

## CUTANEOUS MELANO-FIBROMA IN A BULLOCK- A RARE CONCURRENCE OF MELANOMA AND FIBROMA

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**Abstract:** Neoplasms of skin and its components constitute a major component of all tumours among domestic animals. A 5 year old bullock with a history of 5x4” growth above the inguinal region on left groin and 1 ft above the scrotum was presented to the Teaching Veterinary Clinical Complex, College of Veterinary Science – Proddatur. Grossly, the tumour was firm, nodular and pedunculated with diffused areas of dark pigmentation and histologically, two distinct areas of proliferation of dermal melanocytes and fibrocytes of benign nature were observed. Both components were well differentiated, with less mitotic activity. This unusual concurrence of two different neoplasms is rather a rare cutaneous condition in bovines and it is diagnosed as cutaneous melano-fibroma.

**Keywords:** Bullock, Melano-fibroma, Skin, Tumour.

### Introduction

Tumours affecting skin and appendages form a major component of all neoplasms in veterinary practice as they will be exhibited externally, easily seen and draws immediate attention by the owner (Goldschmidt and Hendrick, 2002). Among the skin tumours, neoplasms of epidermis, fibrous tissue, epithelial tissue, muscle, fat and blood vessels of either benign or malignant nature are common and melanocyte originated tumours occupy a special category of their own (Jubb *et al.*, 2005). Melanomas are the benign tumors arising from pigment producing melanocytes, which are matured forms of melanoblasts that arise from neuro-ectoderm during development. Melanocytic tumors usually account for 5-6% of all bovine neoplasms (Nair and Sastry, 1954; Priester, 1973) and occur most commonly in the skin (Head, 1965). Neoplastic conditions involving fibrous component of skin *viz.*, fibromas and fibrosarcomas, on the other hand, are rather uncommon neoplasms in large animals (Movassaghi and Mohammadi, 2009). In the present case, a rare concurrence of melanoma and fibroma was observed in a growth arise from skin of a bullock.

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*Received Mar 6, 2014 \* Published April 2, 2014 \* www.ijset.net*

## Materials and Methods

A non-descript bullock of 5 years age was presented to the Teaching Veterinary Clinical Complex, College of Veterinary Science – Proddatur, with the reported history of growth on left lateral abdomen 5x4” above the inguinal region on left groin and 1 ft above the scrotum since 2 months. After clinical examination, the tumour mass was resected surgically and a small piece of growth was fixed in 10% neutral buffered formalin and submitted to the Dept. of Veterinary Pathology, for histological diagnosis. Fixed tissue was subjected to routine histological processing followed by staining of tissue sections with Haematoxylin and Eosin (Luna, 1968) for microscopic examination.

## Results and Discussion

The growth was firm, nodular and pedunculated with diffused areas of dark pigmentation (Fig. 1). Histologically, the section showed distinct areas of benign proliferation of both fibrous tissue and melanin producing cells within the dermis (Fig. 2). Melanocytes are spindle shaped to polyhedral with cytoplasmic melanin accumulation. Melanin pigments were granular, dirty brown in colour and have often obscured the nuclear details (Fig. 3). Certain regions have revealed extra-cellular presence of melanin pigments within the stroma. Such proliferation of melanocytes was found to be restricted to dermal region of skin. These observations are in accordance with the earlier reports of dermal variety of melano-cytoma (Goldschmidt and Hendrick, 2002). Fibroma component, on the other hand, was characterised by benign proliferation of fibrocytes. These cells were spindle shaped with plump nucleus. Focal areas of inter-cellular collagen deposition were also evident between the proliferating fibrocytes (Fig. 4). Few mitotic figures were seen. Although, fibrous tissue tumors were rare in animals and usually the growths on skin will be suspected for either papilloma or squamous cell carcinoma but few cases were reported earlier among bovines, involving different regions of the body (Jang *et al.*, 2008; Devi Prasad *et al.*, 2009). On contrary, the present tumour represented a rare combination of two different neoplastic conditions and it might have arise by the simultaneous neoplastic transformation of both fibrous tissue as well as melanocytes, with in the dermal region of skin.

## Conclusion

The histological examination of the present growth was diagnosed as cutaneous melano-fibroma which is an unusual concurrence of two different neoplasms in bullock.

### Acknowledgements

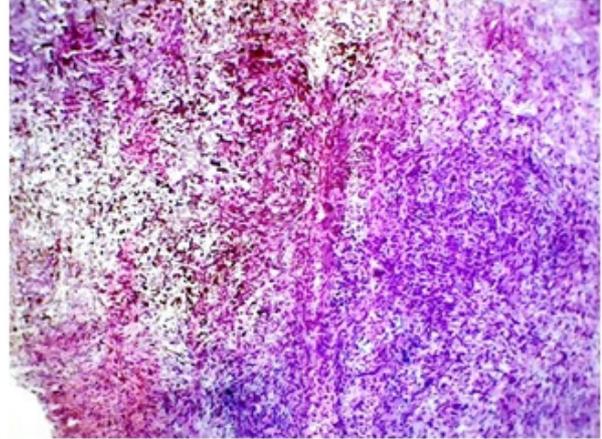
The authors are thankful to SV Veterinary University, Tirupati for providing the facilities to carry out this work.

### References

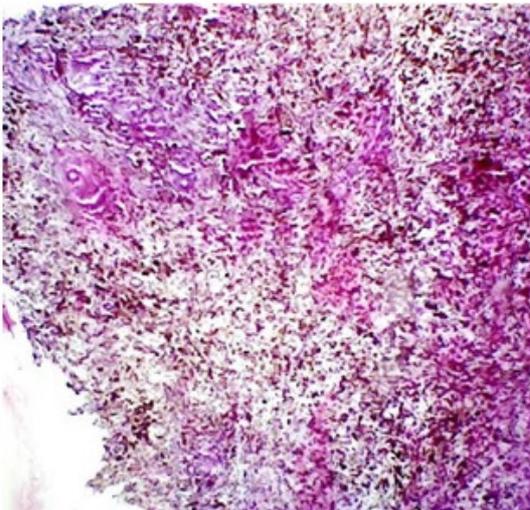
- [1] Devi Prasad, V., Suresh Kumar, R.V., Dhana Lakshmi, N., HariKrishana, N. V. V. and Veena, P. 2009. An unusual case of cutaneous fibroma on the fore head region of a graded murrâ she buffalo – A case report. *Buffalo Bulletin*.28 (3): 119-120.
- [2] Goldschmidt, M.H. and Hendrick, M.J. 2002. Tumors of the skin and soft tissues. *In: Tumors in domestic animals*, Meuten, D. J. (ed), 4<sup>th</sup>edn., Blackwell publishing company, Iowa. pp. 78-87.
- [3] Head, K.W. 1965. Some data concerning the distribution of skin tumors in domestic animals. *In: Comparative Pathology and Physiology of the skin*, Rook, A.J. and Walton G.S. (eds), Blackwell, Oxford, England, pp. 615-635.
- [4] Jang, J-S., Kim, J-H., Shin, T-K., Cho, G-J. and Kwon, O-D. 2008. A case of cutaneous fibroma in a Korean indigenous cattle. *Journal of Veterinary Clinic*. 3: 200-201.
- [5] Jubb, K.V.F., Kennedy, P.C. and Palmer, N. 2005. Neoplastic diseases of skin and mammary gland. *In: Pathology of domestic animals*, 4<sup>th</sup> edn., Academic press, California, pp. 706-707.
- [6] Luna, L.G. 1968. Manual of histologic staining methods of the Armed Forces, Institute of Pathology. Mc Graw Hill, New York, pp: 32-46.
- [7] Movassaghi, A.R. and Mohammadi, G.H. 2009. An unusual cutaneous fibroma in a heifer. *Comparative Clinical Pathology*. 18 (2): 207-208.
- [8] Nair, K.P.C. and Sastry, G.A. 1954. A survey of animal neoplasia in the Madras State. I. Bovine. *Indian Veterinary Journal*. 30: 325-333.
- [9] Priester, W.A. (1973). Skin tumors in domestic animals. Data from 12 United States and Canadian colleges of veterinary medicine. *Journal of National Cancer Institute*. 50: 457-466.



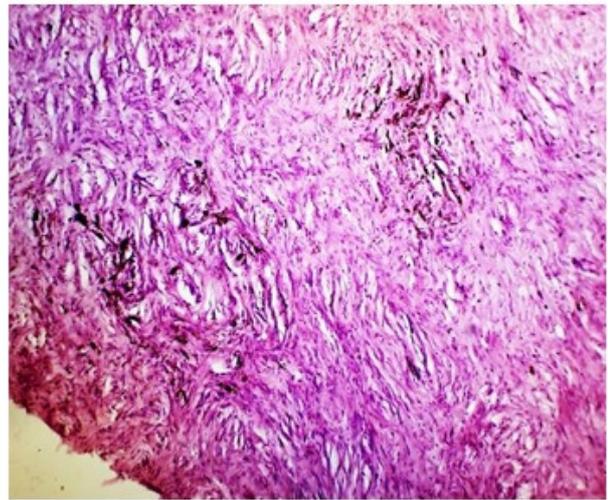
**Fig. 1:** Firm growth at left groin region



**Fig. 2:** Tissue Section showing fibrous tissue proliferation and diffused distribution of melanocytes. H & E: x100



**Fig. 3:** Dermis showing presence of melanin pigment. H & E: x100



**Fig. 4:** Tissue section showing presence of collagen in between fibrocytes.  
H & E: x100