

## A RARE CASE OF CONGENITAL HAEMANGIOSARCOMA IN A STILL BORN CALF

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## SUMMARY

A third calving cross bred Holstein-Friesian cow was presented with the history of 260 days pregnancy, rupture of water bag 12 hrs prior to presentation and continuous straining. On vaginal examination, cervix was fully dilated, absence of fetal reflexes and postural (P3) abnormality with lateral deviation of head and neck. The posture of the foetus was corrected, the dam is relieved from difficulty and still born calf was delivered. The head region showed the disfigurement with a large ulcerated mass on the left lateral aspect. In addition, there were multiple, variable sized cutaneous solitary nodular like growth all over the body. Tissue pieces from the mass of head as well as from various cutaneous lesions were collected in 10% formalin and processed for histopathological examination. Microscopically, cutaneous lesions from various sites revealed the masses of various sizes and shapes composed of spindle-shaped cells lining small to large erythrocyte containing channels. The histopathological features confirmed the lesions as haemangiosarcoma. This case report describes a rare incidence of congenital haemangiosarcoma in a still born male cross bred HF calf.

**Keywords:** Cutaneous nodules, Endothelial cells, Haemangiosarcoma, Still born calf

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Hemangiosarcomas is a rapidly growing, highly invasive, uncontrolled growth of the cells lining blood vessels. Because of their abundant blood supply, the heart and spleen are the two most common sites where this type of tumor is found. This tumor is deadly as the predilection for this growth is blood-rich areas. Hemangiosarcomas can suddenly rupture, causing massive blood loss. Congenital neoplasia is rare in calves. Though various congenital tumors in calves were reported by earlier authors *viz.* malignant lymphoma (Hatzios, 1960), mesothelioma, papilloma and fibroma (Mulvihill and Priester, 1978), only one report of congenital haemangiosarcoma with multiple organ involvement was reported by Badylak (1983). This case report describes a rare incidence of congenital haemangiosarcoma with cutaneous nodules in a still born Holstein Friesian cross bred male calf.

A third calving HF cross bred cow was presented with the history of 260 days pregnancy, straining and rupture of water bag 12 hrs before presentation. Clinical examination was performed to assess the health condition of the dam. Vaginal examination was carried out to assess the position, posture and presentation of the foetus. Dystocia was relieved and a still born male calf was expelled by manual traction. Still born calf revealed multifocal cutaneous nodules and a large ulcerated mass in the head region. The gross morphology of the various skin nodules and the cut section of the masses were recorded. Tissue pieces from multiple skin lesions and mass from the head region were collected in 10% formalin and processed for histopathological examination. The tissue samples were processed by paraffin embedding technique and 4

micron thickness tissue sections were stained by routine haematoxylin and eosin (Bancroft and Gamble, 2006).

On clinical examination, the cow was dull, depressed with straining and relaxed vulva lips. The haemogram showed anaemic picture (Hb-7g/dl; PCV-20% and RBC- $4.28 \times 10^6$ /cu.mm) and leucopenia ( $3.64 \times 10^3$ /cu.mm). The serum profile was almost normal except mild decline in total protein (5.7 g/dl) and calcium (8 mg/dl). Vaginal examination revealed fully relaxed cervix with absence of foetal reflexus. Postural (P3) abnormality (lateral deviation of head and neck) was corrected and a dead male still born male calf delivered with traction. The skin of the still born calf revealed numerous, multifocal, variably-sized (2.5 to 6.5 cm in diameter), smooth, firm solitary nodular masses all over the body (Figs. 1a & 1b). In addition, disfigurement of the head was noticed due to the presence of huge ulcerated mass (15.0 cm diameter) on the left side of head region (Fig. 2). The cut surface of these nodular masses was dark brown and had many blood-filled cystic spaces.

Histopathologically, the nodules comprised of pleomorphic spindle cells which lined blood-filled vascular spaces (Fig. 3). The proliferative endothelial cells invaded and compressed adjacent normal tissue. Small to moderate amount of collagenous stroma (Fig. 4) along with eosinophilic-staining intercellular edema fluid. The spindle-shaped cells of variable sizes and shapes were lining the small to large erythrocyte-containing vascular channels. Cytoplasmic boundaries were indistinct. The large mass in the head region showed wide areas of necrosis and thrombi similar to the findings of earlier

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Fig. 1. (a) Multiple solitary cutaneous nodules noticed throughout the in the skin of still born male calf; (b) Multiple solitary nodules in the skin of limbs in a still born male calf

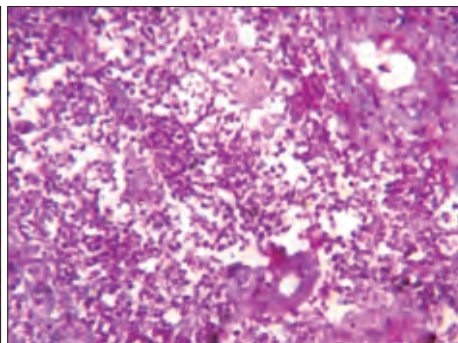
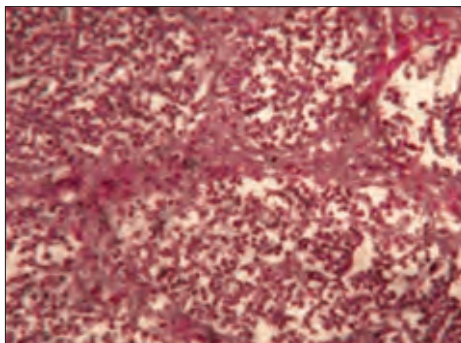


Fig. 2-4. (2) Disfigurement of head region due to presence of ulcerated mass (15 cm dia); (3) Numerous poorly formed blood vessels with moderate amount of collagenous stroma (H&E400X); (4) Massive areas of necrosis due to proliferative endothelial cells (H&E, 400X)

authors. The nuclei of neoplastic spindle cells were ovoid to elongate and vesicular with clumped chromatin. The histomorphology of these masses were consistent with that of hemangiosarcoma (Badylak, 1983). In some nodules, the overlying epidermis tended to be thickened by hyperkeratosis and acanthosis with frequent ulceration. Hemangiosarcoma (hemangioendothelioma) is a malignant tumor of endothelial cells occurring most frequently in dogs (Bancroft and Gamble, 2006). The tumor seemingly arises from vascular endothelium and thus can occur at any site. The most commonly involved organs in dogs are spleen, lungs, heart, and liver (Hatzios, 1960). Hemangiosarcomas have a predilection for developing metastases in muscle (Robbins and Catron, 1979). Reports of blood vascular tumors (hemangioma or hemangiosarcoma) in cattle have been infrequent.

In the present case, a huge haemangiosarcoma in the head region with multiple skin tumors could be the obvious cause of the stillbirth of the calf. Therefore, this rare

congenital occurrence of hemangiosarcoma in a crossbred calf should be brought to record.

#### REFERENCES

- Badylak, S.F. (1983). Congenital multifocal hemangiosarcoma in a stillborn calf. *Vet. Pathol.* **20**: 245-247.
- Baker, J.C., Hultgren, B.D. and Larson, V.L. (1982). Disseminated cavernous hemangioma in a calf. *J. Am. Vet. Med. Assoc.* **181**: 172-173.
- Bancroft, J.D. and Gamble, M. (2006). *Theory and Practice of Histological Techniques*. (6<sup>th</sup> Edn.), Churchill Livingstone, Philadelphia. pp.99-112.
- Hatzios, B.C. (1960). Lymphoblastic lymphoma in a bovine fetus. *J. Am. Vet. Med. Assoc.* **136**: 369-375.
- Mulvihill, J.J. and Priester, W.A. (1978). Tumors in young domestic animals:epidemiologic comparisons with man. In: tumors of early life in man and animals. Severi, L. (Edt), Perugia University-Division of Cancer Research, Monteluce, Italy, pp. 1448.
- Robbins, S.L. and Catron, R.S. (1979). Disease of infancy and childhood. In: *Pathologic basis of disease* (2<sup>nd</sup> Edn.), W.B. Saunders Company, Philadelphia, pp. 588, 638.