies the subcutaneous lesions. The affected lymph nodes are enlarged, painless, mobile, and have a soft to elastic consistency. Cervical and submandibular lymph nodes are most frequently involved [14]. Histologically, reactive lymphoid hyperplasia with well-formed germinal centers and marked eosinophilic infiltration is observed [17].

4.2. Systemic Manifestations

Renal Involvement

Renal involvement represents one of the most significant systemic manifestations of Kimura disease and is reported in approximately 10–60% of patients. The most common clinical presentation is nephrotic syndrome, characterized by massive proteinuria, hypoalbuminemia, peripheral edema, and hyperlipidemia [21].

Table 2. *Clinical Characteristics of Kimura Disease.*

Clinical Aspect	Characteristics
Overall course	Chronic, slowly progressive, frequently relapsing
Subcutaneous lesions	Painless, well-circumscribed nodules with elastic consistency; solitary or multiple
Overlying skin	Usually normal; occasional mild erythema or hyperpigmentation
Lesion size	From a few millimeters to several centimeters
Localization	Predominantly head and neck (≈70–90%); less commonly axillary and inguinal regions and extremities
Salivary gland involvement	Common, especially parotid gland; unilateral or bilateral enlargement
Lymphadenopathy	Frequent; cervical and submandibular lymph nodes; painless and mobile
Systemic manifestations	Most commonly renal involvement
Nephrotic syndrome	Proteinuria, hypoalbuminemia, peripheral edema, hyperlipidemia
Glomerulopathies	Membranous, mesangioproliferative, minimal change disease, focal segmental glomerulosclerosis
Laboratory findings	Peripheral eosinophilia, elevated serum IgE levels
Associated conditions	Atopic diseases (asthma, allergic rhinitis, atopic dermatitis)

Renal manifestations may precede, accompany, or follow the onset of cutaneous lesions. Histopathological findings on renal biopsy are heterogeneous and may include various forms of glomerular disease, such as membranous glomerulonephropathy, mesangioproliferative glomerulonephritis, minimal change disease, and focal segmental glomerulosclerosis [22].

Renal involvement is thought to result from immune complex-mediated mechanisms associated with elevated IgE levels and a Th2-driven immune response [13].

5. Diagnostic Evaluation

5.1. Laboratory Findings

Kimura disease is strongly supported by laboratory investigations reflecting its underlying immunological nature. The most characteristic findings include peripheral eosinophilia, elevated serum IgE levels, and, in some cases, laboratory evidence of renal involvement [3, 13].

Marked peripheral eosinophilia is one of the most consistent features, observed in approximately 80–90% of patients. Eosinophil counts often exceed 20–30% of the total leukocyte count [14]. This finding reflects a Th2-mediated immune response and contributes to disease pathogenesis through the release of cytokines and cytotoxic mediators [17].

Serum IgE levels are significantly elevated in most patients and may reach several thousand IU/mL [13]. This supports the role of allergic and hypersensitivity mechanisms and correlates with both eosinophilia and the Th2 cytokine profile [13, 14, 17].

In a subset of patients, laboratory findings consistent with nephrotic syndrome may be present, including proteinuria, hypoalbuminemia, and hyperlipidemia [22].

5.2. Imaging Studies

Imaging modalities are valuable for assessing the local extent of lesions and differentiating Kimura disease from neoplastic processes.

Ultrasound, often used as an initial diagnostic tool, typically demonstrates hypoechoic or heterogeneous subcutaneous lesions, enlarged lymph nodes, and salivary gland involvement. Doppler studies frequently reveal increased vascularization [23].

Computed tomography (CT) provides detailed anatomical evaluation, with lesions appearing as well-defined soft tissue masses demonstrating moderate contrast enhancement, often associated with lymphadenopathy [24].

Magnetic resonance imaging (MRI) is particularly useful for evaluating soft tissue structures in the head and neck region. Typical findings include iso- to hypointense signals on T1-weighted images, hyperintensity on T2-weighted images, and contrast enhancement following gadolinium administration [25].

5.3. Histopathological Examination

Histopathological evaluation remains the gold standard for diagnosis. A characteristic combination of lymphoid hyperplasia, marked eosinophilic infiltration, and vascular changes is observed [14, 20].

The typical histopathological spectrum includes [3, 17, 20, 26]:

1) Lymphoid follicles with well-developed germinal centers
2) Prominent eosinophilic infiltration
3) Proliferation of postcapillary venules
4) Interstitial and perivascular fibrosis
5) Eosinophilic microabscesses (in a subset of cases)

Table 3. *Histopathological Criteria in Kimura Disease.*

Histological Component	Characteristic Findings	Diagnostic Significance
Lymphoid hyperplasia	Numerous follicles with germinal centers	Key diagnostic feature
Eosinophilic infiltration	Diffuse or perifollicular	Associated with Th2 response
Eosinophilic microabscesses	Focal eosinophil aggregates	Highly characteristic
Vascular changes	Proliferation of postcapillary venules	Less prominent than in ALHE
Fibrosis	Perivascular/interstitial	Indicates chronic stage
IgE deposits	In germinal centers	Supports allergic pathogenesis
Lymphocytic infiltration	Mixed T- and B-cell population	Reactive nature

Immunohistochemical studies assist in the differential diagnosis and confirm the reactive nature of the infiltrate. CD3 highlights T-lymphocytes, predominantly located in interstitial areas, while CD20 marks B-lymphocytes within germinal centers [20]. IgE deposits are detected within germinal centers and on mast cells, further supporting an IgE-mediated mechanism [1, 14].

6. Diagnosis

The diagnosis of Kimura disease is based on the integration of clinical, laboratory, and imaging findings, with definitive confirmation established through histopathological examination of biopsy material. Owing to its nonspecific clinical presentation and its resemblance to neoplastic and other inflammatory conditions, a systematic and stepwise diagnostic approach is required.

Clinical suspicion should be raised in the presence of painless subcutaneous lesions in the head and neck region, particularly when accompanied by lymphadenopathy. Laboratory findings, including peripheral eosinophilia and markedly elevated serum IgE levels, provide important supportive evidence.

Imaging studies are useful for assessing the extent of local involvement; however, they lack specificity. Histopathological examination remains the gold standard, demonstrating the characteristic morphological features of the disease.

Given the relatively frequent association with renal involvement, routine evaluation of renal function and screening for nephrotic syndrome are recommended.

The diagnosis of Kimura disease relies on a combination of clinical, laboratory, and histopathological findings. The principal diagnostic features include:

1) Subcutaneous nodules in the head and neck region
2) Involvement of salivary glands and regional lymph nodes
3) Marked peripheral eosinophilia
4) Significantly elevated serum IgE levels
5) Characteristic histopathological findings, including lymphoid follicles with well-developed germinal centers, dense eosinophilic infiltration, and fibrotic changes

7. Differential Diagnosis

The differential diagnosis of Kimura disease includes a range of inflammatory, lymphoproliferative, and immunological disorders that may present with subcutaneous nodular lesions in the head and neck region, lymphadenopathy, and eosinophilia. Owing to the overlap in clinical and laboratory findings, accurate diagnosis requires careful clinicopathological correlation [3, 13]. The most important conditions to consider include angiolymphoid hyperplasia with eosinophilia (ALHE), lymphomas, and IgG4-related disease.

7.1. Angiolymphoid Hyperplasia with Eosinophilia (ALHE)

Angiolymphoid hyperplasia with eosinophilia represents the closest entity in the differential diagnosis. Although historically grouped together, these conditions are now recognized as distinct nosological entities. ALHE is a benign vascular proliferation characterized by epithelioid endothelial cells and prominent vascularization, whereas Kimura disease is dominated by lymphoid hyperplasia and eosinophilic infiltration. Systemic manifestations, including eosinophilia and elevated IgE levels, are significantly more common in Kimura disease [3, 14].

Table 4. *Comparison Between Kimura Disease and ALHE.*

Feature	Kimura Disease	ALHE
Nosological nature	Chronic inflammatory, immune-mediated	Benign vascular proliferation
Epidemiology	Predominantly young males, East Asia	More common in females
Localization	Deep subcutaneous lesions (head and neck)	Dermal papules/nodules (scalp, ears)
Lymphadenopathy	Common	Rare
Eosinophilia	Marked	Mild or absent
IgE levels	Significantly elevated	Usually normal
Histology	Lymphoid follicles, eosinophils	Vascular proliferation with epithelioid endothelial cells
Systemic manifestations	Possible (e.g., nephrotic syndrome)	Absent

7.2. Hodgkin Lymphoma

Hodgkin lymphoma should be excluded in patients presenting with lymphadenopathy and systemic symptoms. Eosinophilia may be misleading in this context. The diagnosis is established by identifying Reed–Sternberg cells and a characteristic immunohistochemical profile (CD15, CD30) [27].

7.3. T-cell Lymphomas

Peripheral T-cell lymphomas may mimic Kimura disease, particularly in cases with cutaneous or subcutaneous infiltrates. In contrast, they are characterized by monoclonal T-cell proliferation, demonstrable by immunohistochemistry and molecular techniques [28].

7.4. IgG4-related Disease

IgG4-related disease is a chronic fibroinflammatory condition that may involve salivary glands and soft tissues. Characteristic features include IgG4-positive plasma cell infiltration, storiform fibrosis, and obliterative phlebitis—findings that are absent in Kimura disease [29].

Table 5. *Differential Diagnosis of Kimura Disease.*

Disease	Clinical Features	Laboratory Findings	Histopathology
Kimura disease	Subcutaneous nodules, head and neck, lymphadenopathy	Eosinophilia, elevated IgE	Lymphoid hyperplasia, eosinophils, microabscesses
ALHE	Dermal papules/nodules	Usually no significant eosinophilia	Vascular proliferation, epithelioid endothelial cells

Disease	Clinical Features	Laboratory Findings	Histopathology
Hodgkin lymphoma	Lymphadenopathy, B symptoms	Possible eosinophilia	Reed–Sternberg cells
T-cell lymphoma	Cutaneous plaques/tumors	Atypical lymphocytes	Monoclonal T-cell infiltration
IgG4-related disease	Mass-forming lesions, salivary glands	Elevated IgG4	Plasma cells, storiform fibrosis

In summary, Kimura disease is characterized by a combination of lymphoid hyperplasia, marked eosinophilic infiltration, and elevated serum IgE levels, which enables its distinction from other lymphoproliferative and vascular disorders when appropriate clinicopathological correlation is applied.

8. Treatment

The therapeutic approach to Kimura disease is individualized and depends on lesion size and location, the presence of systemic manifestations, and the risk of recurrence. In clinical practice, a combined approach incorporating both surgical and medical treatment is most commonly employed. Despite this, recurrence rates remain high (25–60%), likely due to the infiltrative nature of the inflammatory process and the persistence of microscopic residual disease [3].

8.1. Surgical Treatment

Surgical excision represents a primary therapeutic modality, particularly for well-circumscribed subcutaneous lesions. It provides both definitive diagnosis and therapeutic removal. However, recurrence following surgery is common.

8.2. Medical Treatment

In patients with multifocal or extensive disease, surgery is often combined with systemic therapy, most commonly corticosteroids or immunosuppressive agents [20].

Systemic corticosteroids are widely used and typically result in rapid reduction of lesion size, eosinophilia, and serum IgE levels [13]. Prednisone is commonly administered at a dose of 0.5–1 mg/kg/day, followed by gradual tapering; however, relapse after discontinuation remains a major limitation.

Cyclosporine is used in recurrent or steroid-dependent cases. By inhibiting T-cell activation and cytokine production, it reduces inflammation and contributes to disease control [13].

Antihistamines play an adjunctive role, particularly in patients with pruritus and elevated IgE levels. While they improve symptoms, their effect on lesion size is limited [13].

Advances in understanding the Th2-mediated pathogenesis have led to the introduction of targeted therapies. Omalizumab has demonstrated favorable outcomes in selected cases by reducing free IgE levels and suppressing allergic inflammation [30, 31]. Therapies targeting interleukin-5 (IL-5), such as mepolizumab and benralizumab, have shown reduction of eosinophilia and clinical improvement in refractory cases [32].

8.3. Radiotherapy

Radiotherapy is an option for recurrent or unresectable lesions. Doses in the range of 20–30 Gy have been associated with good local control and reduction in lesion size [33, 34]. This modality is particularly useful for lesions in anatomically challenging locations (e.g., the parotid region), although it should be applied with caution due to potential long-term adverse effects.

Table 6. *Therapeutic Options in Kimura Disease.*

Therapy	Main Indications	Advantages	Limitations
Surgical excision	Localized lesions	Diagnostic and therapeutic	Frequent recurrences
Systemic corticosteroids	Active/recurrent disease	Rapid effect	Relapse after discontinuation
Immunosuppressants (cyclosporine, azathioprine)	Recurrent/severe cases	Inflammation control	Potential toxicity
Antihistamines	Symptomatic control	Good tolerability	Limited efficacy
Radiotherapy	Unresectable/recurrent lesions	Local control	Radiation-related risks
Biologic agents	Refractory cases	Targeted mechanism	Limited clinical data

9. Prognosis

The prognosis of Kimura disease is generally favorable in terms of survival, as the condition is benign and not associated with malignant transformation. However, the clinical course is typically chronic and relapsing, necessitating long-term follow-up [3].

The disease most often follows a relapsing–remitting course, with alternating periods of remission and exacerbation. In the majority of cases, progression is slow and remains confined to the skin, subcutaneous tissues, and regional lymph nodes. Systemic symptoms are uncommon, and the overall clinical condition of affected individuals is usually well preserved. Nevertheless, the recurrent nature of the disease frequently necessitates repeated therapeutic interventions [20]. No cases of malignant transformation have been reported [34].

Renal involvement represents the most significant systemic complication and occurs in approximately 10–60% of patients [33, 35]. The most common clinical manifestation is nephrotic syndrome. Renal abnormalities may precede, accompany, or follow the onset of cutaneous lesions, and effective control of the underlying disease is often associated with improvement in renal function.

Recurrence is a hallmark feature of Kimura disease and may occur months or even years after initial treatment, particularly in patients managed with surgery alone. Reported recurrence rates range from 25% to 60%, most commonly affecting the same anatomical region. An increased risk of recurrence has been observed in patients with multifocal or deeply located lesions, as well as in those with marked eosinophilia and elevated serum IgE levels [13].

Combined therapeutic approaches may reduce recurrence rates; however, they do not eliminate the risk entirely.

10. Future Therapeutic Perspectives

Advances in the understanding of the immunological mechanisms underlying Kimura disease have created new opportunities for the development of targeted and personalized therapeutic strategies.

Conventional approaches—including surgical excision, corticosteroids, and immunosuppressive agents—provide effective but often temporary disease control and do not prevent recurrences, thereby shifting focus toward novel immunomodulatory therapies.

The Th2 cytokine profile (IL-4, IL-5, IL-13) provides a strong rationale for the use of targeted biologic agents. Dupilumab, which inhibits IL-4 and IL-13 signaling, is well established in other Th2-mediated diseases and is currently being explored as a potential therapeutic option in Kimura disease [13].

Janus kinase (JAK) inhibitors represent another emerging therapeutic strategy through modulation of cytokine signaling pathways; however, data regarding their efficacy in Kimura disease remain limited [36].

A personalized approach is increasingly recognized as a key future direction in disease management [37, 38]. Individual immunological profiling—including eosinophil counts, serum IgE levels, and cytokine signatures—may help guide therapeutic decision-making.

The identification of reliable biomarkers could enable prediction of treatment response and risk of recurrence, thereby facilitating the development of more effective, targeted therapeutic strategies. Integration of clinical, immunological, and molecular data holds significant potential to improve long-term disease control and reduce recurrence rates.

11. Conclusion

Kimura disease is a rare chronic inflammatory disorder with a complex immunological pathogenesis, characterized by subcutaneous tumor-like lesions, lymphadenopathy, marked peripheral eosinophilia, and significantly elevated serum IgE levels.

Despite its benign nature and lack of malignant potential, the disease follows a chronic relapsing course and may lead to substantial morbidity, necessitating long-term follow-up [3, 13].

The differential diagnosis requires careful distinction from other conditions, particularly angiolymphoid hyperplasia with eosinophilia, as well as lymphoproliferative disorders such as Hodgkin lymphoma and peripheral T-cell lymphoma [20].

Given its multisystem involvement and potential extracutaneous complications—especially renal manifestations—both diagnosis and management require a multidisciplinary approach. Optimal care involves close collaboration among dermatologists, pathologists, immunologists, nephrologists, and radiologists [36, 37].

This integrated approach facilitates early diagnosis, appropriate therapeutic selection, and timely detection of systemic complications, including nephrotic syndrome [13, 38].

Despite advances in current knowledge, several aspects of the disease remain incompletely understood. Future research should focus on further elucidating Th2-mediated immunological mechanisms, identifying reliable biomarkers for early diagnosis and prediction of recurrence, and evaluating the efficacy of targeted biologic therapies directed against IgE and eosinophil-associated cytokine pathways.

Particular emphasis should be placed on the development of personalized therapeutic strategies based on individual immunological profiles [14, 36].

Abbreviations

ALHE	Angiolymphoid Hyperplasia with Eosinophilia
IgE	Immunoglobulin E
IL	Interleukin

Th2	T-helper Type 2
MBP	Major Basic Protein
ECP	Eosinophil Cationic Protein
EPO	Eosinophil Peroxidase
VEGF	Vascular Endothelial Growth Factor
FSGS	Focal Segmental Glomerulosclerosis
CT	Computed Tomography
MRI	Magnetic Resonance Imaging
JAK	Janus Kinase

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Conflicts of Interest

The authors declare no conflicts of interest.

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