Vaginal Leiomyoma in a Jersey Crossbred Cow

M. Selvaraju, S. Manokaran, M. Palanisamy, R. Ezakial Napolean, K. Ravikumar, V. Prabaharan and G.A. Balasubramaniam

Department of Animal Reproduction, Gynaecology and Obstetrics, Veterinary College and Research Institute, Tamil Nadu Veterinary and Animal Sciences University, Namakkal – 637 002, Tamil Nadu State, India.

Abstract: *This report documents a rare case of vaginal leiomyoma in a two month pregnant Jersey crossbred cow diagnosed based on the macroscopical and histopathological study. The tumor mass was surgically excised. There was no recurrence and the cow calved normally at the end of gestation. The tumor reported here was considered benign because on histopathology there was lack of clear pleomorphism, invasiveness, multinuclear giant cells and atypia, and low mitotic activity.*

Keywords*: tumor, vaginal leiomyoma, Jersey crossbred, reproductive tract, histopathology*

INTRODUCTION

Leiomyoma, histopathologically classified as mesenchymal tumor, is a benign neoplasia of smooth muscle. Leiomyomas of the genitalia occur far more frequently in females than males, and they are among the most commonly encountered tumors of the female reproductive system in almost all domestic species (Sharma *et al*., 2011).

In an abattoir study, leiomyomas were found to have a low frequency of occurrence as they represented only 1% to 2% of all neoplasia in sheep, cattle, and pigs (Berezowski, 2002). There have been few clinical reports of this neoplasm in cow (Ramadan *et al*., 1993 and Sendag *et al*., 2008). Considering its rarity, the present report records a vaginal leiomyoma and its successful treatment in a Jersey crossbred cow.

CASE DESCRIPTION

A five year old Jersey crossbred cow on its second lactation was admitted to Veterinary College and Research Institute hospital with the history of vaginal out growth protruding through vulva for the past 15 days. The cow was treated locally for one week and referred. The animal calved four months back and was inseminated 2 months back. The general clinical examination revealed temperature of 38.6ºC, respiration rate of 29/min. and pulse rate of 72/min. The cow evinced mild straining during urination and the urine was blood mixed. Per rectal examination confirmed that the animal was pregnant about 2 months. The examination of the vagina revealed a round, encapsulated, nodular vaginal mass of approximately 12 cm diameter with a well defined neck attached to the left lateral wall of caudal vagina (Figure 1).

Fig.1. Nodular Vaginal Mass with a well defined neck attached to the left lateral wall of caudal end

The mass was hard and firm to touch and was continuously bleeding. Based on the history and clinical examination it was tentatively diagnosed as vaginal tumor and was decided to surgically excise the tumor.

TREATMENT AND DISCUSSION

The animal was restrained in trevis in standing position and epidural anesthesia was given with 3 ml of 2% lignocaine hydrochloride solution. The mass was washed with 1% potassium permanganate solution. The mass was retracted outside and applied with clamp using artery forceps on the caudal aspect of the mass. To control bleeding during surgery, tourniquet was applied using silk thread at the farthest end of the mass. The major blood vessels were ligated. The tumor mass was surgically excised using BP blade between the clamp and tourniquet and the non-absorbable material also removed. The vaginal wall was sutured by continuous lock suture using chromic catgut No.2. The mass was fixed in 10% formal saline and sent for histopathological examination. Post operatively the animal was administered with inj. DNS - 3 liters I/V, inj. streptopenicillin - 5 g I/M, inj. chlorpheniramine maleate - 300 mg I/M and inj. meloxicam – 150 mg I/V. The antibiotic, antihistamine and anti-inflammatory drugs were continued for 3 days and then the animal was discharged.

The hematoxylin and eosin staining of the sections of the mass revealed whorls and bundles of spindle shaped cells that have regular nuclei and acidophilic cytoplasm which confirmed it as leiomyoma (Figure 2).

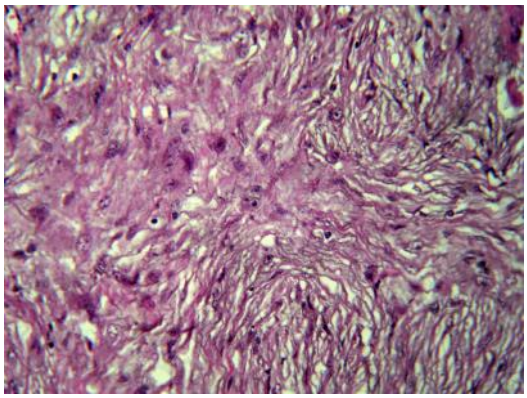

Fig.2. Whorls and bundles of spindle shaped cells H&E 400X

To differentiate it from fibroma, Van Gieson staining was done which was negative for leiomyoma. Hence it was finally confirmed as leiomyoma of vagina.

Leiomyomas of the genitalia occur far more frequently in females than males (Meuten, 2002). The etiology of the leiomyoma of reproductive tract is not known (Sendag *et al*., 2008).

Macroscopically, leiomyoma can reach up to 10–12 cm in diameter without being invasive. Initially, when the tumor is small it has a fleshy consistency which becomes firm or even hard as it develops due to stromal connective tissue (Meuten, 2002). In most cases, the leiomyoma projects like a nodular tumor into the uterine, vaginal or cervical lumen (Kennedy and Miller, 1993). Grossly they are expansive tumors but not invasive. Leiomyoma of vagina may interfere with reproductive function. If large enough they may obstruct vaginal passage (Musal *et al*., 2007). The most common clinical sign of vulvar, vaginal and cervical leiomyoma is protruding mass and blood discharge. There is no evidence that the leiomyoma within female reproductive tract have a hormonal basis (Meuten, 2002). Leiomyomas are benign tumors

which are non-invasive and do not metastasize.

Microscopically leiomyomas consists of plain muscle bundles arranged in all directions. The muscle fibres are spindle shaped with centrally located nucleus running parallel in all directions (Kennedy and Miller, 1993). It consists of neoplastic cells of smooth muscle differentiation accompanied by varying quantities of connective tissue and lacks a glandular component (Sharma *et al*., 2011). The mitotic figures are lacking in leiomyoma because it is benign tumor. In the present case the Van Gieson staining was done to differentiate between leiomyoma and fibroma. In fibroma the collagen deposition would be predominant whereas it would be lacking in leiomyoma. Here also the lack of collagen was observed in Van Gieson staining which confirmed the diagnosis of the case as leiomyoma. The histopathological confirmation is the gold standard of diagnosis and also beneficial to rule out any possible focus of malignancy (Chakrabarti *et al*., 2011).

In the present case a presumptive diagnosis of leiomyoma was made based on the macroscopic appearance of the tumor. The diagnosis was confirmed by hematoxylin and eosin stain and Van Gieson staining. After surgical excision the cow was continuously monitored. There was no recurrence noticed after the surgical excision and the cow calved normally at the end of gestation period.

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