

Drug-Related Gingival Hyperplasia

Gingival Hyperplasia is an overgrowth or increase in the size of the gingiva, also known as gingival enlargement or gingival hypertrophy. Drug-related gingival hyperplasia is caused by three different types of drugs: phenytoin, an anticonvulsant drug for epilepsy patients; nifedipine, a calcium channel blocker for patients with hypertension and cardiovascular diseases, and cyclosporine A (CSA), an immunosuppressive drug for organ transplant patients and patients with immune disorder, such as rheumatoid arthritis and atopic dermatitis. DRGH is a major side effect of these drugs. Certain drugs in the body fluid might limit the population of plaque bacteria, alter their metabolism that in turn induce the inflammatory mediators, and activate the genetic and biochemical factors responsible for gingival fibroblast growth. Drug-induced gingival hyperplasia is a side effect with a multifactorial etiology that seems to orchestrate the interaction between drugs and fibroblasts in the gingiva. DRGH is characterized by the accumulation of collagenous components in the extracellular matrix of gingival connective tissues accompanied by varying degrees of inflammation. The identified risk factors associated with gingival hyperplasia are age and sex of the patient, type of medication, genetic factors, and the inflammatory status of the periodontal tissues due to oral hygiene. Although several studies demonstrate that evaluation of age as a risk factor for DRGH, is difficult because nifedipine is prescribed to middle-aged or older patients and phenytoin to relatively young patients. However, it is conceivable that children showed higher rates than adults in the study (Seymour). When gender was evaluated, males were shown to be three times more likely than females to develop clinically significant gingival changes in the case of patients taking Ca-channel blockers (Seymour).

DRGH usually appears at the interdental papilla and then progresses around the marginal gingiva. The gingival tissues are hard and fibrotic and gingival lobulations are frequently formed at the interdental papilla. Enlargement can cover three-quarters of the crown of tooth or more.

The lesions may look inflamed, mulberry shaped, firm, and reddish, with a tendency to bleed. Patients also complain to have bad breath.

In the cases of drug-related gingival hyperplasia, lab tests showed an increased level of cytokines in gingival crevicular fluid. The study (Anand, A.2018) shows that there is an increased presence of connective tissue growth factor in drug (phenytoin, cyclosporine, and nifedipine)-induced gingival overgrowth to compare it with healthy controls in the absence of overgrowth. Radiographically, there is no evidence associated with gingival hyperplasia.

Treatment of drug-related gingival hyperplasia is generally targeted at drug substitution (for example, instead of cyclosporin, one can administer tacrolimus, Phenytoin can be easily substituted with another anticonvulsant) and the effective control of local inflammatory factors such as plaque and calculus. Although surgical treatment is the most reliable option for DRGH. Strict plaque control procedures such as oral hygiene instruction, scaling and root planning undertaken before and after surgical treatments (gingivectomy) could prevent not only gingival inflammation but also DRGH recurrence. Daily oral rinses with Chlorhexidine are recommended to prevent recurrences in patients who have undergone surgery for gingival enlargement. Moreover, laser gingivectomy is known to be useful in patients on anticoagulant therapy. The gingival enlargement recurs in patients who continue to maintain poor oral hygiene or those who suffer from chronic gingival inflammation.

Drug-related gingival hyperplasia can be confused with:

- 1) Conditioned gingival enlargement: pregnancy, puberty, vitamin C deficiency, plasma cell gingivitis;
- 2) Gingival enlargement associated with systemic diseases: leukemia, granulomatous diseases (Wegener's granulomatosis, sarcoidosis);
- 3) Neoplastic gingival enlargement: gingival tumors- benign tumors, malignant tumors.
- 4) Inflammatory gingival enlargement.
- 5) False enlargement.

The enlargement of the gingival tissue may occur due to many other reasons also.

Dental hygienists have the responsibility to provide the best possible care to all patients. They should be able to transfer knowledge gained in the assessment phase of care to accurately diagnose and plan the appropriate therapy. Because the possibility of dental hygienists

encountering patients with drug-induced gingival overgrowth exists, they should be prepared to offer maintenance and preventive therapies formulated specifically for the needs of these patients. They should also be familiar with additional instrumentation modifications to better adapt debridement techniques to the affected gingival structures. All oral health care providers should have an excellent rapport with these patients. They should listen carefully to their concerns and, if necessary, act as a point of referral for other specialized therapists or counselors. Dental hygienists can also play a significant role in the prevention of gingival overgrowth. As studies have suggested, plaque control is required to minimize the inflammatory component of the condition. For that reason, reinforcing good oral hygiene at each appointment should be routine. Dental hygienists should emphasize the importance of frequent periodontal maintenance at each appointment, spending quality time on patient education and reinforcing positive oral health habits. Appointments for patients with gingival overgrowth should include an initial periodontal debridement and subsequent maintenance appointments every one to three months. These steps to treating gingival overgrowth will be life-altering for patients and also rewarding to oral health care providers.

References

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