Case Report

CUTANEOUS FIBROSARCOMA IN A BARBARI GOAT

R. Kavin*[1], A. Velavan [2], N. Pazhanivel [3], Kaavya Sudhakar[1] and P. Kowshalya[1]

Department of Veterinary Surgery and Radiology
Madras Veterinary College
Tamil Nadu Veterinary and Animal Sciences University
Chennai, Tamil Nadu, India

ABSTRACT

Cutaneous tumors are commonly noticed in small and large ruminants, but fibrosarcoma in skin and subcutaneous tissue is a rare finding. This might be one of few case reports of cutaneous fibrosarcoma in goats. A three-year old, female goat was presented with a history of progressive growth at the base of the horn in frontal region, noticed over a period of one month of duration. Physical examination revealed presence of a solitary mass (9.0 cm×7.2 cm×1.8 cm) at the base of the right horn extended to inter-horn space medially and forehead cranially. Survey radiograph revealed no pulmonary metastasis. Histopathology of excised tumor mass confirmed as fibrosarcoma. The goat had a recurrence of fibrosarcoma within three weeks from initial excision.

Key Words: Barbari goat, Cutaneous fibrosarcoma, Progressive growth, Surgical excision, Tumor recurrence

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INTRODUCTION

Cutaneous, and subcutaneous tumors are commonly noticed in domestic animals (Goldschmidt and Hendrick, 2002), but fibrosarcoma is one of the rarest findings in ruminants (Ramakrishna *et al*., 1980). Until now there have been only very few case reports available on the incidence of fibrosarcoma in small ruminants. A 40 year survey of Bastianello (1983) between 1935 and 1974 did not report any incidence of fibrosarcoma in goats. A single case of fibrosarcoma in the udder of a goat (Ahmed and Hassanein, 2012) and dermal fibrosarcoma on the outside ear pinna in a Cashmere goat (Schoiswohl *et al*., 2019) were among the few reports available in small ruminants. Fibrosarcoma was recorded in oral cavity (Burgstaller *et al*., 2017), facial region (Britt *et al*., 1998), ear pinna (Gasteiner *et al*., 1998), hoof (Chakraborty *et al*., 1989), pelvic cavity (Ramakrishna *et al*., 1980) and congenital in a calf (Damodaran *et al*., 1974) in bovines. The present paper reports on the

* Corresponding author; email: kavinlkk@gmail.com
[1] Postgraduate scholar
[2] Assistant Professor
[3] Professor, Department of Veterinary Pathology

occurrence of fibrosarcoma at the base of the horn in a three year old Barbari goat and its surgical management.

Case history

A three year old, female Barbari goat was presented to Large Animal Clinics-Surgery Out-Patient Unit- Madras Veterinary College Teaching Hospital, Chennai, India with a history of progressive swelling noticed at the forehead over a period of one month duration. The goat was not vaccinated against any of the infectious diseases and no trauma was reported at the growth site as per owner information.

Clinical observations

Physical examination revealed, the animal was bright, alert and responsive. The vital parameters such as heart rate, respiratory rate, pulse rate and body temperature were within normal range. A firm growth was detected at the base of the right horn and extended medially into the space between the two horns and cranially to the forehead with the measurements of 9.0 cm×7.2 cm×1.8 cm (Fig. 1 and 2). Macroscopically, the mass was irregularly solitary and fibrotic in consistency, ulcerated and grayish white with red in color. Haemorrhages were also seen. The animal evinced moderate pain on palpation. Survey radiograph of skull/thorax was inconclusive with no pulmonary metastatic lesions. Haemato-biochemical parameters were within the clinical range. Hence it was decided to remove the tumor surgically and sent for histopathological examination in 10 per cent neutral buffered formalin.

Patient preparation

The goat was fasted 24 hours for feed and 6 hours for water. Preoperatively Inj. Ceftriaxone @ 20 mg/kg, I/V and Inj. Meloxicam @ 0.5 mg/kg, I/V was administered 30 minutes prior to surgery. The tumor site was prepared aseptically. The goat was premedicated with Inj.Xylazine @ 0.05mg/kg, I/V, Inj. Butorphanol @ 0.2 mg/kg, I/V and Inj. Midazolam @ 0.2 mg/kg, I/V. Anaesthesia was induced with Inj. Propofol titrated to effect and maintained with the same, throughout the procedure.

Surgical excision

Using unipolar electrocautery, the tumor was resected from the base and bleeding was arrested appropriately. The excised mass was sent to Department of Veterinary Pathology, Madras Veterinary College for histopathological study.

Post-operative period

Post-operatively, the animal was maintained on parenteral antibiotics and analgesics and regular wound dressing was carried out. Three weeks after surgery, the goat was presented with recurrent growth of the same size at the same location resected earlier (Fig. 3).

Microscopic examination of the tumor mass with hemotoxylin and eosin stain revealed irregular bundles of pleomorphic immature fibroblasts with variable amount

of collagen fibres. The neoplastic cells were fusiform to ovoid and consisting elongated to oval hyperchromatic nuclei with single to multiple prominent nucleoli and scanty cytoplasm. Mitotic figures and poorly formed blood vessels with haemorrhage were seen as in high grade tumor (Fig. 4). Immunohistochemistry using vimentin revealed positive cytoplasmic brown reaction which is indicative of fibrocytic origin.

Due to high rate tumor recurrence and Due to high rate tumor recurrence and considering the type of tumor, prognosis was conveyed to the owner. As a follow up, after two weeks we received news that the animal was disposed and buried by the owner.

Discussion

Fibrosarcomas are malignant tumors arising from connective tissue due to rapid proliferation of fibroblasts. It usually occurs as solitary masses with the consistency varying from fleshy or flat to myxoid depending on the size of the tumor (Valentine, 2004). Even though it can occur in any animal, commonly noticed in old cats and dogs (Goldschmidt and Hendrick, 2002) and very few reported cases in ruminants. Frequently observed locations in animals are skin or subcutaneous sites or a combination of both (Schoiswohl *et al*., 2019). Cutaneous tumors are comparatively higher in female animals than males, with the incidence rates of 56.5% and 43.5% respectively (Goldschmidt and Hendrick, 2002) and frequently between 3 and 6 years of age (Ahmed and Hassanein, 2012). This study correlates with our case report and also in relation with young age group. Rate of metastasis is expected to be higher in dogs and cats than in ruminants with increased risk of recurrence (Kessler, 2012), but data on metastasis in ruminants is still unclear (Schoiswohl *et al*., 2019). The present case reported no metastasis.

Clinical signs are variable depending on location and size of the tumor, etiopathogenesis, age, species, and rate of metastasis and involvement of local/adjacent lymph nodes of affected animals. Bildfell *et al*. (2002) conducted survey on caprine cutaneous vasoproliferative diseases and found no significant predilection related to location of tumor, sex, breed and species involved. The present case was a white coated Barbari goat; this is in accordance with Valentine (2004), who stated white haired goats are predisposed to skin tumors.

Fine needle aspiration cytology is found to be inadequate and might lead to wrong results (Goldschmidt and Goldschmidt, 2016) and surgical excision of tumor followed by histopathological study is recommended and considered as confirmatory diagnosis for fibrosarcomas (Ahmed and Hassanein, 2012; Schmid *et al*., 2010). The histological features observed in the present case are in agreement with Goldschmidt and Hendrick (2002).

The surgical excision of tumor is the recommended treatment for fibrosarcoma, but in cases where surgical excision is impractical and metastasis is involved, euthanasia is opted (Ahmed and Hassanein, 2012). Recurrence was observed in this case.

Fig. 1. Tumor mass on the base of horn

Fig. 2. Tumor mass on the base of the horn (9.0*7.2*1.8cm)

Fig. 3. Post-operative recurrence of tumor at the same size and same location

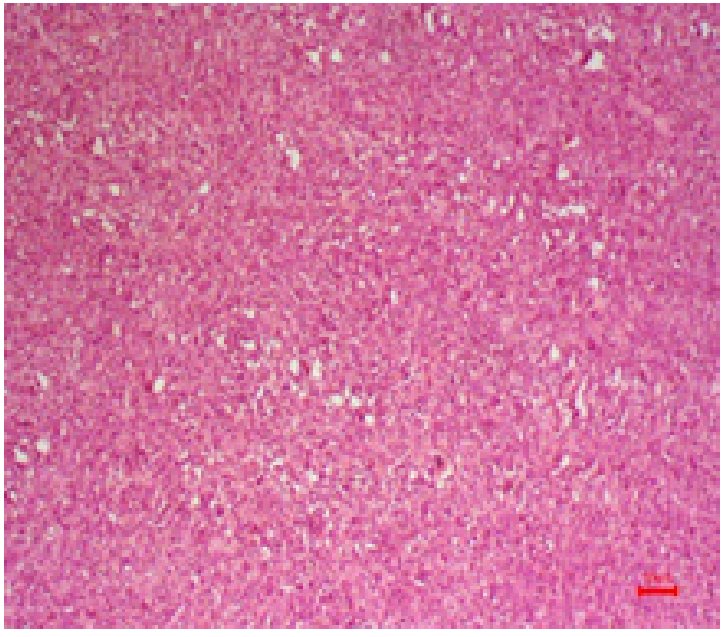

Fig. 4. Irregular bundles of pleomorphic immature fibroblasts with variable amount of collagen (Scale bar- H&E *20 micron)

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