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# DECISION MAKING IN SMALL ANIMAL SOFT TISSUE SURGERY

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# DECISION MAKING IN SMALL ANIMAL SOFT TISSUE SURGERY

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## PREFACE

When Walter Bailey of B.C. Decker approached us about editing a decision-making book on small animal surgery, the task appeared simple and straightforward. However, as our enthusiasm for the project grew so did our realization that the production of a logical and concise medical algorithm is no simple matter.

The purpose of a medical algorithm is to provide a logical plan of attack for solving a problem and, in some instances, to provide a rational therapeutic plan. Each chapter is designed to stand alone, but occasionally, an umbrella chapter has been used to tie several chapters together.

*Decision Making in Small Animal Soft Tissue Surgery* is intended to complement, not to replace, existing textbooks. It will serve to jog the memory of the practicing veterinarian and may prevent tunnel vision. For the veterinary student it will promote logical thinking and suggest alternatives when approaching problems in small animal surgery.

Contributing authors were selected on the basis of special expertise in their fields; each chapter represents an individual approach and judgment on a specific problem. The editors, however, have striven to maintain a uniform style while allowing individual approaches to show through.

It is our hope that readers will contact us if their approaches or conclusions differ from ours.

## ACKNOWLEDGEMENT

We would like to thank Brian Decker and Walter Bailey of B.C. Decker for their support and encouragement during this project. A special thank you goes to Agnes McIvor, Associate Medical Editor, whose guidance was essential in the construction of high quality surgical algorithms. We also wish to thank Muriel Burke and Mary Sinclair for their patience in typing and retyping the algorithms and text, and Lloy Osburn for her illustrations.

Allen G. Binnington  
Joanne R. Cockshutt

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# INTRODUCTION

*Decision Making in Small Animal Soft Tissue Surgery* is divided into ten sections, each based upon body systems. Within each section are chapters consisting of an algorithm and explanatory comments. The algorithmic heading may be a patient's symptom (urinary incontinence), clinical sign (epistaxis), or presumptive diagnosis (suspicion of megaesophagus). Some sections contain an introductory algorithm, which is intended to simplify a complex subject or to provide a starting point in the initial diagnostic plan; from this the reader may proceed to a more specific algorithm.

Each algorithm flows downward. The path branches when a specific feature is characterized that is important in the decision-making sequence. This point may be a sign or symptom, clinical finding, or test result. Each branch leads ultimately to a diagnostic or therapeutic end point.

Arrows entering the algorithm signify information obtained from the history taking and physical examination, specific tests, and diagnostic procedures. Therapeutic recommendations are enclosed in boxes. Surgical procedures and invasive diagnostic procedures are written in capital letters.

Some algorithms provide a variety of possible conclusions. Occasionally a reevaluation of the patient or of test results is recommended, a list of differential diagnoses may be offered, or the reader may be referred to another algorithm.

Where special emphasis or explanation is required, a letter is placed to the left of the item in question referring the reader to a corresponding paragraph on the opposite page. These comments are referable only to the algorithm; the text is not designed to be read in continuity. References have been provided as a source of detailed information, and their use is strongly recommended.

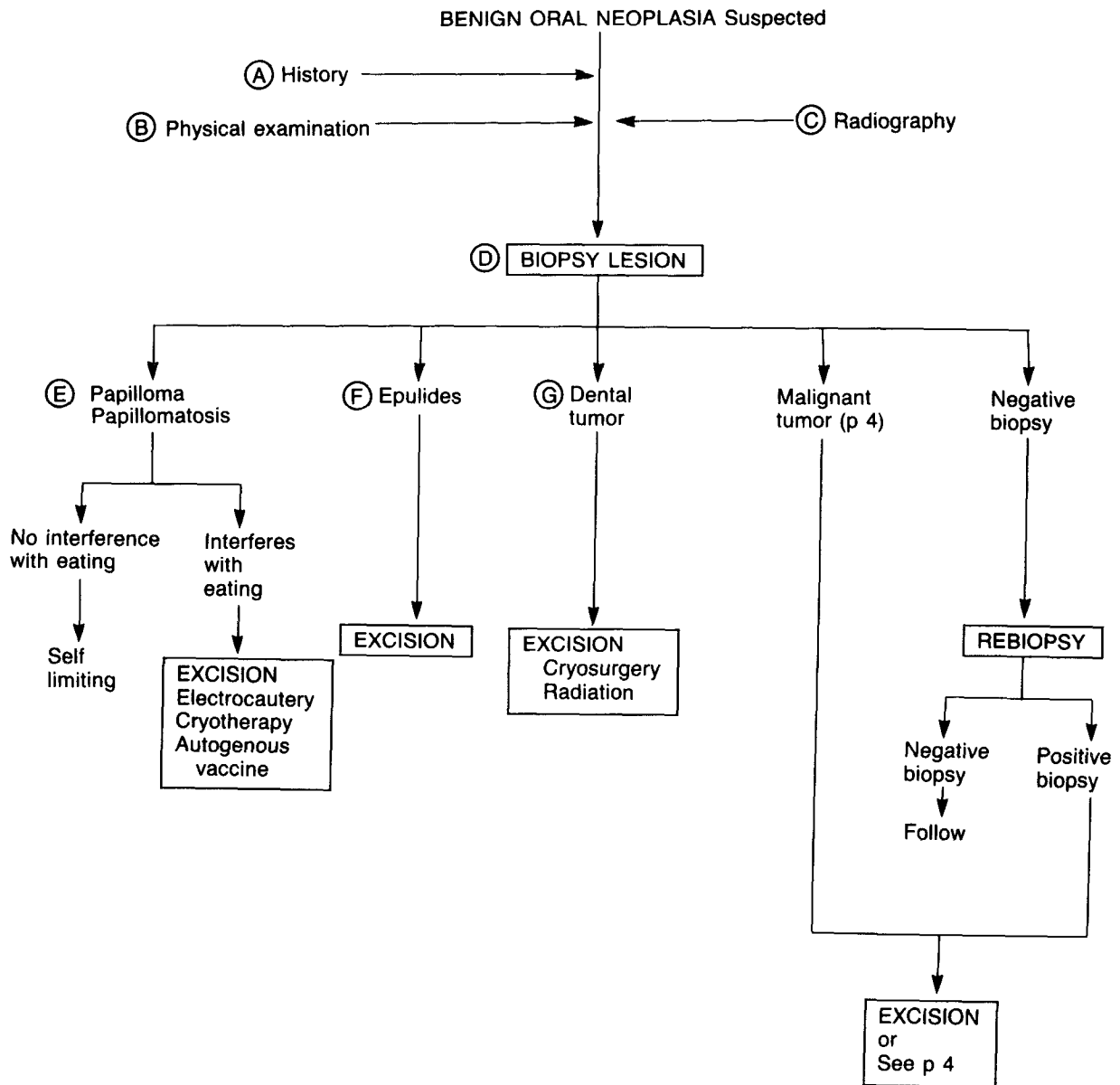
# BENIGN ORAL NEOPLASIA

Howard B. Seim III

- A. Patients with oral neoplasia generally present with any one or a combination of the following signs: difficulty in eating, anorexia, foul breath, oral bleeding, oral swelling, dysphagia, facial deformity, and loose dentition.
- B. Visual oral examination generally results in a presumptive diagnosis of oral neoplasia. Digital palpation to assess the presence or absence of bony involvement should be done. Palpation of regional lymph nodes is recommended to assess possible involvement.
- C. Masses that appear to involve the bone should be radiographed to verify the presence of bony invasion and to assess the margins.
- D. Incisional or excisional biopsy of any oral mass is mandatory in order to definitively diagnose the lesion. Even the most benign-looking mass may be malignant, thus dramatically changing the treatment and prognosis. Biopsy results generally dictate the extent and/or combination of treatment procedures necessary to effect a cure.
- E. Canine oral papillomatosis is a viral disease of young dogs that is seen occasionally. If only a few papillomas are present, they require no treatment and can be expected to regress. Multiple tumors or large tumors that interrupt normal occlusion, mastication, swallowing, or respiration should be excised using scalpel excision, electrocautery, or cryosurgery. An autogenous vaccine may be used.
- F. Epulides are tumors of the periodontal ligament and are the most common benign oral tumors in dogs. Three types of epulides are recognized: fibromatous epulis, ossifying epulis, and acanthomatous epulis. Fibromatous epulides are noninvasive and respond favorably to local and deep excision. This tumor is often called an epulis, gingival hypertrophy, or gingival hyperplasia. Recurrence is common after superficial resection. Osseous epulides are similar to fibromatous epulides except for the presence of osteoid, and treatment and biologic behavior are identical. Acanthomatous epulides tend to be more invasive and often involve bone. Partial mandibulectomy or partial maxillectomy is required for control. Prognosis for epulides is excellent, provided complete excision is performed.
- G. Tumors of dental laminar epithelium are rare in dogs and include ameloblastoma and odontoma. These tumors often invade bone and must be evaluated radiographically prior to treatment. Surgical excision (partial mandibulectomy or partial maxillectomy), cryotherapy after curettage of the tumor cavity, or radiation have proven to be the most rewarding forms of therapy. The prognosis is favorable if complete excision is performed.

## References

- Norris AM, Withrow SJ, Dubielzig RR. Oropharyngeal neoplasms. In: Harvey CE, ed. Veterinary dentistry. Philadelphia: WB Saunders, 1985:123.
- Richardson RC, Jones MA, Elliott GS. Oral neoplasms in the dog: a diagnostic and therapeutic dilemma. Comp Cont Ed 1983; 5(6):441.



# MALIGNANT ORAL NEOPLASIA

Howard B. Seim III

Generally, therapy and prognosis for malignant oral neoplasia is dictated by the histologic tumor type, location of the primary tumor, extent of its involvement, and the condition of the patient. The most common malignant oral neoplasms in the dog are malignant melanoma, fibrosarcoma, squamous cell carcinoma, and primary bone tumor. In the cat, squamous cell carcinoma, and fibrosarcomas are the most prevalent oral neoplasms.

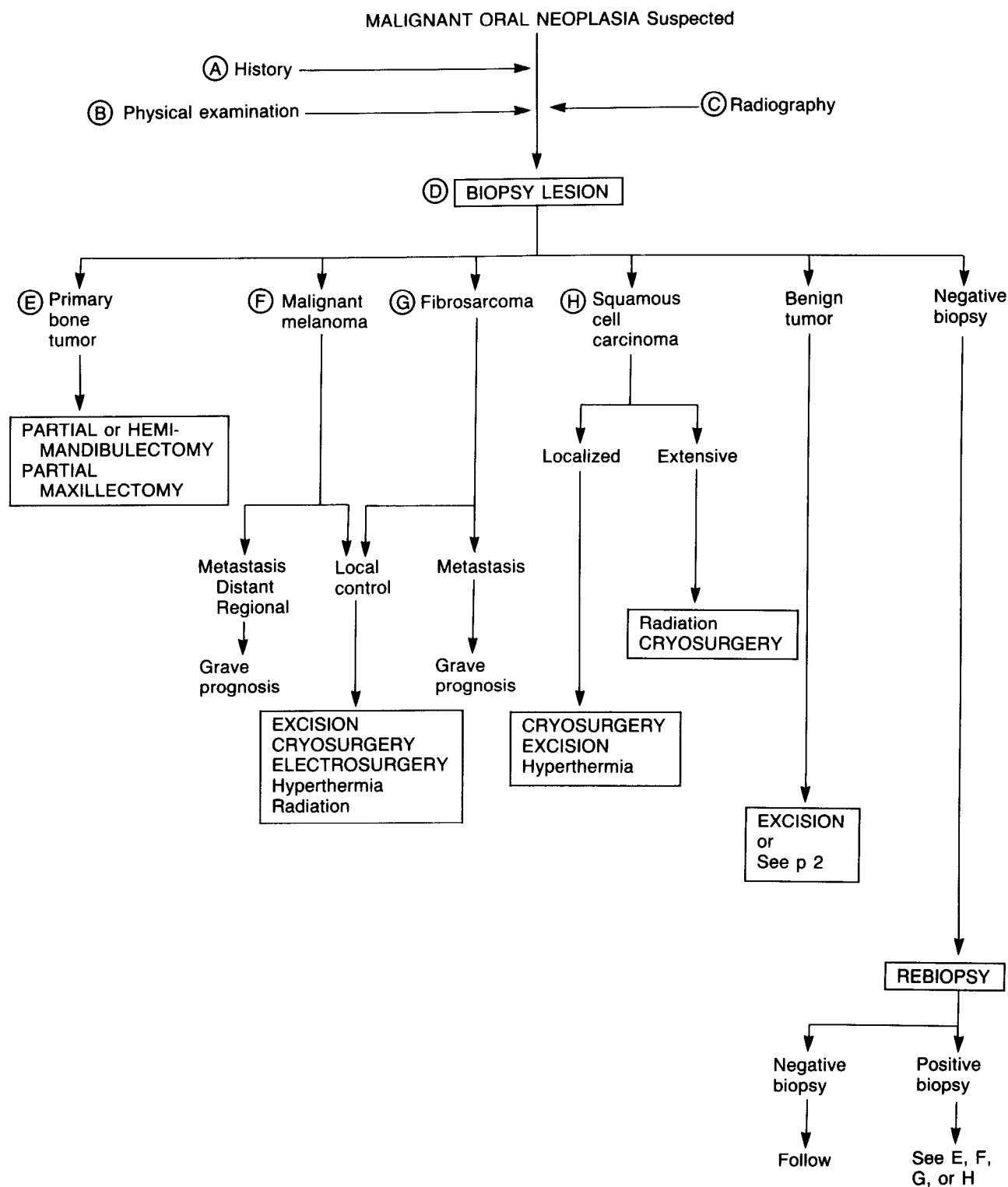
- A. Patients with oral neoplasia generally present with any one or a combination of the following signs: difficulty in eating, anorexia, foul breath, oral bleeding, oral swelling, dysphagia, facial deformity, and loose dentition.
- B. Presumptive diagnosis of oral neoplasia can often be made during the initial physical examination. Visualization of a mass, erosion or ulceration in the oral cavity may be an early sign of neoplastic disease. As the neoplasm grows, facial deformity, oral bleeding, fetid odor, and palpable, enlarged regional lymph nodes may be observed.
- C. A complete series of skull radiographs should be taken including ventrodorsal, lateral, right and left lateral obliques, skyline, and open mouth views. It is important to assess the presence or absence of bony involvement in order to better define the necessary treatment.
- D. An incisional or excisional biopsy, if possible, is performed to assess the histologic tumor type. Fine needle or Tru Cut samples are also of diagnostic value. This information, coupled with accurate radiographic assessment and lymph node biopsy, will help dictate definitive therapy.
- E. Primary bone tumors involving the oral cavity are relatively rare in dogs. These tumors respond best to local excision. Partial or hemimandibulectomy and partial maxillectomy are the treatment of choice depending upon the location of the tumor.
- F. Malignant melanoma of the oral cavity is a rapidly growing, locally invasive tumor that metastasizes rapidly. Treat-

ment consists of early local control through excision, cryosurgery, electrocautery, hyperthermia, and/or radiation, as well as systemic treatment with appropriate chemotherapeutic drugs to control metastases. The prognosis for long-term survival is unfavorable. If metastasis is present at the time of diagnosis, the prognosis is grave.

- G. Fibrosarcoma is a rapidly growing, extensive, invasive tumor with a high recurrence rate. Metastasis at the time of diagnosis is frequent. Treatment consists of early local tumor control by wide excision as described for malignant melanoma. The prognosis for patients that present with fibrosarcoma is unfavorable. Patients that have distant metastases at the time of diagnosis have a grave prognosis.
- H. Squamous cell carcinoma generally is characterized as locally invasive, particularly to bone, yet with little tendency for distant metastasis. Treatment is by local control of the tumor. The prognosis for early and complete removal of squamous cell carcinoma is guarded to unfavorable. The radiosensitive nature of squamous cell carcinomas may make local control by radiation more successful. Malignant oral neoplasms in general have an unfavorable prognosis. Although at present most of the treatment regimens are palliative, various combination treatments carry the most hope for local and systemic control.

## References

- Harvey HJ, MacEwen FB, Brown D, et al. Prognostic criteria for dogs with oral melanoma. JAVMA 1980; 178(6):580.
- Hoyt RF Jr, Withrow SJ. Oral malignancy in the dog. JAAHA 1984; 20:83.
- Thrall DE. Orthovoltage radiotherapy of oral fibrosarcomas in dogs. JAVMA 1981; 179:159.
- Todoroff RJ, Brodey RS. Oral and pharyngeal neoplasia in the dog: a retrospective survey of 361 cases. JAVMA 1979; 175(6):567.





# TONSILLAR ABNORMALITY

Howard B. Seim III

- A. Patients with disorders of the tonsils often present with an acute history of gagging, retching, drooling, and dysphagia. As the tonsillar disorder progresses, signs such as anorexia, depression, and oral bleeding may occur.
- B. A thorough physical examination with emphasis on the oral cavity should be performed. Localized or generalized oral inflammation, fetid odor to the breath, and unilateral or bilateral tonsillar enlargement and eversion of the tonsil from the tonsillar crypt may be seen.
- C. Tonsillitis, as a primary disease entity in the dog and cat, is rare. It is more likely associated with a systemic disorder or local involvement (e.g., neoplasia, foreign body). Further investigation of the patient that presents with tonsillitis is mandatory in order to establish a definitive diagnosis.
- D. Patients with bilateral tonsillar involvement are evaluated as to the presence of a noninflammatory or inflammatory process. Noninflammatory tonsillar enlargement implies metastatic neoplasia or a systemic disorder. Biopsy of an affected tonsil allows definitive diagnosis of neoplastic disease or reveals a nonspecific response if a systemic disorder is present. Tonsillar biopsy is also recommended for patients presenting with inflammatory disorders (e.g., foreign body, infection, trauma) causing bilateral tonsillar enlargement. Histopathologic evidence of specific disease entities may help to determine an appropriate treatment regimen.
- E. Patients with unilateral tonsillar involvement are also evaluated for the presence of an inflammatory or noninflammatory process. Differential diagnosis requires tonsillar biopsy. Histopathologic results dictate the appropriate treatment regimen. The most common primary tumor of tonsillar origin is squamous cell carcinoma that arises from the tonsillar crypt. Other tumor types, such as lymphosarcoma, rarely originate from the tonsil.
- F. Primary inflammatory disease of the tonsil is rare. When present, it generally occurs secondary to external trauma or foreign objects (grass awn, porcupine quill) lodged in the tonsillar crypt. Tonsillar inflammation is generally secondary to systemic disorders, such as canine distemper and upper respiratory infections, or secondary to chronic coughing.
- G. Treatment of inflammatory disorders of the tonsil is dictated by the etiology. In primary tonsillitis, the tonsillar crypts should be carefully examined for the presence of a foreign object. Removal of the foreign object generally results in a cure.
- H. Patients that have chronic recurrences of primary tonsillitis with no evidence of a foreign body may be helped by tonsillectomy. In cases of secondary tonsillitis, treatment of the underlying systemic disorder generally results in resolution of the tonsillar involvement.
- I. Peroral tonsillectomy is performed by grasping the tonsil with an Allis tissue forcep, everting the tonsil from its crypt, placing a Kelly or Carmalt hemostat across the base of the tonsil, excising the tonsil, and oversewing the tissue that remains in the clamp. This technique allows complete removal of lymphoid tissue as well as primary suturing of pharyngeal mucosa to control hemorrhage.

## References

- Brodey RS. Differentiating tonsillar lesions in the dog. *Mod Vet Pract* 1966; 47:58.
- Dulisch MC. The tonsils. In: Slatter DH, ed. *Textbook of small animal surgery*. Philadelphia: WB Saunders, 1985:1219.
- MacMillan R, Withrow SJ, Gillette EL. Surgery and regional irradiation for treatment of canine tonsillar squamous cell carcinoma: retrospective review of eight cases. *JAAHA* 1982; 18:311.