

Cutaneous squamous cell carcinoma and multiple epidermoid cysts in a California Sea Lion

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Summary

Both a cutaneous squamous cell carcinoma and multiple epidermoid cysts were present in an 18-20-year-old, male, California Sea Lion (*Zalophus californianus*) that was euthanized due to severe, acute, necrotizing, fibrinopurulent bronchopneumonia. Histologically, nests, islands and fronds of neoplastic squamous epithelial cells were locally invasive into the underlying skeletal muscle, but distant sites of metastasis were not identified. The multiple epidermoid inclusion cysts appeared as a focal, cutaneous, cystic, intermandibular lesion.

Introduction

Cutaneous and subcutaneous neoplasms are infrequently described in pinnipeds. Neoplasms documented have included a presumptive apocrine gland adenocarcinoma in a California Sea Lion (*Zalophus californianus*) (Simpson & Gardner, 1972), a leiomyoma (Howard *et al.*, 1983) and a squamous cell carcinoma (Landy, 1980). A fibroma has been characterized in a grey seal (*Halichoerus grypus*), and an unspecified subcutaneous neoplasm in a Southern Elephant seal (*Mirounga leonina*) (Mawdesley-Thomas, 1974). A clinical case is reported documenting the presence of both a cutaneous squamous cell carcinoma and multiple epidermoid cysts in a California Sea Lion.

Case Report

An 18-20-year-old, male, California Sea Lion was repeatedly examined owing to anorexia, lethargy, salivation, dyspnea and dysphagia. Symptomatic oral therapy was unrewarding, and the animal was euthanized.

At necropsy, a 1 cm (diameter) cutaneous, firm, partially-ulcerated nodule was present over the right neck proximal to the shoulder. A second cutaneous lesion, a cystic mass, of unknown duration was present on the ventral aspect of the neck in the intermandibular region. The lungs were markedly congested;

the bronchi contained a mucopurulent exudate. Tissue samples were fixed in 10% buffered formalin, processed through paraffin wax blocks, sectioned at 4 µm and stained with haematoxylin and eosin.

Histologically, a diagnosis of severe, diffuse, acute, necrotizing, fibrinopurulent bronchopneumonia was made. This most likely induced the clinical signs reported. No significant lesions were present in examined sections of kidney, spleen, pancreas, liver, heart, small and large intestines.

The firm, cutaneous neck mass was composed of discrete to coalescing, variably-sized nests, islands and fronds of neoplastic squamous epithelial cells arranged in a concentric pattern (Fig. 1). Cells became progressively flattened toward the centre and surrounded laminated keratin pearls or keratin debris. Neoplastic squamous epithelial cells were invasive into the underlying skeletal muscle. A mixed inflammatory infiltrate composed of neutrophils, macrophages, lymphocytes and occasional plasma cells was admixed between neoplastic islands, nests and fronds. A diagnosis of locally invasive squamous cell carcinoma was made.

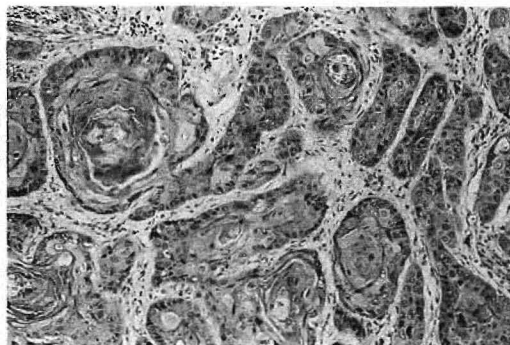


Figure 1. Cutaneous neck mass composed of discrete to coalescing nests, fronds and islands of neoplastic squamous epithelial cells. Some neoplastic aggregates surround laminated keratin pearls.



Figure 2. Intermandibular mass composed of cyst-like structures lined by a flattened squamous epithelium and containing keratin and debris.

Histologically, the intermandibular cystic mass was composed of multiple cyst-like structures lined by a flattened squamous epithelium surrounded by a dense connective tissue stroma (Fig. 2). The cysts contained concentrically and irregularly laminated masses of keratin admixed with debris. Skin adnexae were not associated with the cyst wall. A diagnosis of multiple, epidermoid cysts was made.

Discussion

In captive pinnipeds, the most common skin lesions include traumatic wounds, bacterial folliculitis with pustular dermatitis, seal pox, dermodicosis and pediculosis (Lewis, 1987). Less frequently, mycotic infections and cutaneous mycobacteriosis are noted (Lewis, 1987).

Cutaneous and subcutaneous neoplasms are infrequently reported in both Sea Lions and seals. Previously described tumours in California Sea Lions have included an apocrine gland adenocarcinoma (Simpson & Gardner, 1972), a squamous cell carcinoma (Landy, 1980) and a leiomyoma (Howard *et al.*, 1983). A fibroma has been described in a Gray seal, and an unspecified subcutaneous neoplasm has been reported in a Southern Elephant seal (Mawdesley-Thomas, 1974). A metastatic squamous cell carcinoma within the kidney, lungs, liver, ovary and lymph nodes has recently been described in a California Sea Lion (Joseph *et al.*, 1986). The primary site was not identified.

The etiology of squamous cell carcinoma can include factors such as ultraviolet light, various chemical carcinogens, chronic infections, burns, and immunosuppressive drug therapy (Muller *et al.*, 1989; Lever & Schaumberg-Lever, 1983). Rarely,

squamous cell carcinomas arise from persistent, keratinizing cysts (Lever & Schaumberg-Lever, 1983; Mehregan, 1986; Yager and Scott, 1985). In the Sea Lion reported herein, there was no histopathological evidence to suggest that the squamous cell carcinoma had arisen from the epidermoid cysts.

Epidermoid cysts are common in the dog, less common in the cat (Muller *et al.*, 1989) and rare in the larger domestic animal species (Scott, 1988). To our knowledge, such a lesion has not been previously characterized in a pinniped.

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