

Neoplasia II: Benign and malignant neoplasms in squamous epithelium and haematopoietic tissue – Examples in Veterinary Medicine

1.0. Squamous epithelial neoplasms

While papillomaviruses can cause benign tumours of the squamous epithelium (papillomas or warts) in animals, these are usually of the alimentary tract rather than cervical lesions as seen in humans. In some cases, particularly cattle fed on certain plants, viral-induced papillomas may undergo malignant transformation into malignant squamous cell neoplasms – squamous cell carcinomas (SCCs).

It is important to note that SCCs can arise from other underlying causes.

Squamous cell carcinomas may arise in different organs. In cats and dogs, SCCs are the most frequently reported malignant epithelial neoplasm, arising from squamous cells of the epidermis. As seen in the pictures below, SCCs are more common in unpigmented or depigmented skin following long exposure to UV light from the sun.



SCC on nose of cat



SCC of ear of cat

Both pictures above show erosive SCCs with crusting, ulceration and haemorrhage. Histological examination of a skin biopsy is required for diagnosis. SCCs are invasive and many spread via regional lymph nodes and the bloodstream.

SCCs also occur in horses, where they are more common in grey horses. The picture below shows a SCC around the anus. SCCs of the 3rd eyelid can occur in cattle, particularly breeds such as the Hereford (white face).

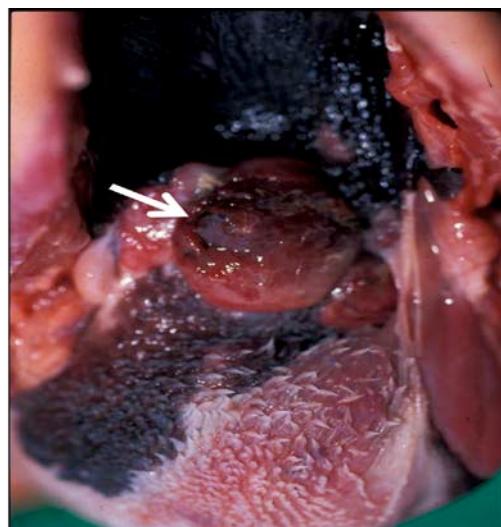


SCC around anus of horse

1.1. Squamous Cell Carcinoma – NDP Image: [S2008-140A](#)

Q1. Examine the scanned slide provided, identify the pathological process and give a diagnosis

Note that not all SCCs are erosive. The picture below shows a SCC of tonsillar epithelium in a dog. These generally cause discrete masses (arrow). Tonsillar SCCs are highly malignant, are locally invasive and rapidly metastasise to local lymph nodes and more distant sites.



Q2. Unknown mass: Describe the picture and decide whether the mass is a neoplasm, or an inflammatory process.



Ventral surface of tongue



Lateral surface of tongue

1.2. Lymphomas are one of the most common malignancies affecting dogs and cats, and less common in other species such as cattle and horses. These tumours represent a good animal model for human Non-Hodgkin Lymphoma (NHL). Note that lymphoma is the term given to solid lymphoid tumours in tissues; leukaemia means the presence of neoplastic white blood cells (lymphoid or myeloid) in the circulating bloodstream.

Lymphomas are often discrete masses, but in the intestine can be more diffuse, as shown below, causing generalised thickening of the intestinal wall and diarrhoea. Solitary tumours in the intestine can cause obstruction.



Classification of lymphomas in veterinary medicine can be complex. A simplistic way is to classify them depending on site of location e.g. splenic, thymic, cutaneous, alimentary. Lymphomas can be of B cells or T cells, or less commonly non-B, non-T cells. Another system used is the working formulation, primarily orientated towards the clinical outcome and less on cellular criteria.

Q3. Examine the scanned slide provided, identify the pathological process and give a diagnosis

Mass – NDP Image: [PM2007-135E](#)