



PIC QUESTION OF THE WEEK: 06/06/05

Q: What drugs, other than phenytoin, can produce gingival hyperplasia?

A: In addition to phenytoin, overgrowth or hyperplasia of gingival tissue has been associated with a rather small number of drugs. The agents most frequently implicated are the calcium channel blockers and cyclosporine. In general, the existence of already inflamed tissue is a key factor to the development of drug-induced gingival hyperplasia. Multiple case reports describe gingival hyperplasia in those receiving calcium channel blockers. In one study of geriatric patients, the incidence of gingival hyperplasia was 38%, 21%, and 19% respectively for nifedipine, diltiazem, and verapamil. Others cite the frequency of nifedipine-induced hyperplasia as 20%. Amlodipine, felodipine, and nitrendipine have also been reported to produce gingival hyperplasia. Cyclosporine's product information states the frequency of associated hyperplasia ranges from 5-16%. Others suggest the occurrence approaches 70%. Combination of cyclosporine and amlodipine or nifedipine in renal transplant patients significantly increases the risk of gingival overgrowth. In susceptible individuals, these drugs decrease calcium uptake in gingival fibroblasts resulting in an increase in fibroblast production. Nifedipine may also stimulate gingival overgrowth by inhibiting apoptosis of fibroblasts. Cyclosporine affects the concentration of various cytokines and subsequently enhances fibroblast production of collagen and protein. In most cases, drug-induced gingival hyperplasia is observed within three months of initiating therapy. Treatment is best accomplished by discontinuing drug therapy and instituting good dental hygiene practices. Plaque removal and hygiene techniques can enhance recovery, but may not result in complete healing of the lesions or even prevent their extension. In one study, periodontal surgery for severe disease was accompanied by disease recurrence in nearly 45% of patients maintained on nifedipine. This complication of calcium antagonists and cyclosporine should not be underestimated.

References:

- Abdollahi M, Radfar M. A review of drug-induced oral reactions. *J Contemp Dent Pract* 2003;4(1):1-19.
- Bunch C, Wanke LA: Calcium channel antagonist-induced gingival hyperplasia (Consult). In: Hutchison TA, Chahan DR (Eds): DRUGDEX System. MICROMEDEX, Greenwood Village, Colorado (edition expires September, 2005).

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