

Anaplastic Vaginal Fibrosarcoma in a Cow

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Abstract

An eight-year-old Holstein Friesian cow was presented with a history of vaginal growth observed over a period of six months. Clinical examination revealed a tumour like mass attached to the left lateral vaginal wall which partly protruded out from the vagina. Macroscopically, the growth was poorly demarcated, circumscribed and firm in consistency. Haematological examinations indicated only leucocytosis. The growth was surgically removed under epidural anaesthesia. Microscopically, the growth showed bundles of highly anaplastic neoplastic fibroblasts running in different directions. In some areas, interwoven bundles of fibroblasts were noticed. Based on the macroscopic and microscopic characteristics, the growth was diagnosed as an anaplastic fibrosarcoma.

Key words: Vaginal fibrosarcoma, Cow

Fibrosarcomas have been reported as mushroom-shaped growths, commonly protruding out from the vulva (Musal *et al.*, 2007). Usually they do not cause infertility but may be connected with dystocia (Noakes, 1996) and dysurea (Watanabe *et al.*, 2002). They can be found in any location of the body. However, they are uncommon tumours of the cow vagina (Moulton, 1990). But the highest culling rate due to metastases to the other organs predominantly lungs, liver and lymph nodes is high (Yeruham *et al.*, 1999; Musal *et al.*, *loc. cit.*; Hamali and Ashrafihelan, 2010).

Materials and Methods

An 8-year-old Holstein Friesian cow was admitted with the history of vaginal swelling observed over a period of six months. The animal was active with normal appetite and ten months

back gave birth to a calf. Vaginal examination revealed a tumour mass on the left vaginal roof which partially protruded out from the vagina (Fig. 1). The uterus, cervix and other areas of vagina showed no palpable growth. On palpation, it was hard in consistency and depicted lobulations. The general physical examination revealed no other abnormalities. Blood sample was collected and submitted for haematological parameters.

For surgical resection of tumour, the animal was restrained and tail bandaged. Local epidural anaesthesia was performed with the administration of 10 ml of 2% lignocaine. Supplementary local infiltration anaesthesia was administered within the vaginal mucosa and neighbouring pedicle of the mass with 10 ml of 2% lignocaine. The tumour mass was excised out from the vagina and the surgical wound was sutured with No.1 cotton thread in simple interrupted pattern. Post operatively the animal was treated with 0.5mg/kg Meloxicam and 10mg/kg Ceftriaxone intravenously for three days. On seventh day the suture was removed and the animal recovered uneventfully.

The samples of tissue fixed in 10 % neutral buffered formalin solution and subjected for paraffin-embedding, sectioned at 4-5µ thickness and stained with haematoxylin and eosin stain. Duplicate sections were also stained with Masson trichrome stain for the differentiation of fibrous tissue from smooth muscle.

Results and Discussion

The tumour measured about 6cm x 4cm x 2cm, weighed around 20g and depicted nodular appearance. The cut surface was creamy white in colour (Fig.2). The haematological values were as follows: total WBC count $14.8 \times 10^3/\mu\text{L}$, RBC count $7.1 \times 10^6/\mu\text{L}$, Hemoglobin 9.7 g/dl and PCV 32%.

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Fig 1: Protrusion of tumour mass from the left vaginal wall.



Fig 2 : Multi nodular and creamy white appearance of removed tumour.

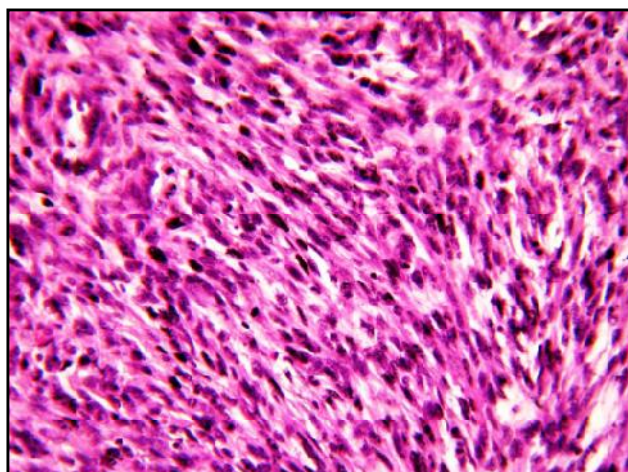


Fig 3: Photomicrograph depicting anaplastic fibroblasts with hyperchromatic nuclei (H&E x 400).

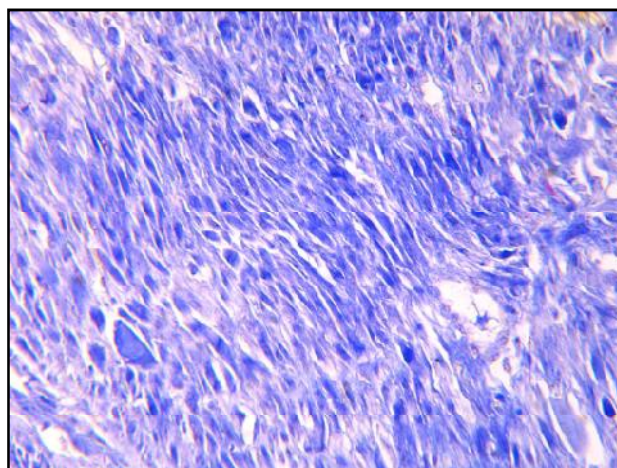


Fig 4: Photomicrograph revealing blue stained collagen deposits in the matrix and pleomorphic fibroblasts (Masson's trichrome x 400).

Microscopically, the growth showed bundles of highly anaplastic neoplastic fibroblasts running in different directions. In some areas, interwoven bundles of fibroblasts were noticed. There was a little amount of collagen but the dominating fibroblasts revealed marked cellular pleomorphism with hyperchromatic oval or round nuclei, eosinophilic cytoplasm (Fig. 3) and loss of polarity. The cell borders were ill defined. Many foci of necrosis and numerous ill formed blood vessels were also observed. Mitotic figures were common and the mean mitotic index was 15 to 20. The Masson trichrome stained sections revealed blue coloured collagen fibres in the stroma of the tumour (Fig. 4).

Fibrosarcoma may appear as well differentiated and poorly differentiated or highly anaplastic type. In well differentiated type, the tumour cells may resemble mature fibroblasts which secrete collagen with mitotic changes. Poorly differentiated tumors consist of more atypical cells, pleomorphic, multinucleated giant cells, numerous atypical mitoses and reduced collagen production (Hesaraki *et al.*, 2010). The present case was identified as highly anaplastic type with numerous mitotic figures indicating the severity of the tumour.

The Masson trichrome stained sections revealing blue stained collagen fibres that ruled out smooth muscle and proved the tumour as

fibrous in origin. Surgical removal of tumour was made in order to avoid the metastasis of the tumour. Since, no recurrence was noticed after four months of removal of the tumour, it may be concluded that early diagnosis followed by surgical removal of the tumour was beneficial.

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Influence of Supplementation of Fenugreek, Garlic and Black Pepper Powder on Intestinal Villi Length in Broilers

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Abstract

An experiment was conducted to study the effects of supplementation of fenugreek (*Trigonella foenum-graecum* L.), garlic (*Allium sativum*) and black pepper (*Piper nigrum*) powder supplementation on intestinal villi length of broiler chickens. There were 7 treatment groups: control, with no added fenugreek, garlic and black pepper powder; and 6 treatment groups receiving feed supplemented with different two levels of fenugreek, garlic and black pepper powder. Intestinal villi length was significantly higher in broiler chicken receiving feed supplemented with garlic powder both at 5g/Kg and 10

g/Kg diet.

Key words: Fenugreek, Garlic, Black pepper, intestinal villi

The broiler intestinal villi play a major role in absorbing the nutrients. Hence, the poultry nutritionists are adding phytoadditives in poultry diet to improve the intestinal villi length to facilitate better absorption of nutrients. In a broiler trial fed diet supplemented with garlic, fenugreek and black pepper, there was a significant increase in jejunal villous height, width and crypt depth when compared to control group (Kanduri *et al.*, 2013). Addition of 0.5 per cent black pepper to the diet increased the intestinal villi length and perimeter in small

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