Splenectomy: Always Easy? - by Richard Jerram

Tai, the dog presented in this newsletter, was a challenging splenectomy case. On entering the abdomen it was apparent that there was an emphysematous splenic torsion that had ruptured prior to surgery. The abdomen was full of fetid, dark fluid limiting visualization of the abdominal contents. Suction of approximately 4 litres of this fluid was required prior to evaluating the remainder of the abdomen. The splenic vessels were tightly torsed and thrombosis of the splenic vein and artery was evident. The splenic pedicle was ligated with large gauge monofilament absorbable suture material (PDS) without untwisting the torsion. Other smaller vessels were ligated with finer suture material or cauterized. The remainder of the abdomen was explored; no other abdominal abnormalities were detected. Prior to closure, the abdominal cavity was extensively lavaged with a total of 5 litres of sterile saline solution with suction performed after each litre was infused. The use of a quality suction unit and electrocautery were essential in helping this procedure be performed rapidly and accurately.

Curiously, splenectomy in dogs was reported as early as the 16th century, goodness knows what their anesthesia protocol was!! It is well recognized that the dog can live without a spleen and splenic surgery is probably the most frequent intra-abdominal procedure encountered in companion animals after routine ovariohysterectomy. The spleen is suspended by the greater omentum and attached to the stomach by the gastrosplenic ligament that contains the short gastric blood vessels. The spleen functions as a reservoir and maintenance organ for red blood cells as well as providing immune and hematopoietic abilities.

Splenectomy is most commonly indicated for mass (neoplasia or hematoma), trauma, and torsion. In most cases, complete splenectomy is recommended; however, occasionally partial splenectomy is indicated. Complete splenectomy can be performed by ligation of the individual hilar vessels or by ligation of the major splenic vessels and the short gastric vessels. The latter technique is quicker and does not compromise blood supply to the stomach wall. Unfortunately, many splenic masses have a large number of omental adhesions making dissection of the larger vessels difficult, necessitating careful ligation of vessels along the splenic hilus.

Some key points regarding splenic surgery:

- Have banked or fresh blood available as intra-abdominal bleeding due to splenic rupture can cause profound anemia.
- Autotransfusion of abdominal blood can be performed if the spleen has had a traumatic rupture.
- Make the laparotomy long enough to be able to exteriorise the spleen comfortably.
- Use laparotomy sponges to isolate the diseased spleen and manipulate the spleen carefully to avoid rupture.
- Surgical suction and a surgical assistant are useful to enable accurate visualization and to make the procedure faster.
- Always double ligate the major splenic vessels (I prefer to isolate the artery and vein separately in large dogs).
- Watch for omental bleeding and ligate if necessary.
- Look out for and avoid the left lobe of the pancreas.
- Always send a section of spleen for histopathology as hematoma and hemangiosarcoma are indistinguishable grossly.
- Don't untwist a splenic torsion as this can release thrombi and vasoactive substances into the general circulation.
- Surgical stapling devices can speed up the surgical time.
- Do a prophylactic gastropexy in dogs predisposed to gastric dilatation-volvulus (GDV).
- Hemorrhage is the most common complication following splenectomy and is generally related to failure of ligatures.
- Cardiac arrhythmias are common postoperatively but generally do not require treatment, however, lidocaine (2mg/kg) should be immediately available.
- Remember that hemangiosarcoma only represents < 24 % of all splenic masses so do not euthanase a dog based on the gross appearance of the spleen.

Lateral & VD radiographs of Tai's abdomen.
Note the ill-defined structure revealing multiple gas filled radiopacities of various size, giving a honeycomb appearance. Tai's severe weight loss resulted in poor abdominal detail and an impression that the radiograph is over-exposed.