Cervical leiomyofibroma in a jersey crossbred cow: A case report

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Abstract
A case of cervical leiomyofibroma in a 5 year old crossbred Jersey cow, an uncommon entity is described. The tumor mass was originated in the cervical rim and it was removed surgically, which weighed 24.5cm X 22.5 cm X 15cm in size and weighed 5.2 kg. The tumor was hard and firm, well circumscribed with encapsulation and it was whitish-yellow in color. The mass was diagnosed as leiomyofibroma. This tumor mass had no undesirable effects on parturition and subsequent fertility.

Keywords: Cattle, cervix, leiomyofibroma, parturition, tumor

1. Introduction
Genital tract tumors are more frequent in uterus and vulva and cervical tumors are often rare [1]. Leiomyoma, is classified as mesenchymal tumor, which is considered as benign neoplasia of smooth muscle. Occurrence of Leiomyomas is more frequently noticed in females than males [2]. Leiomyofibroma consist of a fusion of connective tissue and smooth muscle, and commonly have been reported in the reproductive tract of bitches and queens [3]. In the present case report records a case of cervical leiomyofibroma in a crossbred Jersey cow.

2. Case history and Observations
A five year old crossbred Jersey cow was presented to the Department of Veterinary Gynaecology and Obstetrics Teaching Hospital of the Tamil Nadu Veterinary and Animal Sciences University for assessment of huge mass protruding through the vulva at the time of stage of labor 18h previously. According to the anamnesis the prolapsed mass started to hang down at the second stage of labor 18h previously. Clinical examination revealed that the mass had a pedunculated origin arising from the ventral region of the cervical external os and it was confirmed the location as cervix uteri, since there is no association to the vaginal wall (Figure 1). The cow showed mild straining during urination. Blood samples were collected from the jugular vein and subjected to Haematological study as a presurgical assessment. The blood parameters were in the normal range.

3. Treatment
The animal was restrained and caudal epidural anesthesia was performed by administration of 5 ml of 2% Lignocaine Hydrochloride (Loxicard; 20 mg/ml; Neon, India). The perivulvar region was prepared for the surgery. Local infiltration of anesthesia was also performed on the cervical rim. After anesthesia the prolapsed mass was 1% potassium permanganate followed by scrubbing with 7% povidone iodine solution. An oblique incision was made around 12 cm and the tumor mass was separated and it was confirmed the origin arising from the ventral region of the cervical external os and it was confirmed the location as cervix uteri, since there is no association to the vaginal wall (Figure 1). The cow showed mild straining during urination. Blood samples were collected from the jugular vein and subjected to Haematological study as a presurgical assessment. The blood parameters were in the normal range.
4. Discussion

Macroscopically the tumor mass was 24.5 cm x 22.5 cm x 15 cm in size and weighed 5.2 kg. In addition to that, the mass was hard, well circumscribed whitish-yellow in color with encapsulation (Figure 2). An incision from periphery to centre was made on the excised mass and tissue section was fixed in 10% Neutral buffered formalin. The tissue was paraffin embedded sectioned at 4 µm, processed as per standard staining procedures for Haematoxylin and eosin. Microscopically tumor shows irregular arrangements of smooth muscle cells and fibrocytes running in different directions which confirmed it as leiomyofibroma H E 100x (Figure 2). Mitotic figures were rare. Pleomorphism and necrosis were also absent. The histopathological characteristics were suggestive of leiomyofibroma and set apart for other benign spindle cell mesenchymal neoplasm. Leiomyofibromas are also referred as leiomyomas, fibromyomas, myomas, fibroids and leiomyofibromatoses, are unusual nature of leiomyoma, and also have a momentous fibrous component [3]. If the smooth muscle separation is evident, then the term leiomyoma is more appropriate [3, 4]. Some researchers had dispute that an admixture of smooth muscle, collagen, and fibroblastic cells, fibroleiomyoma must be used [3]. Recently, fibroleiomyoma has been widely used [5]. Estrogen is considered to be the major factor for development of leiomyofibroma [7]. Leiomyomas are the common reproductive neoplasm recorded in women and bitches, and estrogen hormone is vastly reliant in both species [8]. Because of increase concentration of estrogen hormone these cells are more reactive during pregnancy [9]. Hence, these cells may be more responsive to the increased concentrations of estrogens present during pregnancy but we cannot explain the reason why the tumor became highly enlarged especially in the last pregnancy. During parturition Cervical Neoplasm such as fibroma and leiomyoma can be mystified with vaginal prolapse [10].

Fig 1: Photograph showing tumor mass hanging through the vulva

5. Conclusion

In the present case was the tumor mass would have prolapsed out during the first stage of labor and hence it would have not obstructed the delivery of calf. However there were no undesirable effects of the neoplasm during pregnancy. A confirmative diagnosis of leiomyofibroma was made based on the hematoxylin and eosin staining. However after surgical intervention no recurrence of the neoplasm was noticed and the animal was successfully inseminated in the subsequent estrum.

6. Acknowledgment

The authors thank Dean, VCRI, Orathanadu and Director of Clinics, TANUVAS for the facilities provided.

7. References