Case Report

SURGICAL REMOVAL OF CONGENITAL EN MASSE EXTERNAL OBLIQUE ABDOMINIS RHABDOMYOMA IN CROSSBRED JERSEY COW

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ABSTRACT

A five year old crossbred Jersey cow was presented to the Veterinary Clinical Complex, Veterinary College and Research Institute, Salem with a history of progressive weight loss, anorexia, and a large mass in the left abdominal region since birth. Clinical examination revealed a 30 cm diameter ulcerated, solid mass on the left lateral abdomen, extending from the ninth to the thirteenth rib. The mass was firm on palpation with localized inflammation and evidence of chronic tissue degeneration. Surgical excision was performed under multimodal anaesthesia with but orphanol and ketamine, combined with 2 % lignocaine as local infiltration. The surgical site was prepared aseptically and the mass was excised en masse using standard surgical technique. Haemostasis was achieved effectively and the wound was closed with non-absorbable sutures. Histopathological examination of the excised tissue confirmed the diagnosis of a rhabdomyoma. Postoperative care included daily wound dressing, systemic antibiotics and anti-inflammatory therapy for three days. The cow exhibited an uneventful recovery, with complete healing and no recurrence observed one year after recovery. This case highlights the importance of diagnosis and surgical intervention for managing large abdominal neoplasms in cattle.

Keywords: Progessive weight loss, abdominal mass, Rhabdomyoma, Surgical excision

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INTRODUCTION

Rhabdomyoma is a rare benign neoplasms arising from striated muscle and is classified into cardiac and extra cardiac forms. Cardiac rhabdomyomas are more commonly encountered than extracardiac forms in animals (Ramirez Romero and Ramirez Hernandez, 2015). In humans, extra cardiac rhabdomyomas are classified into three distinct types such as adult, fetal and genital forms. However, only the adult type has been reported in dogs (Hulland, 1990). Clinically, these tumours usually present as slow growing masses and may cause clinical signs depending on their size and anatomical location. Histopathological examination remains the gold standard for definitive diagnosis. Complete surgical excision is considered the treatment of choice for localized lesions, although radiotherapy and chemotherapy may be employed in selected cases (Meuten, 2017). Present report describes the successful surgical management of an external oblique abdominis rhabdomyoma in a crossbred Jersey cow.

CASE HISTORY

A five-year-old crossbred Jersey cow was presented to the Veterinary Clinical Complex, Veterinary College and Research Institute, Salem, with a history of anorexia, progressive weight loss and gradual enlargement of a mass over the left lateral abdominal region since birth. On clinical examination, a large ulcerated, firm and semisolid mass measuring approximately 30 cm in diameter was observed on the left lateral abdominal wall extending from the ninth to thirteenth rib (Fig.1). The mass was hard on palpation with evidence of ulceration and localized inflammation. The vital parameters, including rectal temperature, heart rate and respiratory rate, were within normal physiological limits. Haematological and serum biochemical analyses revealed values within the normal reference range. Fine needle aspiration cytology revealed numerous erythrocytes and multinucleated elongated cells suggestive of a mesenchymal neoplasm.

SURGICAL MANAGEMENT

The animal was restrained in right lateral recumbency. Surgical excision was performed under multimodal anaesthesia comprising premedication with 0.02 m/kg body weight (IM) and ketamine hydrochloride 0.1mg /kg body weight (IM), along with local infiltration of 2% lignocaine hydrochloride around the tumour. Following aseptic preparation and draping, an elliptical skin incision was made around the tumour maintaining a free surgical margin of approximately 2.5 cm (Fig.3). The tumour mass was carefully dissected from the surrounding tissues and excised en masse. Haemostasis was achieved by ligation of bleeding vessels. The subcutaneous tissue was apposed using no.2 chromic catgut, whereas the skin was closed routinely using non-absorbable sutures. Postoperatively, inj. Streptopenicillin (2.5 g, IM) and inj. Meloxicam (0.25 mg/kg body weight, IM) were administered for three days. Daily wound dressing was performed using 5% povidone iodine solution.

The excised tumour weighed approximately 4.2 kg, firm in consistency. Grossly, the mass was well circumscribed and measured approximately 30 cm in diameter. The cut surface was grayish white in colour, homogeneous and elastic in consistency with a widespread area of central necrosis. Representative tissue samples were fixed in 10% neutral buffered formalin and processed routinely for histopathological examination. Miceoscopically, the tumour consisted of sheets of large round to polygonal cells possessing abundant eosinophilic granular cytoplasm (Fig. 4). Multiple peripherally located nuclei were observed in many cells (Fig.5). Occasional loosely arranged polygonal cells and areas of haemorrhage between muscle bundles were also evident (Fig.6). Based on these characteristic histopathological features, the tumour was diagnosed as rhabdomyoma.

DISCUSSION

Rhabdomyoma is a rare benign neoplasm arising from striated muscle and is infrequently encountered in domestic animals (Hulland, 1990). In cattle, reports of rhabdomyogenic tumours are scarce, with most documented cases representing malignant rhabdomyosarcomas rather than benign rhabdomyomas (Matsui *et al.,* 1991) described an undifferentiated alveolar rhabdomyosarcoma in a Holstein cow with extensive metastasis to abdominal and thoracic organs, whereas Jimma *et al.,* 1999 reported a differentiated embryonal rhabdomyosarcoma originating from the pleura of a cow. In contrast, the present case involved a localized mass arising from the external oblique abdominis muscle without evidence of local invasion or metastasis, supporting its benign nature. Grossly, the tumour in the present case appeared as a well circumscribed, greyish white, homogeneous and firm mass. Similar gross characteristics, including a greyish white appearance and areas of central degeneration, have been reported in bovine rhabdomyosarcomas (Jimma *et al.*, 1999). Histopathological examination remains the cornerstone for the definitive diagnosis of rhabdomyogenictumours. The tumour in the present case consisted of well differentiated rhabdomyocytes with abundant eosinophilic cytoplasm arranged in interlacing bundles. The presence of characteristic spider cells, considered pathognomonic for rhabdomyoma, further substantiated the diagnosis (Ramirez Romero and Ramirez Hernandez 2015). Similarly emphasized the diagnostic significance of spider cells in bovine cardiac rhabdomyoma.Unlike rhabdomyosarcoma, which exhibits marked cellular pleomorphism, frequent mitotic figures and infiltrative growth patterns (Matsui *et al.,* 1991 and Jimma *et al*., 1999), the present tumour showed minimal atypia and absence of metastatic spread, confirming its benign biological behaviour. Complete surgical excision was successfully performed, and no recurrence was observed during the period of one year, indicating that surgical removal is curative and carries an excellent prognosis in cases of localized rhabdomyoma.

CONCLUSION

The present report highlights the successful surgical management of a rare case of congenital external oblique abdominis rhabdomyoma in a crossbred Jersey cow. Complete surgical excision followed by histopathological confirmation resulted in a favourable clinical outcome without recurrence, emphasizing the importance of surgical intervention and microscopic evaluation in the diagnosis and management of such rare muscular neoplasms.

Fig.1. 30 cm diameter ulcerated, semi solid mass on the left lateral abdominal region extending from 9th to 13th rib

Fig.2. Wound site after surgical excision

Fig.3.Surgically excised semi solid mass of 4.2 kg with 2.5 cm free margin

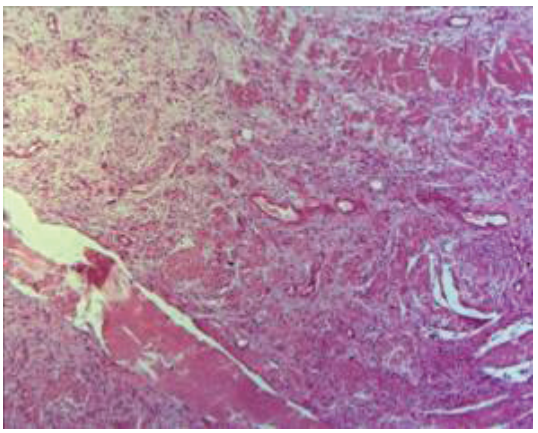

Fig.4. Sheets of large cells round to polygonal with abundant eosinophilic granular material

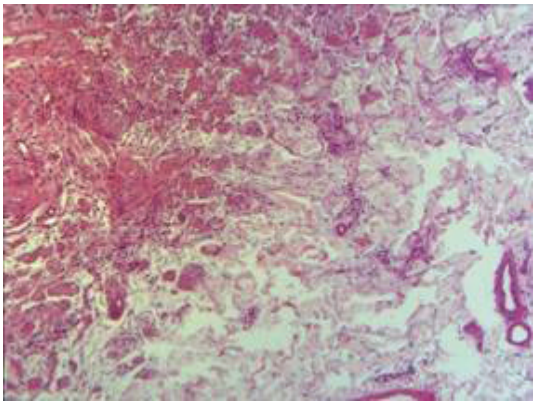

Fig.5. Multiple peripherally located nuclei

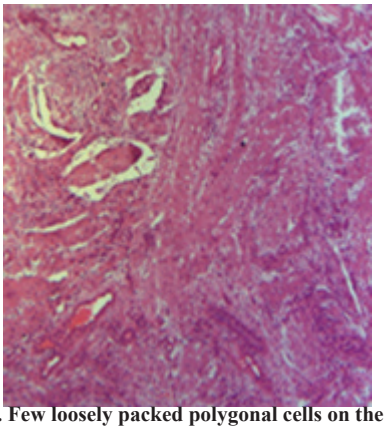

Fig.6. Few loosely packed polygonal cells on the right lower side and haemorrhages between the muscle bundle on the left lower side

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