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Commentary

The Omphalic Parallelogram-Median Rhomboid Glossitis

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Preface

Median rhomboid glossitis is denominated as central papillary atrophy of the tongue. The condition demonstrates a midline, rhomboid-shaped, flattened, erythematous zone of stratified squamous epithelium devoid of filiform papillae which is situated anterior to circumvallate papillae.

The benign, asymptomatic glossitis may appear upon dorsum of the tongue and may not require treatment although disease awareness may be advantageous. Symptomatic subjects can be treated with anti-inflammatory or pain-relieving mouthwash. A comprehensive history and physical examination is significant in evaluation of glossitis.

Chronic, unaltered tongue lesions require appropriate tissue sampling in order to exclude malignant metamorphosis.

Disease characteristics

Typically, median rhomboid glossitis is situated around midline of dorsum of tongue anterior to circumvallate papillae [1,2].

Median rhomboid glossitis concomitant with erythema and inflammation of corresponding zone of the palate is designated as "kissing lesion". Commonly, kissing lesion emerges in immunosuppressed individuals or subjects depicting full blown autoimmune deficiency syndrome (AIDS) [1,2].

Superinfection of kissing lesion with *Candida* spp may ensue on account of extensive contact between *Candida* infected midline dorsum of the tongue and hard palate [2,3].

Of obscure aetiology, predisposing factors such as smoking, dentures, diabetes mellitus or fungal infection with *Candida* spp contribute to emergence of median rhomboid glossitis. Also, impaired vascular perfusion of mid dorsal surface of the tongue predisposes to emergence of Candidiasis with consequent decimation of filiform papillae [2,3].

Median rhomboid glossitis was initially posited to be a developmental lesion although currently it is categorized as a variant of Candidiasis. Inflamed, beefy red tongue observed in median rhomboid glossitis may be associated with diverse nutritional deficiencies such as pernicious anaemia or deficiency of vitamin B12, riboflavin, niacin or pyridoxine, sprue and iron deficiency anaemia [2,3].

Besides, jagged teeth, ill fitting dentures, syphilis, burns or ingestion of corrosive substances may engender the condition [2,3].

Superinfection with *Candida* spp is observed in a majority (90%) instances of median rhomboid glossitis and kissing lesions [2,3].

Concurrence of tobacco smoking with diabetes mellitus enhances co-infection with *Candida* spp in subjects with median rhomboid glossitis. Prevalence of median rhomboid glossitis is significantly elevated in individuals with immunosuppression, diabetes mellitus and ingestion of broad spectrum antibiotics [2,3].

Denture stomatitis may or may not appear concurrent to emergence of median rhomboid glossitis. Also, tobacco smoking and dentures significantly enhances the prevalence of localized median rhomboid glossitis [2,3].

Fungal hyphae of *Candida albicans* appear accumulated within the keratinous, stratified squamous epithelial layer of median rhomboid glossitis. Additionally, diverse *Candida* spp as *C. kefyr, C. tropicalis, C. krusei or C. glabrata* may be extricated from lesions of median rhomboid glossitis along with normal oral microbial flora as *Streptococcus spp, Corynebacterium spp or Neisseria spp* [2,3].

Median rhomboid glossitis is posited to arise as a congenital lesion due to the persistence of tuberculum impar anterior to foramen cecum. Alternatively, it may emerge as an atrophic modification appearing secondary to decimated vascularity within specific area of the tongue, especially in lesions arising in adults [2,3].

Additionally designated as "central papillary atrophy of the tongue" or "posterior lingual papillary atrophy", median rhomboid glossitis is a benign lesion which occurs in below < 1% of adult population. Generally, individuals between 30 years to 50 years are implicated. Rising incidence is observed with enhancing age [2,3].

Median rhomboid glossitis demonstrates a significant male predominance [2,3].

Clinical elucidation

Commonly discerned clinical symptoms of glossitis emerge as pain, swelling, erythema, loss of papillae or contemporary, visible tongue lesions [4,5].

Median rhomboid glossitis exhibits a well demarcated, rhomboid, erythematous zone of variable magnitude devoid of filiform papillae situated upon midline, dorsum of tongue anterior to circumvallate papillae. Lingual, site-specific surface is smooth, elevated and fissured. Atrophy of tongue papillae is accompanied by attenuation of oral mucosa which exposes subjacent vascular articulations [4,5].

Median rhomboid glossitis demonstrates a rhomboid, hyperkeratotic, tender, erythematous or plaque-like lesion classically situated in central dorsum of the tongue [4,5].

Generally, median rhomboid glossitis manifests as a well demarcated, symmetric, depapillated lesion with a smooth or lobulated surface anterior to the circumvallate papillae. Occasionally, the lesion appears in a paramedial location [4,5].

Besides, median rhomboid glossitis may appear as an erythematous patch within posterior, midline segment of dorsal tongue anterior to aggregated circumvallate papillae. Commonly, the lesion depicts a magnitude of 2 centimetres to 3 centimetres. Filiform papillae or taste buds appear decimated [4,5].

Majority of instances are asymptomatic. However, persistent pain, irritation or pruritus may ensue. The stable, non-progressive, non-regressive tongue lesion is occasionally associated with a burning sensation [4,5].

Incriminated individuals appear susceptible to reoccurring or chronic atrophic Candidiasis. Glossitis may appear as a component of Plummer-Vinson/Paterson-Kelly syndrome comprised of iron deficiency anaemia, glossitis and oesophageal webs with dysphagia [4,5].

Histological elucidation

Upon microscopy, atrophic stratified squamous epithelium appears superimposed upon moderately fibrotic, intermuscular stroma with an intermingled exudate of chronic inflammatory cells. Chronic infection with *Candida* spp or pseudo-epitheliomatous hyperplasia of stratified squamous epithelial layer accompanies the lesion [5,6].

Median rhomboid glossitis may or may not emerge as a keratotic lesion and may simulate foci of pseudo-epitheliomatous hyperplasia of stratified squamous epithelium. The circumscribing stroma demonstrates mild chronic inflammation. Frequently, fungal infection with *Candida* spp may concur and antifungal therapy may ameliorate the lesion [5,6].

Lesions co-infected with *Candida* are characteristically accompanied by keratosis. Fungal organisms can be identified by special stains such as Gomori methanamine silver (GMS) or periodic acid Schiff's (PAS) stain [5,6].

Differential diagnosis

Median rhomboid glossitis requires segregation from conditions such as erythroplakia, granular cell tumour. haemangioma, geographic tongue, amyloidosis, Candidiasis or squamous cell carcinoma of the tongue [2,3].

Investigative assay

A comprehensive clinical history is mandatory when evaluating glossitis with nutritional status, dietary restrictions, drug intake, tobacco or alcohol intake. Assessment of clinical symptoms fluctuating with specific foods or environmental trigger is warranted. Awareness of concurrent immunosuppression, malignancies, autoimmune or endocrine conditions is necessitated [6,7].

Upon physical examination, visual characteristics and visible lesions upon dorsal and ventral surface of the tongue and appearance of oral mucosa as wet, dry, erythematous or leukoplakic mandate assessment. Chronic friction from jagged teeth may alter or ulcerate the oral mucosa. Floor of mouth requires palpation in order to evaluate tenderness or palpable lesions [6,7].

Vitamin levels, rheumatologic parameters as rheumatoid factor, anti-Ro, anti-La, erythrocyte sedimentation rate (ESR), C-reactive protein and associated investigations are necessitated in order to exclude autoimmune conditions as scleroderma [6,7].

Complete blood count (CBC) and ascertainment of HIV infection is required in incriminated immunosuppressed individuals with accompanying opportunistic infections [6,7].

Routine imaging is unnecessary although malignant transformation can be assessed with contrast enhanced computerized tomography (CT) of the neck [6,7].

Regional lymphadenopathy requires investigation. Subjects with kissing lesions upon the hard palate mandate examination for human immune deficiency virus (HIV) infection [7,8].

Malignant metamorphosis may ensue with median rhomboid glossitis, especially in ulcerated or solid lesions and mandates histological evaluation with cogent tissue specimens [7,8].

Cogent tissue sampling is beneficial in excluding conditions such as bullous disease as pemphigus vulgaris or bullous pemphigoid and malignant metamorphosis [7,8].

Therapeutic options

The benign, asymptomatic, median rhomboid glossitis can be managed conservatively with simple observation. Self-limiting instances of glossitis may not necessitate therapeutic intervention [7,8].

Symptomatic instances can be alleviated with appropriate oral hygiene and mouth rinse with corticosteroids or lidocaine. Besides, symptomatic instances of median rhomboid glossitis can be treated with antifungal agents which appear efficacious in decimating erythema associated with Candidiasis [7,8].

Generally a benign, chronic condition, glossitis can be associated with pertinent physical symptoms or cosmetic concerns. Anxiety due to inappropriate cosmetic appearance may ensue and reassurance can be challenging. Anti anxiety agents can be employed [7,8].

Glossitis may recede with appropriate treatment of associated, reversible conditions. Malignant metamorphosis requires prompt evaluation with pertinent tissue specimens [7,8].

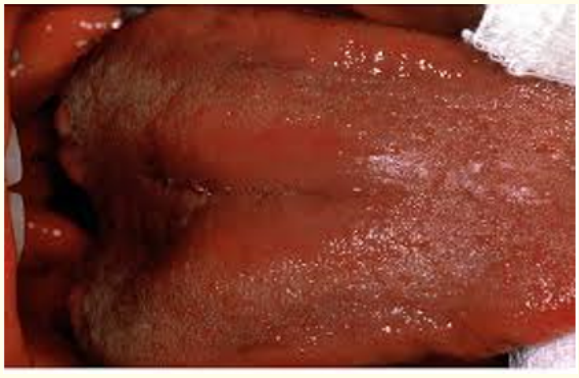

Figure 1: *Median rhomboid glossitis exhibiting centric, rhomboid area with loss of filiform papillae [9].*

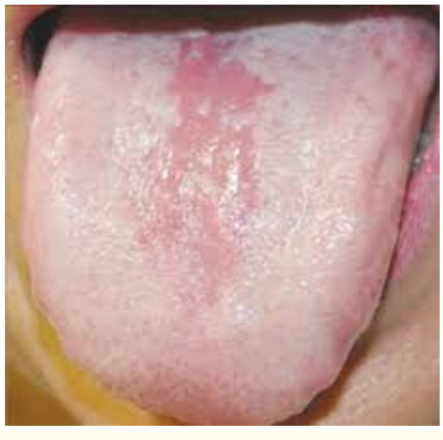

Figure 2: *Median rhomboid glossitis enunciating centric, elongated, denuded zone devoid of filiform papillae [10].*

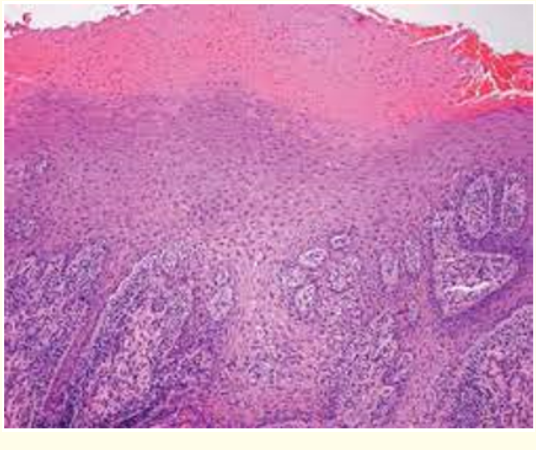

Figure 3: *Median rhomboid glossitis exemplifying stratified squamous epithelium with acanthosis, hyperkeratosis and parakeratosis with accompanying loss of filiform papillae [11].*

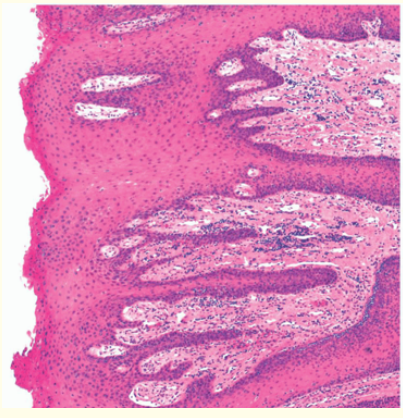

Figure 4: *Median rhomboid glossitis depicting stratified squamous epithelium with acanthosis, hyperkeratosis and decimated filiform papillae [12].*

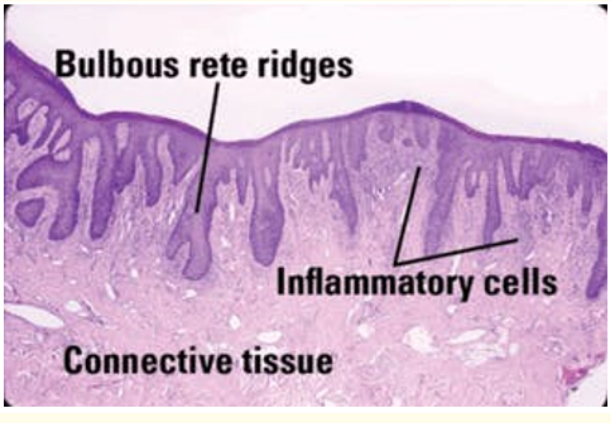

Figure 5: *Median rhomboid glossitis exhibiting stratified squamous epithelium with bulbous rete ridges and a chronic inflammatory cell infiltrate within circumscribing connective tissue [13].*

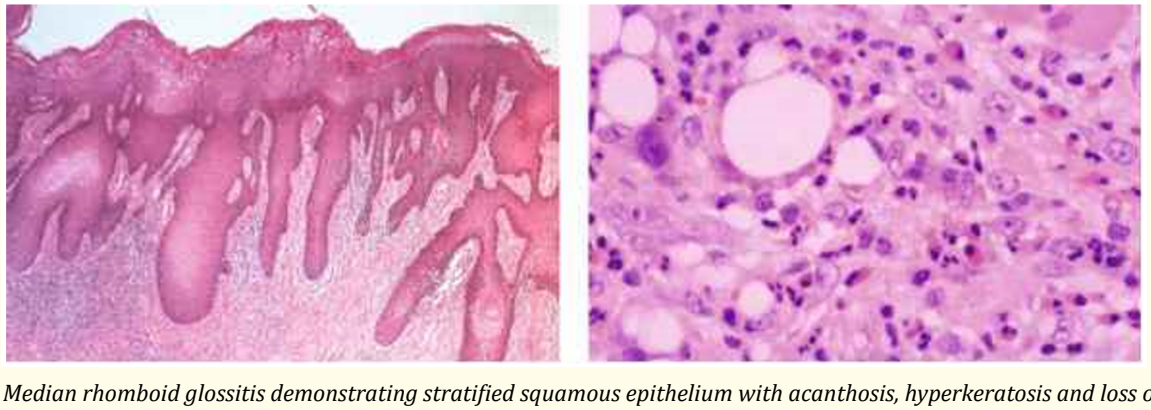

Figure 6: *Median rhomboid glossitis demonstrating stratified squamous epithelium with acanthosis, hyperkeratosis and loss of filiform papillae with accompanying chronic inflammatory cell infiltrate in the surrounding connective tissue [14].*

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9. Image 1 Courtesy: Wikkidoc.com.

10. Image 2 Courtesy: Facebook.com.

11. Image 3 Courtesy: Exodontia info.

12. Image 4 Courtesy: Basic medical key.

13. Image 5 Courtesy: RDH magazine.

14. Image 6 Courtesy: ALPF medical research.

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