

# CLINICAL ALLERGY IMAGES

**Section Editor – George du Toit, MB ChB, FCP, FRCPCH, MMed, DCH, Dip Allergy**

*Consultant in Paediatric Allergy & Immunology, Imperial College, St Mary's Hospital, London*

*This is one of a series about clinical images relevant to the practice of allergy and immunology. Please submit interesting images and discussion for publication to the Section Editor, Dr George du Toit (details below).*

## TONGUE VARIANTS WHICH HAVE AN ATOPIC ASSOCIATION

**George du Toit, Paediatric Allergist**

**Helen Fisher, Clinical Research Nurse**

*Imperial College, St Mary's Hospital, London*

There is a vast spectrum of clinical disorders which present with an abnormal appearance of the tongue. Many of the benign tongue variants are more common in, but not unique to, atopic individuals. These variants enjoy bizarre and descriptive names, such as *black hairy tongue, geographic tongue or fissured (scrotal) tongue*.<sup>1</sup> This article deals with the latter two conditions, both of which represent abnormalities of the papillae.



*Fig. 1. Geographic tongue.*

Correspondence: Dr G du Toit, Department of Paediatric Allergy & Immunology, St Mary's Hospital, Praed St, London W2 1NY, UK. Email [g.dutoit@imperial.ac.uk](mailto:g.dutoit@imperial.ac.uk)

## **Geographic tongue (Fig. 1)**

**Background:** Geographic tongue, also called benign migratory glossitis, was first described in 1955 and occurs in approximately 3% of the population. It occurs in all age groups but is more common in adults; the incidence in females is approximately twice that of males.<sup>2,3</sup>

**Presentation:** Patients and/or their family members may report that the tongue has an abnormal appearance which resembles that of a 'map' or burn injury. The lesions classically wax and wane over time with occasional periods of complete remission, hence the term migratory glossitis. Although generally painless, patients with a geographic tongue may occasionally present with a burning sensation which is noted with hot or spicy foods. Adult patients may occasionally be concerned about a diagnosis of oral cancer, despite reporting that they have noted these lesions over many years.

**Clinical findings:** The top layer of the 'skin' of the tongue is unevenly shed leading to the classic manifestation of an area of erythema, with atrophy of the filiform papillae of the tongue, surrounded by a serpiginous, white hyperkeratotic border and degeneration of the overlying mucosa. The tongue exhibits a well-demarcated area of erythema, primarily affecting the dorsum, and often extending to involve the lateral borders of the tongue. Similar lesions may be present concurrently on other aspects of the tongue or other mucosal sites, e.g. geographic lip (Fig. 2). There is no loss of the sense of taste, or dexterity of the tongue. There is, however, a measurable decrease in the tongue's sense of touch. Importantly, most people with geographic tongue are otherwise healthy.



*Fig. 2. Geographic lip.*

**Aetiology:** Geographic tongue tends to run in families but has been associated with a number of other genetic medical conditions, including atopic conditions, psoriasis and diabetes. A polygenic mode of inheritance has been suggested because of clustering in families. Associations with specific human leukocyte antigens have been reported. In young women, geographic tongue may be brought on or exacerbated by taking oral contraceptives. Geographic tongue has been

reported with increased frequency in patients with fissured tongue (see below). Weaker links have been reported to anaemia, seborrhoea, and eating spicy foods.

**Treatment:** Geographic tongue lesions heal spontaneously, and although benign, this condition may last for years and often recurs. Although no treatment is generally recommended, several treatments have been tried, including topical Retin-A and treatments for thrush. Patients who experience pain and burning may experience relief when treated with antihistamines.



Fig. 3. Fissured tongue or scrotal tongue

### **Fissured tongue or scrotal tongue (Fig. 3)**

**Background:** Fissured tongue, also called scrotal tongue, is a not uncommon finding in the general population. As with geographic tongue, fissured tongue is found in all age groups but with an increased incidence in adults. It is slightly more common in males.

**Presentation:** The condition is usually noted as an incidental finding. Fissured tongue is characterised by grooves that vary in depth and are noted along the dorsal and lateral aspects of the tongue. The lesions are usually asymptomatic unless debris is trapped within the fissures or when it occurs in association with geo-

graphic tongue. Fissured tongue may also be seen in Down syndrome and the Melkersson-Rosenthal syndrome.

**Clinical findings:** Fissured tongue affects the dorsum and often extends to the lateral borders of the tongue. The depth of the fissures varies but has been noted to be up to 6 mm in diameter. When particularly prominent, the fissures or grooves may be interconnected, separating the tongue dorsum into what may appear to be several lobules. The presence of fissured tongue, in association with persistent or recurring lip or facial swelling and intermittent seventh (facial) nerve paralysis (Bell's palsy), is diagnostic of *Melkersson-Rosenthal syndrome*. Histological examination exhibits non-caseating granulomatous inflammation. The facial paralysis is indistinguishable from Bell's palsy, and it may be an inconsistent and intermittent finding with spontaneous resolution. Oro-facial granulomatosis in the paediatric population may be an initial manifestation of Crohn's disease and so careful surveillance is recommended for these patients.<sup>4</sup>

**Aetiology:** A definitive aetiology for fissured tongue is not yet known. A polygenic or autosomal dominant mode of inheritance is suspected as this condition is seen with increased frequency in families with an affected proband. A biopsy is rarely indicated as the clinical findings are characteristic. Histological examination reveals an increase in the thickness of the lamina propria, loss of filiform papillae, hyperplasia of the rete pegs, neutrophilic microabscesses within the epithelium, and a mixed inflammatory infiltrate in the lamina propria.

**Treatment:** No definitive therapy or medication is required. If symptomatic, patients are encouraged to brush the dorsum of the tongue to eliminate debris that may serve as an irritant. Complications are not associated with fissured tongue per se but are noted in association with the manifestations of Melkersson-Rosenthal syndrome.

### **REFERENCES**

1. Rioboo-Crespo Mdel R, Planells-del Pozo P, Rioboo-Garcia R. Epidemiology of the most common oral mucosal diseases in children. *Med Oral Patol Oral Cir Bucal* 2005; **10**(5): 376-387.
2. Pass B, Brown RS, Childers EL. Geographic tongue: literature review and case reports. *Dentistry Today* 2005; **24**(8): 54, 56-7; quiz 57.
3. Jaikittivong A, Langlais RP. Geographic tongue: clinical characteristics of 188 cases. *Journal of Contemporary Dental Practice* 2005; **6**(1): 123-135.
4. Khouri JM, Bohane TD, Day AS. Is orofacial granulomatosis in children a feature of Crohn's disease? *Acta Paediatr* 2005; **94**: 501-504.