

Case Study

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Successful Surgical Correction of Splenic Hemangiosarcoma in Two Dogs

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ABSTRACT

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Two splenic tumor cases of dogs were presented with distended abdomen. Both the dogs showed anorexia, lethargy and not responding to medical treatment. Blood examination showed low hemoglobin and platelet counts. The dogs were surgically operated for removal of very big spleen under Propofol and isoflurane anaesthesia. Haemoabdomen was observed during surgery. Post operatively they were treated with antibiotics and Tab. Prednisolone. Both the dogs recovered uneventfully and are still alive. Histopathological examination of masses revealed splenic haemangiosarcoma.

Introduction

Splenic masses are frequently encountered in dogs. They may be diagnosed in dogs that present with non-traumatic haemoabdomen or incidentally upon imaging or abdominal surgery. Hemangiosarcoma of various visceral organs are not very common but has been reported by some researchers as the most common splenic mass in dogs (Day *et al.*, 1995 and Eberle *et al.*, 2012). Medical records from two foreign hospitals from 2005 to 2014 show several cases of

histopathologically confirmed visceral hemangiosarcoma in dogs (Batschinski *et al.*, 2018). Several clinicians stated different method of treatment of splenic hemangiosarcoma such as only surgical removal or use of doxorubicin treatment after the surgery.

The present study was undertaken in two cases of extensively enlarged spleen which were successfully treated by surgical removal under gaseous anesthesia and showing prolongs survival time.

Materials and Methods

Case 1

A 10 years and 4 months old male Labrador retriever was presented with the history of anorexia since last 15 days. The dog was weighing 21 kg, lethargic and emaciated. Clinical examination revealed bone hide condition, anemia and was difficulty in breathing with extensive distended abdomen (Fig. 1). The rectal body temperature was within the reference range. Blood examination revealed haemoglobins 7.2 gm% with platelets count 1, 20,000/cu mm. The ultrasonography showed general enlargement of the spleen with heterogeneous structure including hyper echoic, hypo echoic and anechoic areas. The radiography and ultrasonography reports suggested enlarged spleen with nodular surfaces on it.

Case 2

A 9 years and two months old, mixed breed male dog weighing 22 kg was presented with anorexia since last 7-10 days and not responding to medical treatment. On physical examination, the dog was found anemic, general lethargic, bone hide in condition with distended abdomen. Abdominal palpation showed soft tissue mass in abdomen. The blood examination revealed reduced haemoglobin to 8.5 gm% with platelet counts as 80,000 / cu mm. Radiography and ultrasonography examination revealed extensive large mass on spleen.

Both the cases showed very large splenic masses and deterioration of body condition of dogs with reduction in haemoglobin indicative of anaemia. Thus the cases were subjected to surgical removal of entire spleen to prevent further reduction in haemoglobin levels, may be due to bleeding, and to reduce respiratory distress from space occupying mass present on spleen.

Both the cases were operated for splenectomy under propofol at the dose rate of 4 mg/ kg. B. W and isoflurane gaseous anaesthesia. A long abdominal incision was taken starting from posterior to the sternum up to the anterior of prepuce (Fig. 2). After ligation of splenic blood vessels, the entire spleen was surgically removed (Fig. 3 and 4). The weight of spleen in first case was found to be 7.5 kg thus the weight of dog which was 21 kg before surgery reduced to 13.5 kg. after surgery. Similarly the weight of spleen in second cases was found to be 6.2 kg in 22 kg dog, reduced to 15.5 kg after surgery. Haemoabdomen was also observed in both the cases hence, the abdominal cavity was washed with Normal Saline. Day *et al.*, (1995) also reported haemoabdomen in 54 % of cases diagnosed as canine splenic hemangiosarcoma. The abdominal incision was than sutured in routine manner.

Both the cases showed uneventful anaesthetic recovery. In post-operative treatment Inj. Cefotaxim @ 25 mg/kg B. W, I/V twice a day for 5 days and Tab. Prednisolone 5 mg, orally bid for 5 days in tapering dose was given. Skin sutures were removed on 12th post-operative day. Both the cases recovered uneventfully.

Results and Discussion

Haemangiosarcoma is a malignant tumor originating from the endothelium of blood vessels and is commonly encountered in dogs over 8 years and from the large breeds (Withrow and MacEwen, 2001). Patients with haemangiosarcoma of spleen are generally diagnosed after the tumor grows fairly large as clinical signs are vague and nonspecific. In the above two cases, as the haemoglobin was reduced, it was planned to remove entire splenic mass immediately to prevent further loss of blood through bleeding. The removal of entire spleen along with tumor mass also relieved the dogs from respiratory distress. The suturing of abdominal incision in routine

manner and use of antibiotics and prednisolone made uneventful recovery in 12 post-operative days.

The splenic mass was observed in 9 years and two months as well as 10 years and 4 months old dogs in the present study. Cole *et al.*, (2012) also recorded splenic masses in average age of 10.3 years Labrador retriever dogs whereas Prymak *et al.*, (1988) recorded the incidence in 8 – 13 years old dogs.

The cases with splenic mass generally shows anemia and reduced platelet count. The diagnosis of such splenic mass is not very difficult as the palpation, radiographs and ultrasonography clearly revealed enlarged spleen due to its location and texture. Day *et al.*, (1995) also diagnosed splenic abnormality clinically by abdominal palpation or

radiography or at exploratory laparotomy and conformed by histopathology. Since the chance of rupture of such masses on spleen is always high, it is advisable to remove such spleen along with mass as early as possible.

The histological examination of mass showed proliferation of spindle shaped cells those formed large and small sized intercommunicating empty and blood filled vascular channels lined by poorly differentiated endothelial cells (Fig. 6). The vascular areas and alternated areas showed sarcomatous features in which streaks of endothelial cells were seen discretely distributed. Some parts were highly cellular whereas others were formed by vascular channels. Sections showed severe cellular depopulation of the splenic pulp (Fig. 5) and were suggestive of hemangiosarcoma.

Fig.1 Case 1 showing Distended abdomen

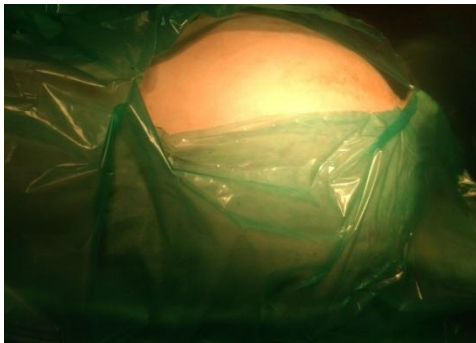


Fig.2 Incision from sternum to prepuce (Case1)



Fig.3 Haemangiosarcoma spleen—Gross appearance (Case 1)



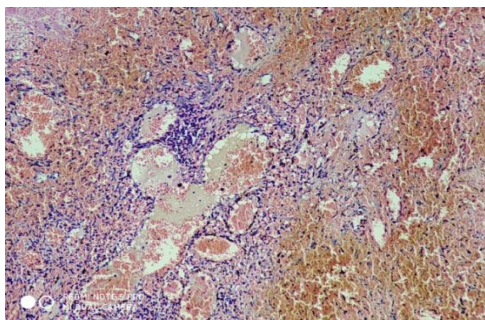
Fig.4 Haemangiosarcoma spleen—Gross appearance (Case 2)



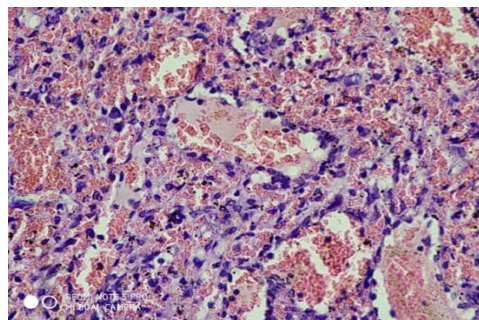
Fig.5 Sections showed severe cellular

depopulation of the splenic pulp (Case 1)

Fig.6 Histological examination showed proliferation of spindle shaped cells



intercommunicating empty and blood filled vascular channels lined by poorly differentiated endothelial cells (Case 2)



Batschinski *et al.*, (2018) studied canine visceral hemangiosarcoma in dogs and observed spleen as a most preliminary affected organ. They also treated splenic hemangiosarcoma with surgery alone or surgery and doxorubicin treatment in 37 cases and found higher survival time in later. Ogilvie *et al.*, (1996) observed high success rate in surgical removal of splenic hemangiosarcoma in aged dog as compared to young ones along with longer survival time, up to one year, in cases where entire spleen is surgically removed.

In conclusions, early diagnosis and quick removal, even in low haemoglobin and platelets counts, under safe anaesthetic protocol is a key of success for surgical treatment of splenic hemangiosarcoma in dogs.

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