Case Report

Nasotracheal Cavernous Hemangioma in Sheep (Case Report)

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A two-year-old ewe was presented to Veterinary Hospital, with a sudden onset of diarrhea, epistaxis, reluctance to move and recumbency which eventually led to its death. After necropsy and tissue sample collection for further examinations, histopathological study revealed large submucosal vascular structures with some thrombotic and blood filled spaces indicator of nasotracheal cavernous hemangioma, diffuse lymphocytic enteritis, hepatic diffuse mild vacuolar degeneration, severe pulmonary hyperemia and edema, cardiac and skeletal muscle sarcocystosis with severe hyperemia and fragmentation of cardiac muscle fibers, mild perineuronal edema of the spinal cord, hyperemia and perineuronal (Purkinje cell) edema in the cerebellum, hyperemia with perineuronal and perivascular edema in the cerebrum, severe hyperemia with diffuse severe acute tubular necrosis, and mild intratubular and intrabowman’s capsular space proteinaceous material in the kidney. To the authors’ knowledge, this is the first case report of Nasal hemangioma in sheep in Iran.

Key words: Veterinary, nasotracheal, cavernous, hemangioma and sarcocystosis.

INTRODUCTION

Hemangiomas are detected in the skin, spleen, oral cavity, muscle and bladder, as benign tumors of vascular endothelium which are commonly seen in dogs, less commonly in cats (Aatta et al., 2010, Miller et al., 1992), and rarely in other domestic animals, as they may occur in very young horses and swine (Aatta et al., 2010, Donald, 2002, Jubb et al., 2007). Macroscopically hemangiomas are well-demarcated, encapsulated masses, ranging from blue, bright red to dark brown. In large specimens the cut surface has a honeycomb pattern of fibrous trabeculae separating blood-filled cavities. Histologically, most hemangiomas are well circumscribed, and are composed of vascular spaces of variable size, with the properties of normal vascular endothelium. Organized thrombi with foci of hemosiderosis are common histopathological findings in this tumor. Based on the size of the vascular channels two variants of these tumors are known; as cavernous or capillary hemangiomas. In the cavernous type, which is more common in dogs, the large channels are separated by fibrous connective tissue stroma which may contain inflammatory cells such as lymphocytes, mast cells and hemosiderin-laden macrophages. In the capillary variant there is little stroma, a more cellular appearance and large, sometimes pleomorphic, nuclei compared to the cavernous variant (Donald, 2002, Jubb et al., 2007).

Hemangiomas have been recorded in cattle (adult and aged), horses (less than 1 year of age), sheep, swine and fowls, but it is only in cats and dogs (both mean age of approximately 10 years) that frequency of occurrence has been estimated, therefore, according to the references, highest incidence of hemangiomas is reported in dogs and cats (without apparent sex, breed or site predilection) as described above (Mohajeri et al., 2008, Jubb et al., 2007, Miller et al., 1992).

A round-shaped, pedunculated, soft and dark red mass on gingival compartment of midlateral edge of mandibular region of a five-year-old Iranian cross breed ewe has been reported (Mohajeri et al., 2008). Also a case of verrucous hemangioma has been addressed in an eight-
Table 1. Summary of histopathological findings in tissue samples.

<table>
<thead>
<tr>
<th>Tissue</th>
<th>Microscopic findings</th>
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<tbody>
<tr>
<td>Nasotrachea</td>
<td>Large submucosal vascular structures with some thrombotic and blood-filled spaces</td>
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<tr>
<td>Kidney</td>
<td>Severe hyperemia, diffuse severe acute tubular necrosis, and mild intratubular and</td>
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<tr>
<td></td>
<td>intrabowman's capsular space proteinaceous material</td>
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<tr>
<td>Heart</td>
<td>Multiple sarcocysts with severe hyperemia and fragmentation of cardiac muscles</td>
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<tr>
<td>Cerebrum</td>
<td>Hyperemia with perineuronal and perivascular edema</td>
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<tr>
<td>Cerebellum</td>
<td>Hyperemia and perineuronal (Purkinje cell) edema</td>
</tr>
<tr>
<td>Spinal cord</td>
<td>Mild perineuronal edema</td>
</tr>
<tr>
<td>Skeletal muscle</td>
<td>Sarcocystosis</td>
</tr>
<tr>
<td>Lung</td>
<td>Severe pulmonary hyperemia and edema</td>
</tr>
<tr>
<td>Liver</td>
<td>Diffuse mild vacuolar degeneration (may be fatty change) and autolysis</td>
</tr>
<tr>
<td>Small intestine</td>
<td>Diffuse lymphocytic enteritis</td>
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</table>

Figure 1. Two-year-old ewe. Nasotracheal submucosal hemangioma. Numerous blood-filled vascular channels embedded in submucosa (arrows) (X40. H&E). Figure 2. Two-year-old ewe. Nasotracheal submucosal hemangioma. Lymphoplasmacytic infiltration within fibrous stroma is evident (arrow) (x100. H&E). Figure 3. Two-year-old ewe. Nasotracheal submucosal hemangioma. Recent thrombus characterized by presence of red blood cells without any connective tissue formation (arrow) (x100. H&E).

In another study a case of hematuria caused by renal hemangioma has also been reported in a dog (Eddlestone et al., 1999). An eight-year-old castrated male Shih-tzu dog with polyuria and polydipsia, abdominal pain and dermatological problems with primary hemangioma was noted (Hee-Chun et al., 2013). Two cases of spinal cord hemangioma in dogs, one of the capillary variant and the other of the cavernous variant have also been reported (Jull et al., 2011). In another study a hemangioma mass in the ileum of an 11-year-old castrated male beagle dog with depression, abdominal discomfort, anorexia and melena was diagnosed (Aatta et al., 2010). A case of concurrent intranasal hemangioma and tetracycline induced gastritis and ulceration in a dog has been reported (Banga et al., 2010).

Case presentation

We present a case of nasotracheal cavernous hemangioma in an Aradi sheep, which was part of a flock of 140 sheep and 23 goats, located in Damavand, the capital of Damavand County, Tehran Province. On 7 Feb 2015, a two-year-old ewe was presented to veterinary hospital with a sudden onset of diarrhea, epistaxis, and reluctance to move and recumbency which eventually led to its death. Necropsy and sample collection were
undertaken for further examinations. Tissue samples were obtained from nasotrachea, kidney, heart, cerebrum, cerebellum, spinal cord, skeletal muscle, lung, liver and small intestine. All specimens were fixed in 10% neutral buffered formalin, embedded in paraffin, sectioned to a thickness of 4 µm, and stained with hematoxylin and eosin. Histopathological findings are summarized in Table 1 and Fig. 1, 2 and 3.

**DISCUSSION**

Intranasal tumors in dogs are extremely rare, but the malignant types of intranasal vascular tumors have a little higher incidence. There is a relationship between contact to environmental carcinogens and pollutants with occurrence of hemangioma. Hemangioma and hemangiosarcoma are associated with blood clotting affects with decreased platelet count and increased blood clotting time (Banga et al., 2010). There are few reports of this tumor in sheep. Only a round-shaped, pedunculated, soft and dark red mass on gingival compartment of midlateral edge of mandibular region of a five-year-old Iranian cross breed ewe has been reported (Mohajeri et al., 2008). According to the references, highest incidence of hemangiomas is reported in dogs and cats (without apparent sex, breed or site predilection) (Jubb et al., 2007, Miller et al., 1992). Although this tumor is considered as a benign tumor, mitotic figures are rarely seen. The tumor is generally slow growing.

This unusual presented nasotracheal submucosal hemangioma is believed to be very rare with only a few reports.

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**REFERENCES**


