

Case Report

A CASE REPORT OF DERMAL FIBROUS MELANOMA IN A HORSE

A. Prasanth Babu*, P. Amaravathi¹, P. Jagapathi Ramayya and V. Reddy Dhyana

Department of Vety. Anatomy, College of Vety. Science, Tirupati

¹State Level Diagnostic Laboratory, College of Vety. Science, Tirupati

E-mail: prasanthankem@gmail.com (*Corresponding Author)

Abstract: An adult 23 years old mare with a history of recumbancy since one month and dead was transferred to the Department of Veterinary Anatomy, College of Veterinary Science, Tirupati from Department of ILFC, College of Veterinary Science, Tirupati. While dissecting the carcass several 1-2 cm size black coloured round to oval masses without any pedunculation were observed near oral commissure, vulval commissure and on vulval lips. All superficial lymph nodes were black in colour. Histopathological examination of these masses revealed numerous melanocytes grouped in irregular bundles with patchy distribution of melanin pigment in the upper part of dermis and even in epidermis and melanocytes were admixed with fibrous tissue in interlacing pattern. In lymph nodes varying number of melanophages with eccentric and flattened nucleus were observed. In these melanophages larger and coarser melanin granules were noticed. Melanin was prominent near the surface and around blood vessels. Based on distribution of melanocytes it was diagnosed as dermal fibrous melanoma.

Keywords: Dermis, Mare, Melanocytes, Melanophages, Lymphnodes.

Introduction

Tumors are abnormal growth of cells. Tumors affecting the skin are the most commonly seen tumors in horses and can be diagnosed more frequently as they are most easily seen tumors as a result of constant exposure of skin to the external environment, chemicals, solar radiation and viruses. Hormonal abnormalities and genetic factors may also play an important role in the development of tumors in and close to the skin (The Merck Manual, 2011). A benign neoplasm of melanocytes is one of the most common cutaneous neoplasms of the horse accounts for approximately 4-15% of the total equine neoplasias. As these melanomas can be easily diagnosed based on gross appearance of mass and infrequently submitted for histological examination, reported cases were meager so the true incidence may be higher.

Many reports estimated that as many as 80% of older gray horses will develop dermal melanomas (Johnson, 1998). The purpose of this study is to describe the histologic characteristics of fibrous melanoma.

Materials and methods

An adult 23 years old mare with a history of recumbancy since one month and dead was transferred to the Department of Veterinary Anatomy, College of Veterinary Science, Tirupati from Department of ILFC, College of Veterinary Science, Tirupati. While dissecting the carcass gross abnormalities were noted and tissues were collected in 10% neutral buffered formalin and tissues were subjected to routine histological processing procedures (Luna, 1968). Special stainings like Vangieson's stain (Luna, 1968) and Melanin bleach (Lillie, 1965) were carried out.

Results and discussion

While dissecting the carcass several 1-2 cm size black coloured round to oval masses without any pedunculation were observed near oral commissure, vulval commissure and on vulval lips. All superficial lymph nodes were black in colour. Similar lesions were reported by Pilsworth and Knottenbelt (2006), Valentine *et al.*, 2014 in horses.

Histopathological examination of these masses revealed numerous melanocytes grouped in irregular bundles with patchy distribution of melanin pigment in the upper part of dermis and even in epidermis and melanocytes were admixed with fibrous stroma in interlacing pattern (Figs. 1,2&3). Melanin was prominent near the surface and around blood vessels and follicles. In lymph nodes varying number of melanophages with brown, larger and coarser melanin granular pigment were observed (Fig. 4) and after melanin bleach eccentric and flattened nucleus were observed in these melanophages (Fig. 5). These lesions were in agreement with Moulton, 1961. The high frequency of incidence of melanocytic tumors in older gray horses may be attributed to perturbations of melanin metabolism. Melanin produced by dermal melanocytes, fail to transfer to follicular cells and hair follicles become unpigmented and may stimulate hyperplastic changes in these cells either by forming new cells or by increasing their activity. The hyperactivity results in overproduction of melanin and subsequently transformed to neoplasia (McFadyean, 1933, Scott & Miller, 2011).

Conclusion

Based on distribution of melanocytes it was diagnosed as dermal fibrous melanoma.

References

- [1] Johnson PJ (1998). Dermatologic tumors (excluding sarcoids) *Vet Clin North Am Equine Pract*, 14: 643-658.
- [2] Lillie R (1965). *Histopathologic technique and practical histochemistry*. 3rd Edition, McGraw Hill.

- [3] Luna LG (1968). Manual of histologic staining methods of the Armed Forces Institute of Pathology, McGaw Hill, New York.
- [4] McFadyean J (1933). Equine Melanomatosis. J Comp Pathlo Ther, 46: 186-204.
- [5] Moulton JE (1961) Tumors in Domestic Animals. First Edition. California University Press, California,
- [6] Pilsworth RC, Knottenbelt D (2006). Skin Diseases Refresher. Equine Vet Edu, 18(5): 228-230.
- [7] Scott DW & Miller HM Jr (2011). Equine Dermatology. 2nd Ed, Missouri: Elsevier Saunders.
- [8] The Merck Manual Pet Health Edition (2011).
www.merckvetmanual.com/pethealth/horse_disorders_and_diseases/skin_disorders_of_horses/tumors_of_the_skin_in_horses.html
- [9] Valentine BA, Calderwood Mays MB, Cheramie HS (2014) Anaplastic malignant melanoma of the tail in non-grey horses. Equine Veterinary Education.

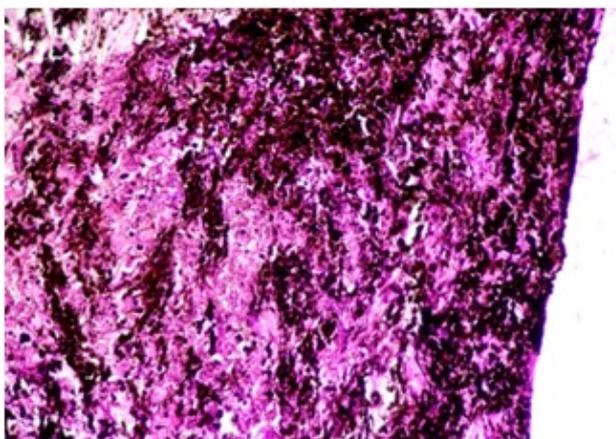


Fig.1: Numerous melanocytes. H & E: x 100

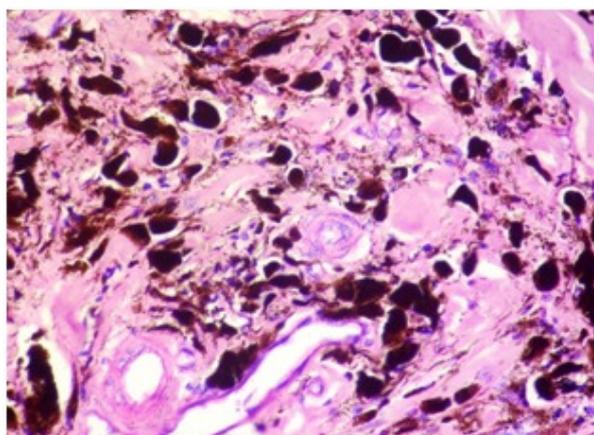


Fig.2: Distribution of melanocytes around blood vessels. H & E: x 400

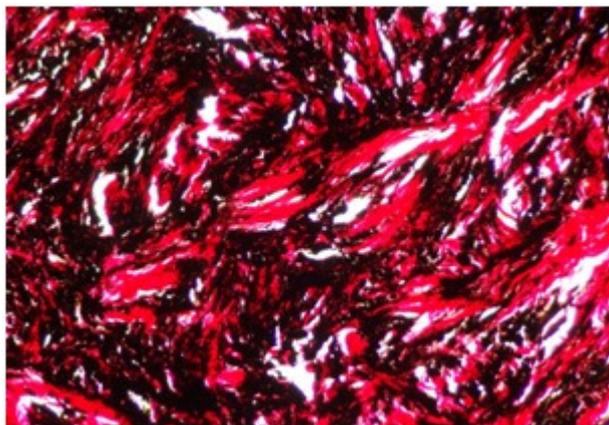


Fig.3: Melanocytes admixed with connective tissue. Vangieson stain: x 100

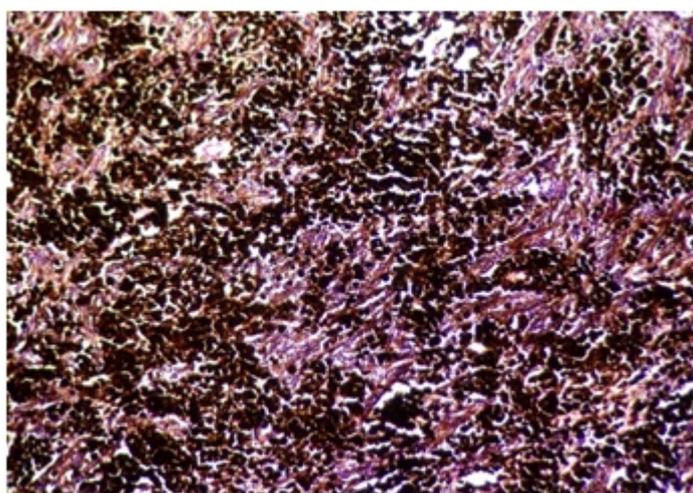


Fig.4. Lymph Node: Numerous melanophages. H & E: x 100

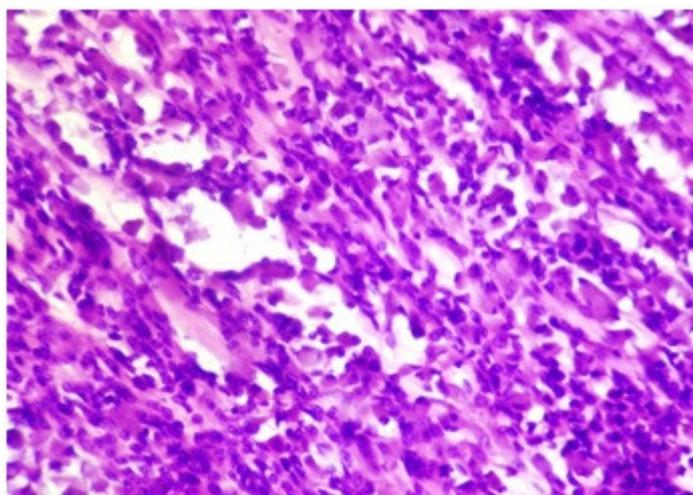


Fig. 5. Lymphnode: Numerous Epithelioid cells and spindle cells. Melanin bleach: x 400