Median Rhomboid Glossitis: Developmental anomaly or Acquired Disorder - A Review

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Abstract

Median Rhomboid Glossitis has remained as an enigma from the times immemorial and various researchers have argued over this entity being a developmental disorder or an acquired disorder of tongue. Over the years the terminology pertaining to median rhomboid glossitis has undergone many changes. The designated and common terminologies include Central papillary atrophy, Posterior lingual papillary atrophy and Posterior midline atrophic candidiasis. This review paper is an attempt to investigate the precise etiology, pathogenesis and treatment modalities of Median Rhomboid Glossitis.

Key Words: Median Rhomboid Glossitis, Tongue, Candidiasis

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Introduction:

Median Rhomboid Glossitis has been considered as a developmental anomaly and in the recent years the focus has shifted on it being caused due to candida albicans, and majority of the patients responding to the antifungal agents. (1)

Median Rhomboid Glossitis has been classified under a broad heading of tongue diseases. Tongue diseases can be categorized as congenital and acquired. Some examples of congenital disorders include: Aglossia, ankyloglossia, hypoglossia, bifid tongue, microglossia, macroglossia etc. Some examples of acquired disorders include: Vascular, Infective, Traumatic, Autoimmune, Inflammatory, Neurological, Neoplastic, Degenerative, Environmental, and unknown. (1)

Median Rhomboid Glossitis is an infective type of acquired disorder as the infective agent is C. Albicans which causes candidiasis and it is acquired later in life i.e after the birth of the child. Median Rhomboid Glossitis refers to a benign, ovoid/rhomboid mass that is situated in midline of the dorsum of the tongue just anterior to the V formed by the circumvallate papillae. It is an inflammatory lesion of the tongue, now believed to be secondary to candidiasis. This ovoid area is slightly raised from the rest of the tongue devoid of papillae. The elevated mass is often nodular and is occasionally fissured. (2)

It is an uncommon condition, occurring with equal prevalence in males and females at any age with slight male predilection. Most cases are not diagnosed until the middle age of the affected patient but the entity is present in childhood.

History :

This condition is prevalent since 19th century and researchers are studying to know the root cause of it. Median Rhomboid Glossitis earlier was known to be a developmental anomaly rather than due to candida species. History reveals the condition was first described by Broeq & Pautrier in 1914, who reported 17 cases under the title “Glossite losangique midlane de la face dorsal de la tongue”. In 1922 Arndth recorded 1 case and mentioned that 40 other cases of a similar nature had been observed by him in an eighteen month period at the skin clinic of University of Berlin. Then after a lot of investigations and researches in 1924, Lane reported a case and modified and shortened the original title to “Glossitis Rhombica Mediana”. Then later Zimmerman reviewed the subject in 1928 on the basis of 29 cases which he had collected from literature up to that time. Akshier and Loos and Horbst each reported 1 case each in 1934. Till that time everyone believed that Median Rhomboid Glossitis was a developmental anomaly & not a candidal infection. (3)

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children were examined and no Median Rhomboid Glossitis lesions were found at all. Since then a consistent correlation with C. Albicans has been demonstrated. The studies are now conducted on the Median Rhomboid Glossitis to be a candidal infection and many have proved it to be true. (1)

Discussion :-

Median Rhomboid Glossitis is also known as Central Papillary Atrophy of the tongue or Glossal Central Papillary Atrophy.

Embryologically, the tongue is formed by two lateral processes (lingual tubercles) meeting in the midline and fusing above a central structure from the first and second brachial arches, the tuberculum impar. The posterior dorsal point of fusion is occasionally defective, leaving a rhomboid-shaped, smooth erythematous (reddish) mucosa lacking in papillae or taste buds. The papillae in this area undergo atrophy and the tongue appears smooth and flat. Thus Median Rhomboid Glossitis is a focal area of susceptibility to recurring or chronic atrophic candidiasis, prompting a recent shift towards the use of posterior midline atrophic candidiasis as a more appropriate and a diagnostic term. (1)

This term has certain difficulties; because not all cases show initial evidence of fungal infection and not all cases improve with anti fungal therapy. The erythematous clinical appearance is primarily due to absence of filiform papillae, rather than a local inflammatory changes as first suggested in 1914 by Broeq & Pautrier. The lesion is found in one of every 300-2000 adults, depending on the rigor of clinical examinations. It is seldom biopsied unless the red discoulouration is confused with precancerous erythroplakia or its surface shows pronounced nodularity. (3)

Median Rhomboid Glossitis was thought to be a developmental anomaly caused by failure of lingual tubercles to cover the tuberculum impar. In 1971, Baughman questioned this long held belief. He argued that if Median Rhomboid Glossitis is a developmental anomaly, it should have occurred more frequently in children. In 1975, Cooke found colonisation of the mucosa of the tongue by C. Albicans, in all the biopsies taken from 10 patients with Median Rhomboid Glossitis.

There appears to be a 3:1 male predilection. Those lesions with atrophic candidiasis, are usually more erythematous but some respond with excess keratin production, and therefore show a white surface change. Infected cases may also demonstrate a midline soft palate erythema in the area of routine contact with the underlying tongue involvement; this is commonly referred to as "Kissing Lesion". (3)

Fig 1: A typical appearance of a median rhomboid glossitis lesion on dorsal surface of tongue

This lesion occurs in <1% of the adult population. There is rarely soreness or pain associated with this oral condition. Apart from the appearance of the lesion there are usually no other signs or symptoms. The typical appearance of the lesion is an oval or rhomboid shaped area located in midline of the dorsal surface of the tongue, just in front of sulcus terminalis. The lesion is usually symmetric, well demarcated, erythematous and depapillated, which has a smooth, shiny surface. Less typically, the lesion may be hyperplastic or lobulated and exophytic. It is situated, anterior to the circumvallate papillae, at about the junction of the anterior 2/3rd and posterior 1/3rd of the tongue.

There may be candidal lesions at other sites in the mouth, which may lead to a diagnosis of chronic multifocal oral candidiasis. Sometimes an approximating erythematous lesion is present on the palate as the tongue, touches the palate frequently. The lesion is typically 2-3 cm in its longest dimension. Occasionally lesions are located somewhat anterior to the usual location. None have been reported posterior to circumvallate papillae. (2)

Predisposing factors include smoking, denture wearing, use of corticosteroid sprays or inhalers and HIV infection. Candida species even in healthy people mainly colonises the posterior dorsal tongue. Median Rhomboid Glossitis is thought to be a type of chronic atropic candidiasis. Microbial culture of the lesion usually shows candida mixed with bacteria. (2, 4)

Current thinking holds true that Median Rhomboid Glossitis is a chronic infection, since Candida Albicans can be seen on smears of material culture from lesions. Prior to biopsy, the clinician should be certain that the midline lesion does not represent a lingual thyroid, as it may be the only thyroid tissue present in the patient’s body. Differential diagnosis includes: Gumma of tertiary syphilis, the Granuloma of tuberculosis, deep fungal infections, erythroplakia, geographic tongue and granular cell tumor. (1)
Histologically, Median Rhomboid Glossitis shows a smooth or nodular surface covered by atrophic stratified squamous epithelium overlying a moderately fibrosed stroma with somewhat dilated capillaries. A mild to moderately intense chronic inflammatory cell infiltrate may be seen within subepithelial and deeper fibrovascular tissues. Chronic candida infection may result in excess surface keratin or extreme elongation of rete processes and premature keratin production with individual cells or as epithelial pearls deep in the processes. Silver staining for fungus will often reveal candida hyphae and spores in superficial layers of the epithelium.

The pseudoepitheliomatous hyperplasia may be quite pronounced and the tangential cutting of a specimen may result in the artificial appearance of cut rete processes as unconnected islands of squamous epithelium, leading to mistaken diagnosis of well differentiated squamous cell carcinoma. Because of this difficulty, it is recommended that the patient be treated with topical antifungals prior to biopsy of a suspected Median Rhomboid Glossitis.

Treatment :

No treatment is necessary for Median Rhomboid Glossitis, but nodular cases are often removed for microscopic evaluation. Recurrence after removal is not expected, although those cases with pseudoepitheliomatous hyperplasia should be followed closely for at least a year after biopsy to be certain of the benign diagnosis. If medications are necessary, anti-fungal rinses such as nystatin or using anti-fungal tablets, is effective to kill bacteria and reduce symptoms. Also to decrease the inflammation, corticosteroid paste can be prescribed. The lesion resolves quickly and completely and does not recur. Good oral hygiene at home may also reduce the risk of micro-organisms growth in the mouth.

Conclusion:-

Median Rhomboid Glossitis still gives rise to questions concerning its importance and etiology. We believe that Median Rhomboid Glossitis is a form of oral candidiasis. The etiologic factors for oral candidiasis suggested are almost same as Median Rhomboid Glossitis. So it should be treated as an infective disorder rather than a developmental disorder.

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