

Gingival Hyperplasia

- **What is Gingival Hyperplasia:**
 - Gingival hyperplasia is a term used to describe abnormal growth of the gum tissue (gingiva) that is noninflammatory, produced by factors other than local irritation, and the result of an increased number of cells. The abnormal cells often result in pseudopockets that trap debris and plaque, commonly resulting in periodontal pocketing.
 - The term is a diagnosis based on histopathology therefore this diagnosis requires a biopsy to be performed for an accurate diagnosis and rule out other oral tumors which can look like this.
 - The condition usually recurs many months to years later, but clients should be aware that repeated gingivectomy or gingivoplasty may be required.
- **CAUSES:** The underlying cause of most cases is not fully understood it is suspected to have a genetic factor cause
 - **Idiopathic-** meaning no known reason.
 - **Breed predisposition.**
 - Boxers
 - Dobermans
 - Great Danes
 - Collies
 - **Medications.**
 - Fall into 3 categories share the mechanism of calcium antagonism, which is thought to play a role in the hyperplastic process.
 - **Immunosuppressants** (especially cyclosporine): Have been known to produce gingival hyperplasia. This condition has recently been recognized more frequently due to use of cyclosporine therapy for treating atopy in dogs and cats.
 - **Calcium-channel blockers:** Shown to produce gingival hyperplasia in dogs treated for cardiac disease.
 - **Anticonvulsants:** Produce gingival hyperplasia in cats and dogs.
- **PATHOPHYSIOLOGY:**
 - Drug-induced gingival hyperplasia appears to be associated with alteration of calcium influx in gingival tissue. The exact mechanism of action has yet to be determined.
 - Calcium antagonism may play a role in aldosterone synthesis by increasing testosterone levels.
 - Studies have shown an increase in gingival hyperplasia associated with testosterone injections and a decrease in hyperplasia in castrated dogs receiving oxodipine.
 - In patients receiving cyclosporine, transglutaminase levels are decreased in gingival tissue when calcium is not readily available, thereby decreasing apoptosis.
 - In feline studies, cells resembling fibroblasts were stimulated to proliferate with the administration of phenytoin; this process resulted in gingival enlargement.
- **SIGNS:**
 - Physical examination reveals solitary, multiple, or generalized enlargement of attached gingiva.

- Inflammation may be secondary to periodontitis but is not responsible for primary enlargement in gingival hyperplasia.
 - Bleeding upon probing is a good indicator of periodontal involvement. Tissue is generally firm to the touch.
 - Proliferation may become excessive, and gingiva may resemble an oral mass, resulting in mobility upon manipulation.
- **DIAGNOSIS:**
 - **Definitive Diagnosis**
 - Definitive diagnosis can be made only by biopsy and histopathologic examination. Here at Lake County Veterinary Clinics Dentistry Service all samples are sent to a Boarded Oral Pathologist.
 - Gingival hyperplasia is noninflammatory, but periodontal disease can alter this condition clinically and histologically.
- **SYSTEMIC:**
 - Although multiple human diseases have been associated with gingival enlargement, systemic associations in dogs and cats have not been adequately documented in the literature.
 - Any benign or malignant oral mass is a gingival enlargement that may resemble gingival hyperplasia. Biopsy must be done in these cases.
 - Dental radiography becomes important in differentiating malignant oral masses from hyperplasia.
 - Productive tumors of bone and cysts may cause the appearance of hyperplasia by expanding beneath the attached gingiva.
 - A similar condition is commonly seen in cats with expansion of buccal bone secondary to periodontal disease or root resorption associated with tooth resorptive disease.
 - Gingival hyperplasia should not be confused with proliferative gingival lesions associated with feline lymphocytic plasmacytic gingivostomatitis or tooth resorption.
- **TREATMENT:**
 - **Medical**
 - In 1 study, folate decreased gingival hyperplasia in humans and cats taking the anticonvulsant phenytoin.
 - The condition often resolves simply by withdrawing medication, but this solution is not always feasible.
 - **Surgical**
 - Surgical correction provides definitive pseudopocket removal and re-establishes normal gingival contour.
 - Bulk removal of tissue is accomplished with scalpel excision. Gingivoplasty using sterile surgical burs which can provide accurate contouring.
 - The pocket depths and landmarks for excision are located with the aid of a periodontal probe and needle to provide bleeding points in the gingiva as a guide to excision.
 - The periodontal probe is inserted into the pocket to measure depth. It is then removed and placed on the adjacent gingival epithelium.
 - A needle then marks the pocket depth 2mm coronal to the actual depth of the pocket. This ensures a final sulcus of 2 mm.
 - A bevel incision is then made to this level at an angle of 45°.
 - Once gingivoplasty removes the bulk of the hyperplastic tissue, a 12-fluted carbide burr (which I prefer) or a diamond burr is used to provide precise gingivoplasty to approximate the original contour of the gingiva.
 - Electrosurgery and laser have been used to provide both bulk removal and contouring, but individuals with extensive experience should consider use of those methods in lieu of the method described.

- **MEDICATIONS:**
 - Analgesic management is essential when gingivectomy or gingivoplasty is chosen to treat gingival hyperplasia.
 - Premedication with analgesics is commonly used before anesthesia when surgical manipulation of the oral cavity is imminent.
 - Regional nerve blocks are needed to ensure immediate postoperative comfort and, most important, optimal anesthetic safety.
 - Postoperative analgesics are indicated for 4 to 6 days.

- **FOLLOW-UP:**
 - **Patient Monitoring**
 - Although postoperative complications are not likely when scalpel gingivectomy and burr gingivoplasty are used, 14-day rechecks are advised.
 - Also providing the client with diligent home care instructions
 - **FUTURE FOLLOW-UP:**
 - Annual or biannual examinations can be used to monitor for recurrence of hyperplastic tissue.
 - Need for repeated surgery should be determined according to the extent of the changes.

- **COMPLICATIONS:**
 - Complications generally arise only when laser surgery and electrosurgery are used for gingivectomy or gingivoplasty.
 - Proper settings, operator experience, and precise technique are paramount if these methods are chosen.
 - Thermal necrosis of gingival tissue, bone, and teeth can result when these methods are used improperly
 - Many cases do recur, however, and surgical intervention may be required periodically to control the condition.

- **PROGNOSIS:**
 - Prognosis for a reasonable interval of clinical resolution is excellent.
 - Many cases do recur, however, and surgical intervention may be required periodically to control the condition.