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“Sophie” - Osteosarcoma, Partial Mandibulectomy

Sophie is a nine year old spayed female Belgian Sheepdog. She was presented with a tumor of the gums around the right upper canine tooth. The tumor was removed. The biopsy revealed an osteosarcoma (tumor of bone tissue) of the maxillary (cheek) bone. Osteosarcomas can occur in both flat bones (like the skull, jaw, face, etc.) or in long bones (such as the bones of the legs). Flat bone osteosarcomas can be malignant, destructive, invasive, and disfiguring, but they tend to have a significantly lower metastatic rate (rate of spread to other parts of the body) than do long bone osteosarcomas. The surgery site healed well, but regrowth was noted 8 months later. A second surgery was performed to remove the new growth at the level of the upper third incisor tooth (just in front of the site of the original tumor). Again, the surgery site healed nicely and Sophie did well. Figure 1 is a photo of Sophie 9 months after the second surgery. No signs of regrowth of tumor was seen.

Sophie was again presented in May 2000 with regrowth of tumor at the level of the upper right first premolar tooth (just behind the area of the original tumor). This time radiographs showed that the tumor extended into the nasal cavity as far back as the upper third premolar tooth (Figure 2). The decision was made to do another surgery, but this time it would be very aggressive, essentially involving resection of teeth, gums, and bone of the right side of Sophie’s face, extending into the nasal cavity. The surgery would be done to extend beyond the margins of the tumor by a significant amount (hopefully at least 3 mm beyond the tumor margins all the way around). A strategy was developed to reconstruct the face once the tumor was aggressively removed utilizing gum, palate, and lip-lining tissues. An overlapping graft technique was used to reconstruct a floor of the nasal (nose) cavity after the bone was resected (removed; see Figure 3). It was agreed that a “dimple” would remain on the right side of the face, which could be revised with cosmetic surgery once all had healed...if necessary.



Figure 1: Sophie, 9 months after second surgery (First regrowth of tumor)



Figure 2. X-radiograph showing the extent of the second regrowth



"Sophie" cont.

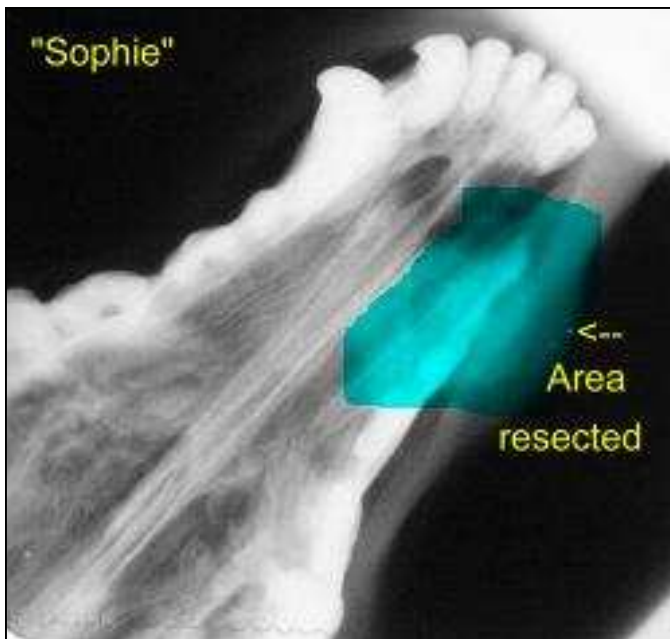


Figure 3.
X-radiograph showing area resected (removed) during surgery

The surgery went very well and healed spectacularly well! Sophie was eating normally and doing well by the second post-operative day! Figures 4, 5, and 6 show Sophie one month after the third surgery. She adjusted so well that no revision cosmetic surgery was contemplated. The slight "dimple" defect on the right side of her face is so insignificant that the owners did not feel that any more surgery would be necessary. She has no problem with respiration and no nasal discharge. Her biopsy result on the last surgery revealed that the tumor had changed character somewhat. It was diagnosed as a chondrosarcoma (tumor of cartilaginous tissue). The margins of resection extended beyond the tumor from 2 to 7 mm. Chondrosarcomas of the nasal cavities are generally considered to be primarily locally invasive tumors, with distant metastasis likely in only about 20% of cases.

Sophie is a wonderful example of how nasty tumors can be aggressively resected and reconstructive surgery can be done to return them to both functionally and cosmetically acceptable (if not actually cosmetically pleasing) results. Entire jaws or other major areas have been successfully removed and reconstructed with surprisingly good results. In some cases, additional treatments, such as chemotherapy or radiation therapy may be recommended, but neither was necessary (nor likely helpful) in Sophie's case.

Figures 4-6

Sophie, one month after the third surgery. Arrows indicate the area of surgery.



Figure 5.



Figure 6.

