



Splenectomy as a Laparoscopic Procedure

The introduction of Minimal Access Surgery to all surgical disciplines has been one of the most important developments in modern medicine. Laparoscopy, a form of Minimal Access Surgery, has been the greatest advance in abdominal and pelvic surgery for decades. Cholecystectomy, the flagship of laparoscopic abdominal surgery, has benefited millions of people, worldwide, since 1990.

Anecdotally, I recall attending a lecture, given in 1992, by Alfred Cushieri, regarded as the father of laparoscopic surgery in Britain and Europe. He predicted “that every abdominal operation could potentially be performed laparoscopically and hence that laparoscopic surgery may have no boundaries”. This may be true. However, to what benefit of the patient? Only a relatively few laparoscopic procedures have survived scientific scrutiny, showing a proven benefit over the “open” procedures. In addition to cholecystectomy, these include the following procedures:

- anti-reflux and hiatal hernia surgery
- diagnostic and “staging” laparoscopies in malignancy together with palliative bypass procedures, inguinal hernia surgery in men, in particular for bilateral or recurrent hernias
- bariatric surgery
- splenectomy
- benign colorectal disease and more recently Colon cancer. (Rectal cancer unproven). retroperitoneal biopsies (suitable in the lower abdomen and pelvis only)
- appendicectomy (unproven benefit over “Minimal Access Open Surgery)

Since the early days of laparoscopic abdominal surgery, splenectomy was regarded as a natural progression for the laparoscopic surgeon. The only limitation has been the relatively few medical indications for this procedure. The spleen lends itself to laparoscopic removal because of its “end organ” vascular status, easy accessibility, and its well defined anatomical attachments.

Since the first laparoscopic splenectomy, reported by De Laitre, in 1991, several technical developments have facilitated this operation:

1. Positioning: in the semi-lateral position (60 degrees to horizontal) is preferable, with a “broken” operating table. This exposes the spleen perfectly, and allows adjacent structures to “fall away” and opens the space between the lower costal margin and the iliac crest.
2. Ultrasonic dissector: allows control of the short gastric vessels and division of the lieno-renal splenicocolic, splenogastric and lienophrenic ligaments.

SPLENECTOMY AS A LAPAROSCOPIC PROCEDURE (CONT.)

3. Articulating endovascular stapler: suitable for vascular control of the splenic artery and vein.
4. Extraction bag: following division of all attachments, the spleen is inserted laparoscopically into an extra large Endocatch extraction bag, which prevents spillage of splenic tissue thereby obviating the formation of splenic “rests”. The spleen is removed via a 12 mm port site after morcellation within the extraction bag.

The past three decades have seen major changes in the treatment of splenic disorders. These changes were partly based on the scientific evidence indicating that splenectomy renders the patient at lifelong risk for increased susceptibility to infections. The most serious of these infections is the overwhelming post splenectomy infection (OPSI), which occurs in 0.5% of trauma patients and with an incidence of 10 to 20% of patients who have haematologic diseases. The mortality associated with Opsi is between 50 and 70%. Sepsis as a cause of death is 200 times more prevalent in the splenectomised patient than in the general population.

Splenectomy is performed with several possible intentions:

Treatment of primary and secondary hypersplenism, and thirdly for diagnostic and staging purposes in primary haematologic diseases. Primary hypersplenism may be caused by any of the three types of congenital red cell disorders associated with haemolytic anaemias: membrane disorders; haemoglobinopathies; and erythrocyte enzyme deficiencies. Secondary hypersplenism may be associated, myelo- and lymphoproliferative disorders, and in portal hypertension.

The commonest indication for splenectomy is ITP, the spleen itself intrinsically normal and surgery performed to prevent thrombocytopenia associated with the antibody-laden platelets sequestering in the spleen.

Other conditions which may require splenectomy include splenic infarcts, cysts, tumours, splenic artery aneurysm, sarcoidosis, Gaucher’s disease, and pancytopenia in Felty’s syndrome. Benign cysts and tumours may be suitable for partial splenectomy, which can now be safely performed laparoscopically. With regard to splenic injury in trauma patients, conservation remains the mainstay of therapy. In the event of surgery being required, spleen preserving procedures are performed, and this remains within the domain of “open” surgery.

The laparoscopic procedure is the “gold standard” for splenectomy in 2008 supported by substantial scientific medical evidence, accrued during the past sixteen years.