

**Cheilitis granulomatosa
associated with allergic
contact dermatitis to
betel quid**

Contact Dermatitis 2008; 58: 246–247

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Cheilitis granulomatosa (CG) is a rare disorder of unknown origin, which is characterized clinically by painless, recurrent or persistent swelling of 1 or both lips. Betel quids, composed of betel nuts (seeds of the *Areca catechu*), slake lime, and *Piper betel* leaf/or *Piper betel* inflorescence, are widely used in Asia and strongly associated with oral mucosal disease. It has also been found to be a cause of contact leukomelanosis because of its ingredients of various chemicals. We describe a case of CG induced by betel quid chewing.

Key words: allergic contact dermatitis; betel nuts; cheilitis granulomatosa.

Case Report

A 28-year-old male was seen in the dermatology department in May 2004, complaining of recurrent swelling of the lips for 1 year. In between episodes the lips never returned to its normal size. At various times he had attributed worsening of his condition to betel quid chewing. Previous therapy with antihistamines was unsuccessful. Facial paralysis was not present. There was no personal or family history of atopy and angioedema.

On examination, there was a non-tender, firm, diffuse swelling of the upper and lower lips. There was no evidence of focal dental sepsis, and no other intraoral abnormality was identified. A biopsy of his lower lip showed multiple granulomas in submucosa and underlying skeletal muscle layer. No necrosis in the granulomas was noted. Stains for fungi, and a Ziehl-Neelsen stain were negative. No foreign-body material was seen.

This patient was patch-tested, using an IQ chamber (Chemotechnique Diagnostics, Malmö, Sweden), with the European standard series, crushed betel nuts, crushed *Piper betel* inflorescence, and slake lime (calcium hydroxide). He developed a 2+ reaction to crushed *Piper betel* inflorescence on day (D) 2 and 1+ reaction on D 4. Control patch tests were performed on 6 healthy volunteers, using crushed *Piper betel* inflorescence (5 males and 1 female; mean age: 29 years). All volunteers showed negative reactions. His symptoms improved, and there was a decrease in lip size within 1 month of avoidance of betel quid. He had not experienced any further exacerbations of lip swelling on follow-up 12 months later.

Discussion

CG is a rare disorder of unknown origin. Various pathogenic mechanisms have been proposed, including an infective etiology (1), and hypersensitivity to food additives, and metals (2, 3). Wiesenfeld et al. have introduced the term orofacial granulomatosis (OFG) for lesions that resemble those of Crohn's disease clinically and histologically in patients that do not have accompanying gastrointestinal abnormalities (4). CG is now considered a part of the spectrum of OFG. CG is characterized

clinically by painless, recurrent or persistent swelling of one or both lips. The pathological features of the disease are lymphedema and the presence of noncaseating epithelioid granulomas sometimes with multinucleated giant cells of the Langhans type.

Our patient developed lip swelling after starting betel quid chewing. Other possible causes of lip swelling, including infection (tuberculosis, leprosy, and deep fungal infection), acquired and hereditary C1INH-related angioedema, leukemic infiltrate, and Crohn's disease, were excluded. There was a decrease in lip size and no further exacerbations of lip swelling after avoidance of betel quid. His condition was most probably induced by allergic contact reaction to *Piper betel* inflorescence.

Betel nuts are the seeds of the *Areca catechu*, which grows mainly in tropical environments. The nut is most typically used in the form of 'betel quid', a mixture of betel nuts, slake lime, and *Piper betel* leaf/or *Piper betel* inflorescence. The quid is chewed and placed between the cheek and gum and remains for an extended time. Though people often regard it as the natural product, which would benefit their health, numerous epidemiologic studies have found a causal association between betel quid chewing and oral mucosal diseases such as leukoplakia, oral submucosal fibrosis, and oral cancer (5). Besides, betel leaves has also found to be a cause of contact leukomelanosis because of its ingredients of various chemicals (6).

Although it is not clear whether contact sensitivity to foods has a primary role in the pathogenesis of OFG, some patients do respond to avoidance of contact allergens (2, 3). Our patient also experienced a decrease in lip size and no further exacerbations of lip swelling after avoidance of betel quid. History taking and recording specific stimulants to oral mucosa are very important. Patch testing may help identifying responsible factors, which can then be avoided.

References

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