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Successful surgical management of splenic tumours and splenic torsion by total splenectomy in geriatric dogs

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Abstract

Splenic disorders such as splenic torsion and splenic neoplasia are commonly encountered in geriatric dogs and often require prompt surgical intervention. The present case series describes the successful surgical management of five geriatric dogs by total splenectomy. Two cases involved an 11-year-old male German shepherd and a 14-year-old male German shepherd diagnosed with splenic torsion. These dogs presented with rapid open-mouth breathing, abdominal distension, severe pain on abdominal palpation, and lethargy. The remaining three cases involved splenic neoplasia in a 7-year-old female Shih Tzu, an 11-year-old male Labrador retriever, and a 10-year-old male German shepherd dog. These dogs exhibited chronic lethargy, anorexia, moderate abdominal enlargement, and abdominal pain. Diagnosis in all cases was based on clinical examination, haematological evaluation, ultrasonography, and radiographic findings. The two dogs with splenic torsion underwent emergency exploratory laparotomy followed by total splenectomy, while the remaining three dogs with splenic tumours underwent elective laparotomy and total splenectomy under general anaesthesia. Post-operative management included fluid therapy, antibiotics, and analgesics. An uneventful recovery was observed in all cases, with marked improvement in clinical signs during the follow-up period. The present case series highlights that total splenectomy is a safe and effective surgical procedure for the successful management of splenic torsion and splenic tumours in dogs.

Keywords: Dog, splenic torsion, splenic tumour, total splenectomy, geriatric dogs

Introduction

Spleen play vital role haematopoiesis, immune surveillance and circulation, destruction and preservation of red blood cells. Splenic disorders commonly encountered in clinical practice, particularly in geriatric dogs, and may present either as acute surgical emergencies or chronic conditions. Splenic torsion is an uncommon but serious condition characterized by twisting of the splenic pedicle, leading vascular compromise, congestion and necrosis of spleen. It is often reported in deep chested breeds. In contrast, splenic tumours are more frequently diagnosed in older dogs and may be benign or malignant with neoplasm of the spleen. Clinical signs associated with splenic tumours are often vague and non-specific, resulting in delayed diagnosis. Rupture of splenic tumours can cause severe intra-abdominal haemorrhage, leading to hem abdomen

Total Splenectomy in dogs is frequently indicated as an emergency surgical procedure in specific clinical conditions, including ruptured splenic tumours, ulcerated splenic neoplasms, and splenic torsion. Delayed or absence of surgical intervention in such conditions may result in severe systemic complications and is associated with a high risk of mortality. The present article reports two cases of splenic torsion and three cases of splenic tumours in dogs with different breeds and ages, all of which were used successfully management by total splenectomy.

Materials and Methods

Animals

The present study included five clinical cases of geriatric dogs presented to the Veterinary Clinical Complex with various splenic disorders. Details regarding breed, age, sex, and splenic condition of the affected animals are presented in Table 1.

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History

Two geriatric German shepherd dogs were presented with a history of acute onset of rapid open-mouth breathing, recumbence, and signs of acute abdomen. The remaining three dogs were presented with lethargy and anorexia of varying duration.

Clinical Examination

A detailed physical and clinical examination was performed in all animals, and physiological parameters were recorded. On abdominal palpation, two dogs exhibited severe abdominal pain with evident vocalization, whereas the remaining three dogs showed moderate, localized pain in the left abdominal quadrant.

Diagnostic Imaging

Survey radiography of the abdomen (left lateral view) was performed in two cases suspected of splenic torsion. Radiographs revealed splenic enlargement, a folded spleen positioned in the mid-abdomen, and loss of normal cranial abdominal organ detail (Fig.01).

Ultra sonographic examination was performed in three cases suspected of splenic neoplasia. The spleen showed a heterogeneous, mixed echogenic mass involving the body of the spleen, suggestive of splenic tumour (Fig.02).

Laboratory Investigations

Haematological and serum biochemical parameters were evaluated in all five dogs prior to surgical intervention.

Results and Discussion

Based on history, clinical signs, physical examination findings, diagnostic imaging, and laboratory results, a decision was made to perform exploratory laparotomy followed by total splenectomy in all five cases.

Surgical Management

Two dogs diagnosed with splenic torsion underwent emergency total splenectomy under general anaesthesia (Fig.03, Fig.04).

The remaining three dogs diagnosed with splenic tumours were stabilized, and food and water were withheld for 12 hours prior to surgery.

The surgical site was prepared aseptically from the xiphoid to the pubis, and laparotomy was performed using a ventral midline approach (Fig.05). The affected spleen containing the tumour was removed by total splenectomy using a vessel-sealing device (Fig.06, Fig.07).

Post-operative Care and Outcome

Post-operatively, all dogs received antibiotics, fluid therapy, and analgesics for three days. Skin sutures were removed on the 14th post-operative day.

No post-operative complications were observed, and all five dogs recovered uneventfully, showing marked improvement in appetite, activity, and overall quality of life.

Discussion

Previous studies have reported that German Shepherd Dogs and Great Danes are among the breeds most frequently affected by splenic torsion, with a higher incidence in male dogs (Neath *et al.*, 1997) [10]. Deep-chested large breed dogs, particularly German Shepherds, are predisposed to this

condition (De Groot *et al.*, 1992) [1], which is consistent with the findings of the present study.

Konde *et al.* (1989) [8] reported the presence of a large, ill-defined mid-abdominal mass on abdominal radiographs in cases of splenic torsion, similar to the radiographic findings observed in the present cases.

Splenic tumours are commonly reported in older dogs and may present as life-threatening conditions, particularly following rupture (Burgess *et al.*, 2021) [4]. Clinical signs may range from acute collapse to non-specific signs such as weakness, anorexia, and lethargy, which closely matched the presentation of dogs in this study.

Abdominal ultrasonography is a reliable and validated diagnostic tool for splenic neoplasia. Splenic tumours typically appear as heterogeneous masses with mixed echogenicity, as observed in the present cases (Hristov, 2020) [7].

Total splenectomy remains the treatment of choice for conditions such as splenic torsion, splenic neoplasia, generalized or localized splenomegaly, and immune-mediated haematological disorders in dogs (Aly *et al.*, 2025) [2]. In the present study, total splenectomy resulted in excellent clinical recovery and improved quality of life, particularly in geriatric dogs suffering from life-threatening splenic conditions.

Table 1: Animal's detail

Breed	Age	Sex	Splenic disorder
German shepherd	11 year	male	Splenic torsion
German shepherd	14 year	male	Splenic torsion
Shih Tzu	7 year	Female	Splenic tumour
Labrador retriever	11 year	male	Splenic tumour
German shepherd	10 year	Male	Splenic tumour



Fig 1: Splenic enlargement and location of spleen in mid abdomen



Fig 2: Heterogeneous mix echotexture splenic mass

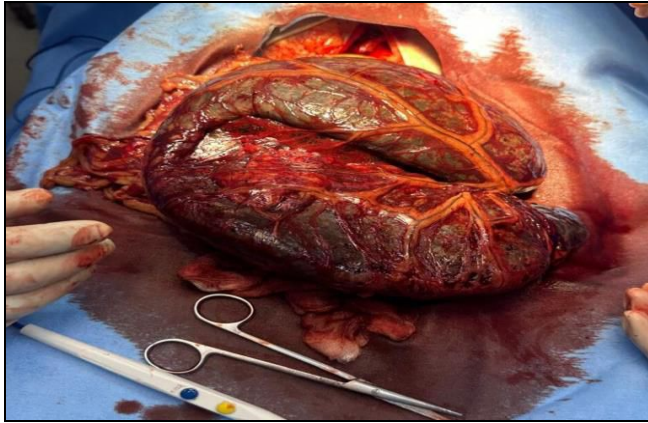


Fig 3: Splenic torsion



Fig 4: Total splenectomy of torsion spleen



Fig 5: Mid-ventral approach for splenectomy



Fig 6: Total splenectomy of splenic tumour



Fig 7: Vessel sealer

Conclusion

The present case reports suggested that splenic torsion and splenic tumour can occur in geriatric dogs with or without specific clinical signs. Ultrasound and radiographic procedure aid in diagnosis of such conditions. Total splenectomy is highly effective therapeutic intervention in cases of splenic torsion and splenic tumours, as it prevents progressive splenic necrosis, systemic shock and further dissemination or metastasis of neoplastic tissue and contribute to improve quality of life and survival in geriatric dogs suffering from life threatening splenic disorders.

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