



A case of melanoma - in rat

Neelu Gupta*, A. Bhattacharya, S.H. Bodakhe and M. Katare

Department of Veterinary Pathology,

Department of Veterinary Science and A.H., Anjora. Durg-491 001, India.

Received: 07-10-2015

Accepted: 22-12-2016

DOI: 10.18805/ijar.v0iOF.7830

ABSTRACT

A nine month old male rat died in the Institute of Pharmaceutical Science, GGV, Bilaspur (C.G.). The owner observed the grayish spot on skin, after 10 days of first observation the affected area became hard as like corn and rat died suddenly within 45 days. Before death rat showed abdominal pain, blood tinged urine, weakness, dullness and loss of body weight. The carcass revealed dome shaped sessile blackish, grayish nodule about 0.8 centimeters in diameter on the right renal parenchyma. Microscopically, small spindle shape cell, polyhedral epithelioid shape cells with eosinophilic cytoplasm were observed in affected rat.

Key words- Blackish, Dome, Melanoma, Melanosarcoma, Renal parenchyma.

Cancer is a type of disease that is caused by uncontrolled cell distribution which can develop into a tumor growing in a part of body. There are different types of cancer, which are generally named by the organ affected. One of worst cancers is called melanoma, which is type of skin cancer. Although it is least common cancer but is very deadly one that you want watch out for. Melanoma is a very difficult cancer to spot on the skin that is why the symptoms are not really visible. There are lot of things that people do which can increase their chance of developing melanoma (Samad, 2011).

Samad (2011) described the skin cancer . He explained that the skin has two layer- epidermis and dermis. Epidermis is outer layer while dermis is inner layer. Deeper layer of epidermis contains melanocytes that gives skin color. Melanoma starts in the melanocytes when the skin is exposed to the sun. The melanocytes get damaged and thus results in the abnormal and uncontrolled growth of the cell creating a tumor. It can grow deep into the dermis, invading lymph nodes and spreading through the entire body. Determining how far the cancer has spread is called staging. There are 4 stages for melanoma. Stage 0 is confined to the epidermis, which is the top layer of the skin. Stage 1 and 2 is when the melanoma is confined to the skin but has increased in thickness. Stage 3 is when melanoma has spread further towards the lymph nodes. Finally stage 4 is when melanoma is extremely serious and has spread to the internal organs and to other lymph nodes. Melanoma although very serious in the internal body has a very vague shape on the skin.

A nine month old male rat was dying in the Institute of Pharmaceutical Science, GGV, Bilaspur (C.G.). The owner had observed the grayish spot on skin before 45 days before death. After 10 days of first observation affected area of

*Corresponding author's e-mail: gupta.neelu8@gmail.com

skin showed hardness as like corn and within about 45 days rat suddenly died with showed abdominal pain, blood tinged urine, weakness, dullness and loss of body weight. The carcass revealed dome shaped blackish, grayish tumor about 0.8 centimeters in diameter on the right renal parenchyma. Internal consistency was solid blackish in colour. After necropsy, affected area of skin, lymph node, lung, liver, intestine, kidney, cloaca and vulva were collected and fixed in 10% buffered formalin. After fixing, the tissues were processed routinely and embedded in paraffin. Then, 3 to 4 micrometer thick tissue sections were cut and stained with hematoxylin and eosin (Chauhan, 1995).

History- A owner of a rat observed grayish spot on skin before 45 days before date of death. After 10days of first observation affected area of skin showed hardness as like corn and within 45days rat died suddenly with showed abdominal pain, blood tinged urine, weakness, dullness and loss of body weight.

Macroscopically - Grayish blackish spot revealed on the skin of abdomen. Open the carcass and observed the dome shaped sessile blackish, grayish nodule about 0.8 centimeters in diameter on the right renal parenchyma. Internal consistency was solid blackish in colour. Affected area of skin was hard and blackish in colour. Lung showed congestion. Liver had necrotic foci. Intestine showed mucinous exudate. Cloaca and vulva had no specific lesions. Lymphnode had blackish grayish spots. After necropsy, affected area of skin, lymph node, lung, liver, intestine, kidney, cloaca and vulva were immediately collected and fixed in the 10% buffered formalin.

Microscopically, liver, intestine, cloaca and vulva had not features of melanoma. Liver, intestine, cloaca and vulva were congested and showed degenerative changes.

Skin showed small spindle cell, polyhedral epithelioid shape cells with eosinophilic cytoplasm and hyperchromatic nuclei. Cells were nucleated, some cells had multinucleated nuclei usually situated at the periphery of cell. There were 1-2 mitotic figures per high power field. Lungs showed interstitial pneumonia with few spindle shaped melanin cells. Trabeculae sinus of lymph node showed melanocytes. Kidney showed proliferation of polyhedral epithelioid shape cells with eosinophilic cytoplasm and multinucleated nuclei. Nuclei usually arranged the periphery of cells. Nodule showed small spindle, round and epithelioid shape cells with intracytoplasmic inclusion bodies. Mitotic figures were also observed.

Macroscopic and microscopic lesions of melanosarcoma were found on the nine month old rat at the

part of abdomen skin, lung, lymphnode and tumor near to the right renal parenchyma. Grossly, blackish spot was observed on epidermis of abdomen region i.e. 0 stage of melanoma. After 10 days of first observation spot were large in size and thickend i.e. 1st and 2nd stage of melanoma. After 45 days rat died. On post-mortem lymphnode showed blackish grayish spots i.e. 3rd stage of melanoma and dome shaped sessile blackish, grayish nodule about 0.8 centimeters in diameter on the right renal parenchyma. i.e. 4th stage of melanoma in human being. These finding were in accordance with earlier worker Samad (2011). Gross and microscopic lesions were observed by various workers Yoshitomy *et al* (1991), Kurotaki *et al* (2008) and Nakashima *et al* (1995) in rat and mice, Javankakht *et al* (2014) in horse and bovine and Grossi *et al* (2015) in porcine.

REFERENCES

- Chauhan, R.S. (1995). Veterinary Clinical and Laboratory diagnosis. Jaypee Brothers, New Delhi.
- Grossi, A.B., Hyttel, P. Jensen, H.E. and Leifsson, P.S. Porcine Melanotic (2015). Cutaneous Lesions and Lymph Nodes: Immunohistochemical Differentiation of Melanocytes and Melanophages. *Vet. Pathol.*, **52**:83-91
- Javanbakht, J., Sasani, F., Adibhashemi, F. and Hemmati, S. (2014) Comparative histopathological diagnosis of cutaneous melanoma by H&E, special staining and immunohistochemical methods against cutaneous squamous cell carcinoma in horse and bovine. *Journal of Bioanal Biomed*, **6** (4): 19-23..
- Kurotaki, T. Tomonari, Y., Kanno, T., Wako, Y. and Tsuchitani, M. Kurotaki, T. Tomonari, Y., Kanno, T., Wako, Y. and Tsuchitani, M. (2008). A novel immunohistochemical marker of normal and neoplastic melanocytes in formalin-fixed, paraffin-embedded tissues of Albino Rats. *Veterinary Pathology*, **45**: 383–387.
- Nakashima, N., Takahashi, K. and Harada, T. (1995). An Epithelioid cell type of amelanotic melanoma of the pinna in a Fischer – 344 rat: A case report *Veterinary Pathology*. **45**: 681-645.
- Samad, S. (2008) One world essay- melanoma. (2011). <http://www.slideshare.net/SanaSamad/melanoma-essay>.
- Yoshitomy, K. and Boorman, G.A. (1991). Spontaneous Amelanotic Melanomas of the Uveal Tract in F 344 Rats. *Veterinary Pathology*, **28** (5): 403-409.