

A Case of Cutaneous Apocrine Adenocarcinoma in a 10 days old Buffalo calf

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Abstract

A case of papillary adenocarcinoma of skin in a 10 days old buffalo was recorded. Grossly tumor mass measured 10cm in diameter, 2 Kg in weight and located middle of tail. Cut section appeared pink in color, and was soft to firm in consistency. There were extensive areas of hemorrhage admixed with necrosis. Histologically, the tumor mass was composed of multilayered epithelial cells forming papillary projections into lumen. The stroma included fibrous connective tissue, with varying areas of neo vascularization. Agnor staining shown multiple nucleoli. These gross and histopathological findings observed during this study led to a final diagnosis of Apocrine adenocarcinoma.

Key words: Apocrine adenocarcinoma; Buffalo calf; Papillary type; Tail.

Introduction

Apocrine Adenocarcinoma is a malignant tumor with differentiation to apocrine secretory epithelium (Goldschmidt et al. 1998). Complex apocrine carcinomas show proliferation of the glandular epithelium, which is malignant, and myoepithelial cells. Apocrine carcinomas are relatively common in dogs less common in cats and infrequently described in other species (Goldschmidt and Shofer, 1988 and Gross et al. 1992). The nodules vary in size from less than 1 cm to many centimeters in diameter. The inflammatory form is an expansile skin lesion that spreads in a centrifugal manner from a central focus of ulceration. Infiltration of dermal lymphatics and extension to the regional lymph nodes, with blockage of the afferent and efferent lymphatics, may produce severe dermal and subcutaneous edema in the involved area. On cut section the nodular masses may show central degeneration and necrosis. The tumor is often subdivided by connective tissue trabeculae into multiple lobules. Cyst formation is infrequently found. Fibrosis at the periphery of the mass is often seen with invasive tumors.

Materials and Methods

Specimens from a number of sites throughout the tumor mass were fixed in 10% neutral buffered formalin and embedded in paraffin, and sections were cut at 5 μ and stained with hematoxylin and eosin (HE) and AGNOR.

Results and Discussion

A 10 days old buffalo calf was presented with a history of a congenital growth at the middle of the tail. The calf was referred to the college of veterinary science, tirupati. The mass was almost 10 cm in diameter dorsoventrally. It was located below the tenth and eleventh coccygeal vertebrae (C10–C11) and was firmly adherent to the deep tissues. Tumor mass was excised by inducing local anaesthesia of 10ml 2% lignocaine after development of anaesthesia tourniquet was tied at the base level of the tail to control bleeding peri operatively. A V shaped incision was given through the skin and muscles both dorsal and ventral surface of tail. Tail was amputated in between the coccygeal joints by palation just above the level of tumor mass, finally skin incision was closed using horizontal mattress. On cross section, the tumor was pink to red, numerous cauliflower like growths were subdivided into lobules by thin white septa (Fig. 1), and contained extensive hemorrhagic and necrotic areas. Microscopic examination of the tumor mass revealed frequently multilayered neoplastic epithelium, which contained pseudoadenomatous and papillary projections, arranged as glandular structures with irregular lumina of various sizes (Fig. 2 & 3) and rare duct like structures or cells solidly packed in nests (Fig 4). These cells were cuboidal to columnar in shape and had eosinophilic cytoplasm. Vesicular nuclei were round to plump or oval and often had distinct nucleoli. Mitotic figures were infrequent. AgNOR staining revealed presence of nucleoli as black colored spots with in the nucleus of neoplastic cells (Fig 5). The average AgNOR count obtained was 4.54. The histopathological findings were in accordance with the findings of Gulbahar et al. (2002), Piercy et al. (1994) and Tessele et al. (2015). In the present case, there was no recurrence of the condition and as radiotherapy which was practiced in humans is expensive and difficult in veterinary practice. Surgical excision was proved to be the only curative therapy for localised apocrine gland adenocarcinoma.

Conclusion Based on histopathological features and AgNOR staining, the present case was diagnosed as apocrine adenocarcinoma.



Fig 1. A cut section of tumor mass pink in color and cauliflower like growths with areas of haemorrhages.

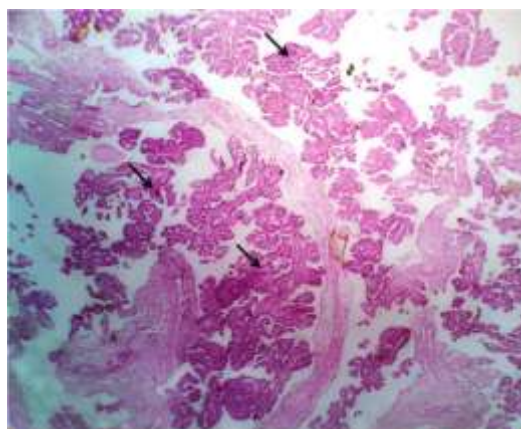


Fig 2. Neoplasm showing papillary projections (arrows) 100x

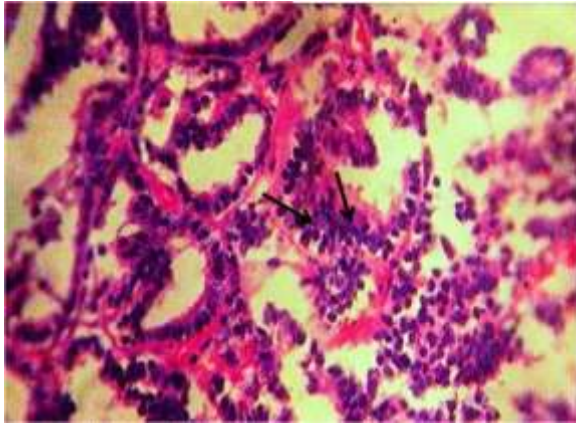


Fig 3. The neoplasm is composed of multiple acini and tubules with papillary projections lined by multilayered neoplastic epithelium (arrows) supported by fibrovascular tissue and areas of neovascularisation H&E 400x.

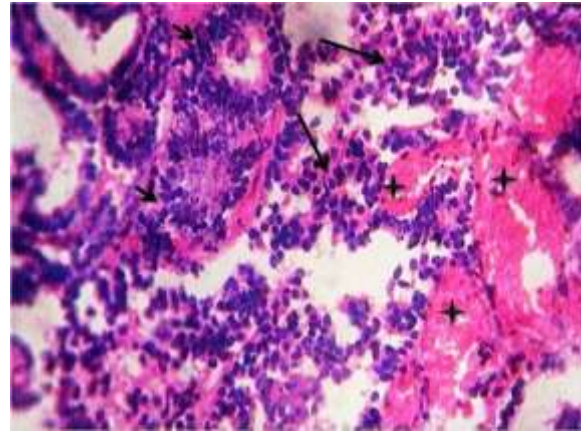


Fig 4 The neoplasm showing solid acinar pattern (long arrows) lined by multi layerd neoplastic cells (short arrows) and supported by areas of vascularisation (star). H&E 400x.

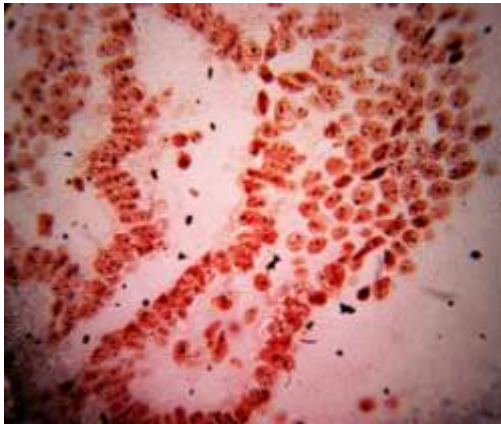


Fig 5 AgNOR staining revealed presence of nucleoli. H&E400x.

References

- 1) Goldschmidt MH, Dunstan RW, Stannard AA, Von Tscherner C, Walder EJ, Yager JA, 1998. World Health Organization International Histologic Classification of Tumors of Domestic Animals. Histological Classification of Tumors of the Skin of Domestic Animals. 2nd series, vol. III. Armed Forces Institute of Pathology, Washington DC.
- 2) Goldschmidt MH, Shofer FS, 1998. Skin Tumors of the Dog and Cat. Butterworth Heinemann, Oxford. 1–301.
- 3) Gross TL, Ihrke PE, Walder EJ, 1992. Veterinary Dermatopathology: A Macroscopic and Microscopic Evaluation of Canine and Feline Skin Disease. Mosby Yearbook, St. Louis. 330–476.
- 4) Gulbahar MY, Alkan I, Aslan L, Golen I, 2002. Mixed Apocrine Sweat Gland Tumor of the Tail in a Cow. Veterinary Pathology 39: 281–285.
- 5) Piercy DWT, Cranwell MP, Collins AJ, 1994. Mixed apocrine (sweat gland) adenocarcinoma in the tail of a cow. Veterinary Record 134: 473–474.
- 6) Tessele B, Rissi DR, Langohr IM, Vielmo A, Barros CSL, 2015. Mixed apocrine adenocarcinoma of the tail in a cow. Brazilian journal of Veterinary Pathology 8(2): 72-75.