

Surgical Management of a Rare Superficial Cutaneous Angiomyxoma in a Cow

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In veterinary medicine, angiomyxoma is extremely rare, with only a very few reported cases (Rizzo *et al.*, 2020). Angiomyxoma is a benign soft tissue tumour located in subcutaneous tissue, but with frequent infiltration of the dermis, characterized by the presence of prominent myxoid matrix and numerous thin-walled blood vessels (Balta *et al.*, 2019). The present report records a rare case of superficial cutaneous angiomyxoma in a 16 year old cow and its successful surgical management.

CASE HISTORY AND OBSERVATIONS

A pluriparous, 16 year old Jersey crossbred cow was presented to Veterinary Clinical Complex, Veterinary College and Research Institute, Theni, Tamil Nadu (India) with the history having a growth in the right flank region. The growth was insidious in onset and was slowly progressing for the past 6 months. Considering the age, the animal was not bred for a period of one and a half years and it was not culled for sentimental reasons. On clinical examination, a large, pedunculated, painless, firm, and ulcerated cutaneous mass in the right lateral region of lower abdomen was detected (Fig. 1). The mass was superficially ulcerated as a consequence of progressive growth of the mass and superficial trauma. The animal was having normal feeding habits and all the physiological parameters were within the normal limits. Based on the history and clinical examination the case was diagnosed as a cutaneous tumour. Surgical excision was decided upon and the animal was prepared for aseptic surgery.

TREATMENT AND DISCUSSION

The animal was sedated with xylazine HCl @ 0.1 mg/kg i/m and local infiltration anaesthesia was given with 10 mL of 2% lignocaine HCl. After development of anaesthesia, the site was prepared for aseptic surgery. An elliptical cutaneous incision was given around the base of the tumor mass. Using scissors, the pedunculated mass and cutaneous tissue were detached and complete surgical excision was performed along with the area of healthy cutaneous tissue. The mass appeared to be well circumscribed, without infiltration of the surrounding tissues of the abdominal wall. After surgical

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excision of the tumor mass, the bleeding was arrested using thermocautery and ligatures as the area was highly vascularised. The subcutaneous sutures were placed using No. 1 chromic catgut and the skin incision was closed by horizontal mattress sutures using 2-0 silk. Post-operatively the animal was given Ceftriaxone @ 10 mg/kg i/m for 5 days and Meloxicam 0.4 mg/kg intramuscular for 3 days. The cutaneous wound was dressed with Povidone iodine solution on alternate days and the sutures were removed on 10th post-operative day. The animal recovered uneventfully and there was no recurrence during the follow up period of six months.

On gross examination, the tumor mass had the dimension of 18x14x13 cm (Fig. 2). On cut section, the mass was grayish white, predominantly gelatinous, slimy and tinged with blood from haemorrhage in its central region (Fig. 3). The tissue sample preserved in 10% formalin, on histopathological examination revealed a loose proliferation of spindle-shaped stellate cells with hyperchromatic nuclei, immersed in an abundant amorphous myxoid matrix with numerous admixed thin-walled blood vessels. Mild anisocytosis, anisokaryosis, and cellular pleomorphism, and rare mitotic figures could be detected. A myxomatous extracellular matrix was positively stained with alcian blue. Multifocal, low to moderate infiltration of neutrophils and lymphocytes around



Fig. 1: Superficial cutaneous angiomyxoma in a cow



Fig. 2: Gross appearance of angiomyxoma

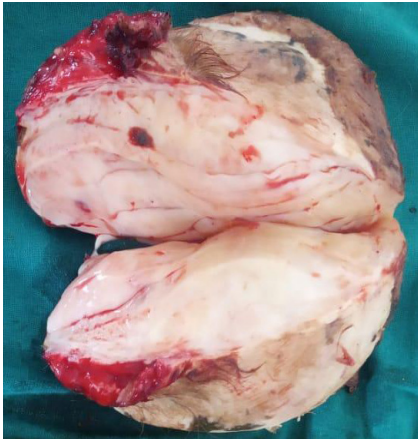


Fig. 3: Cut section of angiomyxoma

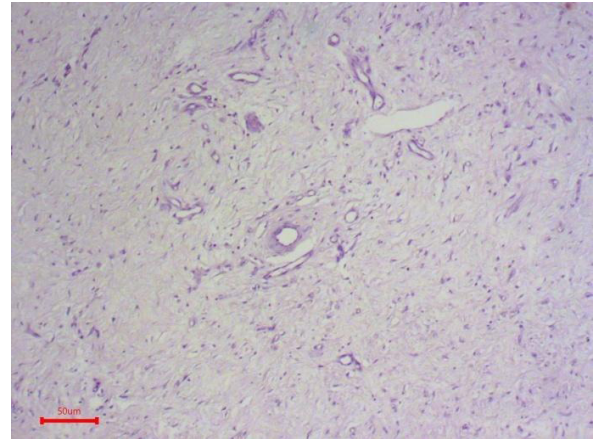


Fig. 4: Angiomyxoma- admixture of both angiomatoid and myxomatoid components. H&E, Scale Bar 50µm

the blood vessels interspersed between neoplastic cells were also detected. The pictures of histopathological examination were suggestive of angiomyxoma (Fig. 4).

Angiomyxoma is an extremely rare type of myxoid tumor in animals (Lee *et al.*, 2016). Angiomyxoma is a white-gray or haemorrhagic tumor usually present as superficial, painless, and slow-growing nodules (Calonje *et al.*, 1999). The angiomyxomas are generally benign tumors with a slow growth pattern characterized by the absence of metastasis and lack of nuclear pleomorphic or mitotic activity. Angiomyxomas are divided into two subtypes as superficial and aggressive (Fletcher, 2000). The term aggressive was introduced to emphasize the strongly invasive behaviour at the local level and the high risk of recurrence (Rizzo *et al.*, 2020; Lee *et al.*, 2016). Cytological smears of myxomatous tumours are often difficult to prepare because of the mucoid consistency of the tumour and poor cell adhesion to slides (Meuten, 2017).

Multilobular growth pattern, composed of spindle-shaped to stellate cells in a copious amount of myxoid stroma, neutrophilic infiltration with numerous small blood

vessels are the characteristic histopathologic features in superficial angiomyxoma (Balta *et al.*, 2019) as also observed in the present case. Neutrophilic infiltration not associated with necrosis is considered as a unique histologic feature of superficial angiomyxoma, distinguishing it from other lesions with a myxoid component and representing an important histologic clue for the differential diagnosis. The pathogenesis of neutrophilic infiltration remains unknown (Okada *et al.*, 2005). Although angiomyxoma is usually a slow growing tumour, an increased rate of growth during pregnancy has been described (Zangmo *et al.*, 2016; Rizzo *et al.*, 2020), which could be related to a hormone dependency (Orfanelli *et al.*, 2016). But, in the present case the growth of angiomyxoma was slow as the animal was not pregnant.

The treatment of choice is radical surgical excision of the tumor mass leaving healthy surgical margins. Incomplete excision of angiomyxoma will lead to recurrence due to infiltration tendency of the tumor into the surrounding soft tissues (Lee *et al.*, 2016). But in the present case, there was no post-excision recurrence after 6 months as the tumour

did not infiltrate into the surrounding tissues and the location of the tumor facilitated complete excision with safe margins of the tumour. To the best of the authors' knowledge, this is the first report of a superficial cutaneous angiomyxoma in a 16 year old non-pregnant cow and its successful complete surgical excision in the veterinary literature.

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