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SKIN TUMORS IN DOGS AND CATS. PRE OPERATIVE DIAGNOSTIC WORK UP, SURGICAL MARGINS AND CLOSURE TECHNIQUES

The skin and subcutis is the most common location of tumors in dogs and the second most common in cats. In dogs mast cell tumors, soft tissue sarcomas, perianal gland adenoma, squamous cell carcinoma and lipomas are the most common, in cats the majority is malignant and include squamous cell carcinoma, basal cell tumors, mast cell tumors and soft tissue sarcomas. Surgery is the main therapeutic strategy in skin tumors management in companion animals ⁽¹⁾.

A thorough diagnostic work up is mandatory. The very beginning consist of signalment, disease and clinical history, which can guide toward an initial differential diagnosis list of the most common tumors. As a second step a general exam is performed, and the tumor is examined in detail. Attention should be given to the size, anatomic location, consistency, color, fixation to surrounding tissue, ulceration, and signs of inflammation. Examination of the lymphnodes is part of the routine work up because lymphadenopathy may be the result from metastasis or from reactivity to tumor factors, infection, or inflammation ⁽²⁾.

A routine blood work including CBC and chemistry should be part of every tumor patient's staging. In addition cytology of the tumor and regional lymphnode is warranted. This has a high predictive value of diagnosing the neoplasia, and the accuracy of cytologic diagnosis compared with histopathology is estimated to be more than 90% ^(3,4). The diagnostic imaging techniques such as x-ray, ultrasonography, computed tomography (CT), or magnetic resonance imaging (MRI) help to estimate the margins and invasiveness of the tumor. Based on this techniques histologic biopsy can be planned as incisional or excisional biopsies, which are an important diagnostic tool in treatment planning.

Based on these information surgical margins can be determined, which are the most important factor in local tumor control ⁽⁵⁾. In general wound margins are classified

as intracapsular, marginal, wide and radical. By removing a tumor intracapsular, macroscopic neoplastic cells are leaved behind, why this technique is also known as debulking. It is performed by dissecting just peripheral to the tumor pseudocapsule in the reactive zone and is just recommended with benign tumors.

In taking marginal resections, cells are leaving microscopically behind but in general it does not compromise wound closure. This type of resection can be planned or unplanned. Planned marginal resection is based on the results of the preoperative tumor biopsy whereas unplanned resection is without previous biopsies and should be avoided because of a higher risk of incomplete resection.

If the intension is to remove the tumor macroscopically and microscopically wide or radical resection is considered. Wide or radical surgical resection is recommended in the management of the majority of solid tumors because the first surgery provides the best chance for cure ⁽⁶⁾. Taking wide margins, the tumor and capsule is not entered and in general is taken en bloc. Surgical margins should be determined on the basis of tumor type, tumor grade, if appropriate biologic behavior, anatomic location, and the barrier provided by surrounding tissues ⁽⁷⁻¹⁰⁾. Radical resection is occasionally required for complete excision of a tumor, such as a limb amputation, or a complete mastectomy, which is defined as the removal of an entire tissue compartment, ⁽⁶⁾. As closing technique, primary wound closure is preferred because it provides simpler wound care, less need for bandage, faster wound healing, reduced pain, less scarring, protection of vital underlying structures, and better cosmetic results ⁽¹¹⁾. More layer closure is recommended to get as less stress to the final layer as possible. Based on the surgeon's preference the superficial layer can be closed in an intradermal pattern or an external cutaneous pattern in a simple or continuous fashion.

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