Surgical Case Report:

Neoplasia of the Face and Head

EMPHASIS:
This is the second article in a series about oncologic surgery. The preceding article reviewed preoperative diagnostic testing, biopsy techniques, and basic principles of oncologic surgery. In this article, we will present a general overview of the surgical options for common tumors of the head and face.

The subject, neoplasia of the face and head, is very broad. Our intention is to provide a general overview of common tumor locations and types, and the surgical options available. Specific details of the surgical procedures can be found in previous “Dimensions in Surgery” articles, as noted.

AXIOM: Of course, all possible treatment modalities other than surgery should always be considered. However, a detailed discussion of these other options is beyond the scope of this article.

PREOPERATIVE DIAGNOSTICS:
For a detailed discussion, please refer to Dimensions in Surgery #179: Principles of Oncologic Surgery

NEOPLASIA OF THE PINNA:
1. Feline solar-induced squamous cell carcinoma: The definitive treatment is pinna amputation.

AXIOM: Microscopic in situ involvement throughout the ear margin is common. So, removal of small focal lesions by laser, electrocautery, or local excision carries a significant risk of recurrence at other portions of the ear margin.

AXIOM: If bilateral partial or total pinna amputations are planned, try to make the end result symmetrical. Otherwise, the client may be disappointed with the cosmetic appearance.

2. Pinna amputation is a technically a very straightforward procedure.

NEOPLASIA OF THE EAR CANAL:
1. Lateral Ear Canal Resection: A useful approach to gain exposure to polyps or benign masses of the ear canal.
2. Vertical Ear Canal Ablation: Occasionally indicated for tumors of the dorsalmost 1/3 of the vertical ear canal. (See Figure 1)
3. Total Ear Canal Ablation and Lateral Bulla Osteotomy: For tumors of the horizontal canal, or the ventral 2/3 of the vertical canal. This is usually the procedure of choice for malignancies, since it allows for the widest margin to be obtained. (See Figure 2)

AXIOM: A bulla osteotomy should always be performed when a total ear canal ablation is performed; otherwise, bulla osteitis is likely to occur.

DANGER:
Be sure the client is aware that, in erect-eared dogs, the ear may droop or hang post-op.

For details on each of these surgeries, refer to our previous “Dimensions In Surgery” articles.

NEOPLASIA OF THE JAW:
The options (See Figure 3) include:

a. Rostral mandibulectomy
b. Partial Hemimandibulectomy
c. Total hemimandibulectomy
d. Total hemimandibulectomy plus contralateral rostral mandibulectomy

AXIOMS:
• The quality of life with a hemimandibulectomy is typically excellent, if at least 60% of one mandible can be preserved.
• Try to preserve the adjacent mandibular and sublingual salivary ducts.
• Always place an esophagostomy or gastrostomy tube at the time of surgery, since many patients will be reluctant to eat during the first several days post-op.

For details on each of these surgeries, refer to our previous “Dimensions In Surgery” article.

NEOPLASIA OF THE MAXILLA:
A hemi-, rostral, or partial maxillectomy (See Figure 4) is advised.

AXIOMS:
• Consider the tumor’s palpable and radiographic extent, and establish margins based on the greater of these.
• Use a scalpel, rather than electroscalpel, to minimize thermal damage which might impair the healing of the incision. For the same reason, minimize the use of electrocautery; if it is used, bipolar cautery is preferable.

• Ligate the major palatine artery if it will be involved in this incision. We do not routinely perform temporary carotid artery ligation.

• There will be some distortion of the facial contour, since apposing the buccal flap to the palate will pull the lip medially. The result, however, is quite acceptable cosmetically.

• Consider placing an esophagostomy or gastrostomy tube at the time of surgery. Not only will this help maintain a good plane of nutrition, but it will also minimize the risk of dehiscence and oronasal fistula formation.

For details on each of these surgeries, refer to our previous “Dimensions In Surgery” article.

**NEOPLASIA OF THE EYELID:**

1. Meibomian adenomas, if small, can be eliminated by carbon dioxide laserering or delicate electrocautery.

2. Up to one-third of the lid margin can be removed and the lid can be primarily repaired without significant compromise to eyelid function (See Figure 5).

3. For larger tumors involving the eyelid, particularly squamous cell carcinoma in the cat, enucleation and orbitectomy or radical local excision are advised.

**NEOPLASIA OF THE NASAL PLANUM:**

A nosectomy (See Figure 6) can be performed.

**AXIOM:** In those few cases where the tumor is limited to one alar fold, a heminosectomy can be performed, leaving the contralateral half of the nasal planum intact.

**RADICAL EXCISION OF DEEP, INVASIVE, OR BONY MASSES OF THE FACE AND HEAD:**

1. If necessary, the full thickness of tissue and bone on the dorsal aspect of the nasal sinuses, medial aspect of the orbit, dorsolateral aspect of the nasal cavity, as well as the zygomatic arch, the eye, and the periorbita, can all be sacrificed if necessary to eliminate neoplasia of this area. (See Figure 7). The
Figure Two: This schematic drawing depicts a tumor in the ventral ear canal. When this occurs, we recommend a total ear canal ablation and lateral bulla osteotomy.  

2A) The skin incision is made creating two flaps.  

2B) The vertical ear canal is exposed.  

2C) The mucosal skin incision frees the vertical ear canal.  

2D) The ear canal is rotated using the horizontal ear canal attachments as a hinge.  

2E) The canal is rotated into a ventral position.  

2F) Protect the facial nerve as the canal is pulled by an allis.  

2G) Scissors are used to resect the cartilage from the bony petrous temporal.  

2H) The canal is sent to the laboratory for analysis.  

2I) Rongeurs are used to create the bulla osteotomy.  

2J) The completed bulla osteotomy.  

2K) The finished skin incision.

Figure Three: This schematic drawing depicts the mandibulectomy options available to the surgeon:  

3A) Normal anatomy of the lower jaw.  

3B) Rostral mandibulectomy.  

3C) Partial hemimandibulectomy.  

3D) Total hemimandibulectomy.  

3E) Total hemimandibulectomy plus contralateral rostral mandibulectomy.
precise surgical details will of course depend on the tumor type, location, and extent.

AXIOM: Although the facial appearance obviously is altered postop, it is not disfiguring as most clients fear. In our experience the majority of clients have been very pleased with the long-term results of even radical surgeries in this area.

We would like to thank Dr. Mona Rosenberg, DACVIM (Oncology) and Dr. Sue Downing, of the Veterinary Cancer Referral Group, for their invaluable advice in preparing this series of articles.

Figure Four: This schematic drawing depicts the maxillectomy options available to the surgeon: 4A) Right-sided maxillary neoplasia. 4B) Partial maxillectomy of the right maxilla. 4C) Cross sectional view of a maxillary neoplasia. 4D) Resected maxillary tumor. 4E) Submucosal and mucosal flap creation. 4F) Flap is mobilized to cover defect. 4G) Defect closed. 4H) Lateral view of the completed partial maxillectomy.

Figure Five: This schematic drawing depicts that up to 1/3rd of the margin of the lid may be resected and primarily repaired without significant compromise to the eyelid function. 5A) Lesion incised. 5B) Full thickness wedge resection performed. 5C) Resection sutured with a 2 layer closure.
AUTHOR’S NOTE:
If you have any questions concerning this paper, additional references, surgical supplies or sources of products mentioned or used in this protocol, please FAX us at: 1-310-479-8976. We will answer your questions promptly.

Coming Attractions:
Next month, in the third article in our Oncologic Surgery series, we shall discuss perianal neoplasias.

Perianal tumors, both benign and malignant are very frequently seen in the dog.
Rarely, are tumors of this type seen in cats, since perianal glands are absent in the feline.
Regardless of whether the tumor is benign or malignant, surgical removal is usually advised, to prevent progressive interference with the function of the anal sphincter. We shall outline our protocol for surgical removal of perianal tumors.

See you then!

Figure Six: This schematic drawing depicts: 6A) A nasal neoplasia such as a squamous cell carcinoma. 6B) A total nosectomy has been performed with accurate hemostasis.

Figure Seven: This schematic drawing depicts: 7A) Lateral view of the skull showing a shaded area that may be removed resecting neoplasia. 7B) This 3/4 view shows a shaded area that may be resected. This region may be removed unilaterally or bilaterally.

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