Meibomian carcinoma in a cow

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SUMMARY

Meibomian carcinoma is a malignant and rare tumour in cows. This report describes the gross and histopathological findings, the surgical treatment and the clinical follow up of a meibomian carcinoma in a 5 years old Holstein cow.

Keywords: Cow, Meibomius glands, Meibomian carcinoma, sebaceous glands, eyelid, surgical treatment, follow up.

RÉSUMÉ

Carcinome des glandes de Meibomius chez une vache

Le carcinome des glandes de Meibomius est une tumeur maligne, rare chez la vache. Ce rapport décrit les caractéristiques morphologiques et histopathologiques d’un carcinome des glandes de Meibomius observé chez une vache Holstein de 5 ans ainsi que le traitement chirurgical et le suivi clinique de ce cas.

Mots clés : Vache, glandes de Meibomius, carcinome des glandes de Meibomius, glandes sébacées, paupière, traitement chirurgical, suivi.

Introduction

Meibomian glands (tarsal glands) are located on the inner aspect of the eyelid and they are modified sebaceous glands. Sebaceous glands occur throughout the skin in association with hair follicles [1]. Malignant change of Meibomian glands is rarely compared with sebaceous glands in other parts of the body [9, 12]. Meibomian carcinoma is a malignant, slow growing, infiltrative and rare tumour in the tarsal part of the eyelids in all species [3, 9, 10]. It exhibits aggressive local destruction with local reoccurrence following incomplete excision and can metastasize via the lymphatic vessels to regional lymph nodes and distant organs [3, 8]. Approximately 75% of sebaceous gland carcinomas are reported from the periocular region in human being. Sebaceous gland carcinoma in this region represents 1-5.5% of eyelid malignancies in USA, whereas it is the second most common periocular tumour (33% of eyelid malignancies) after basal cell carcinoma in a large retrospective series from China [4, 8]. While incidence of meibomian tumours increases with the age in dogs, the particular tumours are uncommon in other species and there is no known sex predilection in animals [3].

Case report

A 5 years old Holstein cow was presented to the University of Adnan Menderes Veterinary Teaching Hospital because of ocular nodule located on the right lower eyelid. The nodule was excised radically and was full thickness excision. The wounds were dressed with cotton gauze soaked in strong tincture of Rivanol on alternate days. The excision was closed with simple interrupted sutures using a silk thread (O Silk, Ethion, Inc, Semer Ville, NJ, USA). Daily treatment with penicillin-streptomycin (4 mL /100 kg) was continued for 1 week. After the animal was discharged, the follow-up was carried out by owner or referring veterinarian. Telephone follow up was obtained at 6 and 12 months after the excision. The owner reported that no recurrence had developed. The lesion had no surrounding induration, no ulceration and without vascularisation.

White and slightly nodule on the right lower eyelid measured 4.0 x 2.5 x 1.5 cm³, weighed 5.95g, and was reddish-white in colour and hard to touch. The cut surface of mass was homogeneously and greyish-white in colour. There was no clinical evidence of any metastasis. After operation, the ocular nodule was subjected to histopathological examination. The tissue samples were fixed in 10% formalin solution, processed routinely, 5 µm sectioned, and stained with haematoxylin and eosin. Furthermore, the sections were stained by Oil Red O staining for lipid [7]. Microscopic examination of the tumour mass revealed Meibomian carcinoma. Tumour exhibited circumscribed lobules and little evidence of stroma invasion was seen. Adenoid arrangement of tumour cells was occasionally observed in this case (figure 1). Tumour cells showed variable degrees of sebaceous differentiation and focally squamous differentiation with keratinisation but cytological atypia was prominent feature (figure 2). They were characterized by round to oval and varied in size, prominent and hypochromatic nuclei and scant cytoplasm. In some part of the tumour, large cells with abundant vacuolated cytoplasm were seen. In the frozen sections of the tumour nodule, lipid laden cells were demonstrated with the oil red-O stain (figure 3). Mitotic figures were uncommon. In some areas, extensive infiltrations of the tumour cells with a break up of the lobules to stroma were observed. Tumour stroma consisted of strong connective tissue and collagen bundles (some of which were hyalinised) and sometimes also included mononuclear cell infiltrations especially in around lobular tumour areas.
Discussion

Meibomian tumours are common in dogs with no sexual predisposition when compared to other domestic animal species [3]. The tumour in this case was occurred in a cow. Most sebaceous tumours arise from the Meibomian glands. They occur most frequently on the upper lids in humans [1]. It was reported that Meibomian carcinomas were seen in 63% on the upper eyelid, 27% on the lower eyelid, and 5% diffusely involving both eyelids in humans [6]. However, the tumour described here was on the lower eyelid.

Complete surgical excision can be curative for Meibomian carcinoma and histopathological examination is critical for diagnosis of Meibomian carcinoma [5]. In this case, surgical excision was performed for treatment and the ocular nodule was subjected to histopathological examination for diagnosis. There are four histopathological patterns in the sebaceous carcinoma; lobular, comedocarcinoma, papillary and mixed. The lobular pattern occurs most frequently with less differentiated cells located peripherally, and better differentiated, lipid-producing cells located centrally [8]. Histologically, the diagnosis of sebaceous carcinoma may be difficult, because it may be confused with basal cell or squamous cell carcinoma [11]. The presence of lipid in sebaceous neoplasms can be demonstrated with the oil red-O stain [2]. In the present case, all the sections showed virtually same pattern as lobular pattern together with squamous differentiations in some areas and in the frozen sections and lipid laden cells were demonstrated with the oil red-O stain. Based on these histopathological features, the present case was diagnosed as Meibomian carcinoma.

References


