



Cavernous Haemangioma in the Liver of One Humped Camels (*Camelus Dromaderius*) In the Sudan: A Case Report

Nuseba H. Mohammed, Halima M. Osman

Veterinary Research Institute, P.O. Box 8067(Al-Amarat), Animal Resources Corporation, Khartoum, Sudan.

ABSTRACT

The present communication described two cases of cavernous haemangioma in the liver of one humped camels (*Camelus dromaderius*) in the Sudan. Two samples were diagnosed in a (four year old camel from Kassala and 13years old camel from West Sudan) female camel. Physical examination of the liver revealed small erythematous papules on the liver surface. Microscopical examination of the liver revealed dilated, irregular vascular spaces lined by single layer of endothelial cells supported by fibrous septa and showing numerous papillary enfolding. The line of demarcation between the tumor and normal hepatic tissue was well defined the normal hepatic parenchyma atrophic and an irregular or spongy interface with an ill-defined margin.

Keywords: Cavernous hemangioma, camel, Gross pathology, Histopathology.

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INTRODUCTION

Haemangiomas are benign tumours of vascular endothelial cells or their progenitors (Schoniger *et al.*, 2008).Cavernous haemangioma of the liver is sharply demarcated from the surrounding liver tissue. It varies in size from less than 1 cm to 30- 40 cm or more which is called giant hemangiomas (Grieco and Miscall *et al.*, 1978). It is composed of cavities lined with endothelial cells and filled with blood (Pateron *et al.*, 1991). A hemangioma more than 4 cm in diameter was defined as giant by Adam *et al.* (1970).

MATERIALS AND METHODS

Postmortem examination was carried out immediately after slaughtering of the camels. Livers were examined for the presence of any pathological lesion and a portion from the affected areas was cut off and preserved in 10%

formalin and transported to the laboratory and processed for histopathological examination using the conventional methods then stained with haematoxylin and eosin (H&E).

RESULTS AND DISCUSSION

Two cases (4 and 13 years of age) female camel liver samples diagnosed as liver cavernous haemangioma Based on histopathological examination from 80 samples feted (2, 5 %).

Macroscopical examination revealed small erythematous papules on the liver surface. The masses were approximately 2–3 mm in diameter, well-circumscribed, purple to red in colour and slightly elevated above the surface.

Microscopical examination of the liver revealed dilated, irregular vascular spaces lined by single layer of endothelial cells supported by fibrous

septa and showing numerous papillary enfolding. The line of demarcation between the tumor and normal hepatic tissue was well defined the normal hepatic parenchyma atrophic and an irregular or spongy interface with an ill-defined margin (Figure 1). The interconnected spaces were filled with blood and separated by a fibrous tissue (Figure 2). The same sample revealed irregular dilated vascular channels lined by one row of epithelial cells (Figure 3).

Cavernous haemangioma is unclear, but it appears to represent progressive growth of congenital lesions. The lesions may be single or multiple are thought to be vascular malformations that enlarge by means of ectasia rather than neoplastic growth.

The underlying pathophysiology of the inflammatory process in liver haemangioma is not fully understood (Bornman *et al.*, 1987; Smyrniotis, *et*

al., 2000). One theory suggests that cytokines released from hepatic macrophages and endothelial cells are responsible for the inflammatory process (Smyrniotis *et al.*, 2000, Feder *et al.*, 1993). Others consider the key mediators to be interleukin-1 and -6 (Feder *et al.*, 1993). The most likely explanation for the pain is thrombosis within the tumor (Smyrniotis *et al.*, 2000, Egea *et al* 1996). The elevated levels of alkaline phosphatase could be the result of compression of bile ducts, secondary to either the growing giant liver haemangioma itself, or to the rigid thrombosis and fibrosis that occur within the structure of the haemangioma (Smyrniotis, *et al.*, 2000; Egea *et al* 1996).

Although this study was limited in scope, nevertheless, the present results suggest the necessity of more detailed histological investigation of vascular tumours in camels.

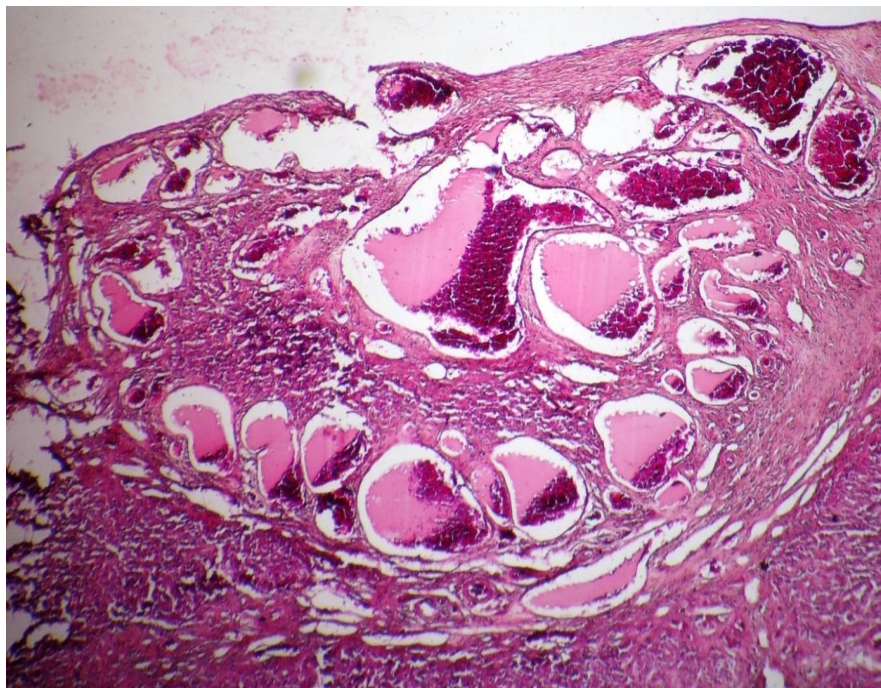


Figure 1: A camel liver with Cavernous haemangioma characterize by well-circumscribed, ovoid shaped exophytic nodule consisted of rete peg like hyperplasia of the overlying epithelium and enclosed vascular spaces. The vascular spaces were filled with blood (H&E X10).

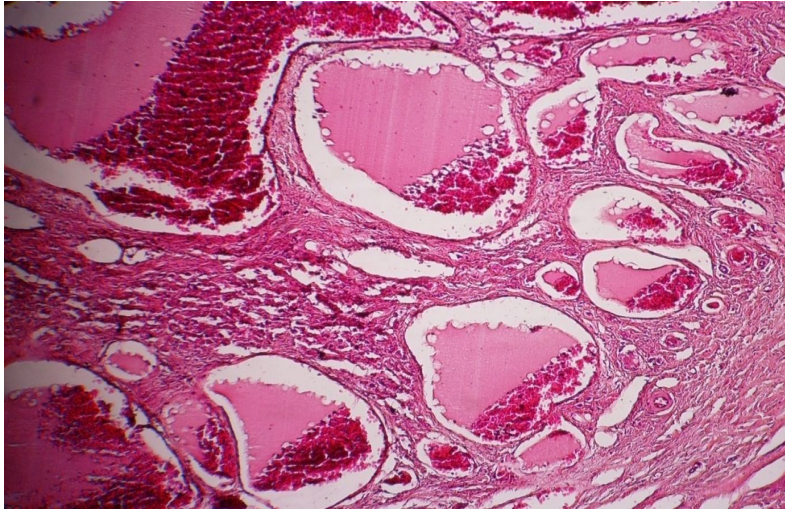


Figure 2: A camel liver shows a characteristic appearance of irregular dilated vascular channels lined by one row of epithelial cells which is called cavernous haemangioma. (H&E.X 40).

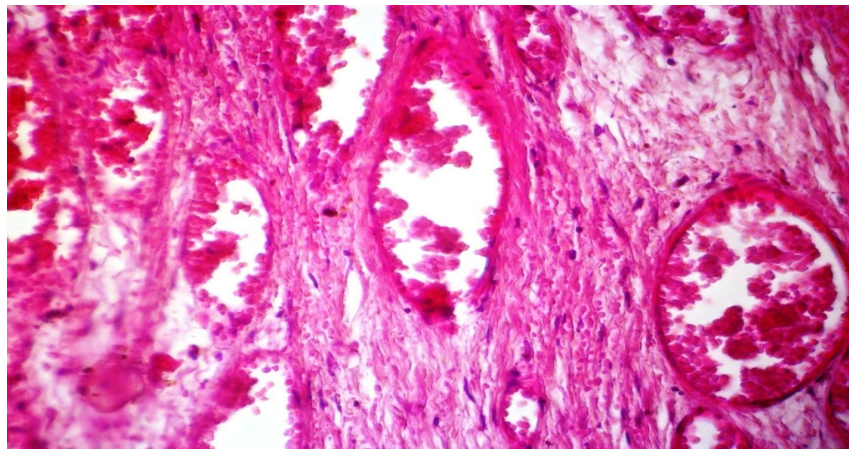


Figure 3: A camel liver shows irregular dilated vascular channels lined by one row of epithelial cells which is called cavernous haemangioma. (H&E.X 40).

REFERENCE

- Adam, Y.G.; Huvos, A.G.; Fortner, J.G. (1970). Giant hemangioma of the liver. *Ann. Surg.*, **172**: 239-245.
- Bornman, P.C; Terblanche, J. and Blumgart, R.L. (1987). Giant hepatic hemangiomas: Diagnostic and therapeutic dilemmas. *Surgery*, **101**: 445-449.
- Egea, A.M.; Del Pozo Rodriguez, M. and Cantero, M.V. (1996). Indications for surgery in the treatment of hepatic hemangioma. *Hepatogas – troenterology*, **43**: 422-426.
- Feder, L. S.; Tdaro, J.A. and Laskin, D.L. (1993). Characterization of interleukin-1 and interleukin-6 production by hepatic endothelial cells and macrophages. *J Leucocyt Biol*; **53**: 126-132.
- Grieco, M.B. and Miscall, B.G. (1978). Giant hemangiomas of the liver. *Surg. Gynecol. Obstet.*, **147**: 783–787.

- Pateron D, Babany Gand Belghiti J. (1991). Giant hemangioma of the liver with pain, fever and abnormal liver tests. Report of two cases. *Dig Dis Sci*, **36**: 524-527.
- Schoniger, S., Tivers, M.S., Baines, S.J. and summers, B.A. (2008). Arteriovenous haemangioma in two dogs and cat. *J. Comp. Path.*, **139**: 130-136.
- Smyrniotis, V.; Kehagias, D. and Arkadopoulos, N. (2000). Liver hemangioma with systemic inflammatory manifestations: Letter to the editor. *Am J Gastroenterology*, **95** (3): 830-832.