Anatomy of laparoscopic splenectomy; case report

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Abstract

Splenectomy when performed by laparoscopy is associated with less morbidity compared to open surgery. It also has a cosmetic advantage due to smaller wounds. The case discussion illustrates the anatomical landmarks and relationships during a laparoscopic splenectomy.

Key words: laparoscopy, splenectomy, anatomy

Introduction

Splenectomy is done electively for benign and malignant haematological conditions. It is well established that splenectomy is curative for benign hematological conditions especially immune thrombocytopenic purpura where excessive destruction of platelet occur. When performed by laparoscopy the morbidity is reduced. Understanding the attachments, blood supply and anatomical relationships is the key for port placement and dissection. One should appreciate that dissection happens in retroperitoneal and peritoneal compartments.

We present a patient who has undergone laparoscopic splenectomy for immune thrombocytopenic purpura, discussing the anatomical landmarks.

Case report

A 19 year old female, diagnosed patient with immune thrombocytopenic purpura was referred from haematology clinic for splenectomy. Ultrasound scan of the abdomen revealed a normal size spleen. Laparoscopic splenectomy was planned. Preoperative vaccination was arranged 2 weeks prior to surgery.

Positioning of patient

Patient was placed in right lateral decubitus position after general anesthesia with endotracheal intubation. Nasogastric tube was inserted to decompress the stomach. This positioning helps to push away the transverse colon, splenic flexure from the field of dissection.

Port position

5 ports were used. 10 mm camera port inserted just above and lateral to the umblicus after creating pneumoperitoneum with veress needle. 2 more ports were inserted in epigastric area and another 2 ports were inserted in left sub costal area.

The surgery began with identification of spleen, stomach, transverse colon, splenic flexure and gastrocolic omentum. (Figure 1)

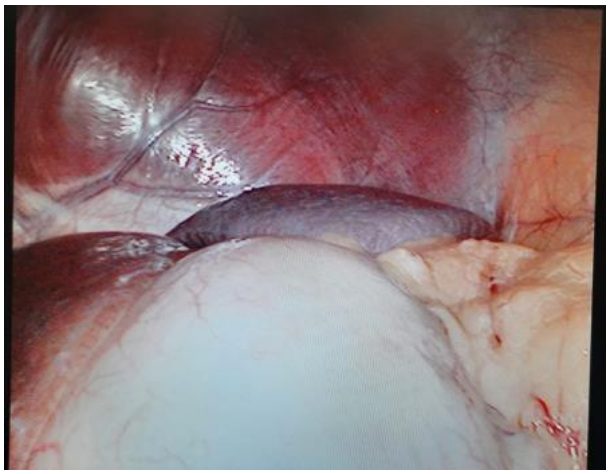

Figure 1

Spleno-colic ligament divided and lower pole of spleen released. Gastrocolic omentum divided and entered into lesser sac. splenunculi noted at splenic hilum.

Gastrosplenic ligament dissected and short gastric vessels divided. (Figure 2)

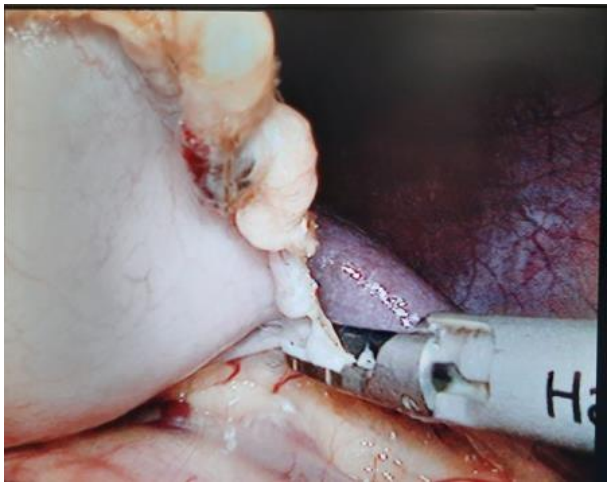

Figure 2

Splenic artery was identified at the upper border of pancreas and ligated and divided between clips. (Figure 3) The tail of the pancreas was lifted up to identify the splenic vein which is posterior to the pancreas. This two was divided between clips. (Figure 3)

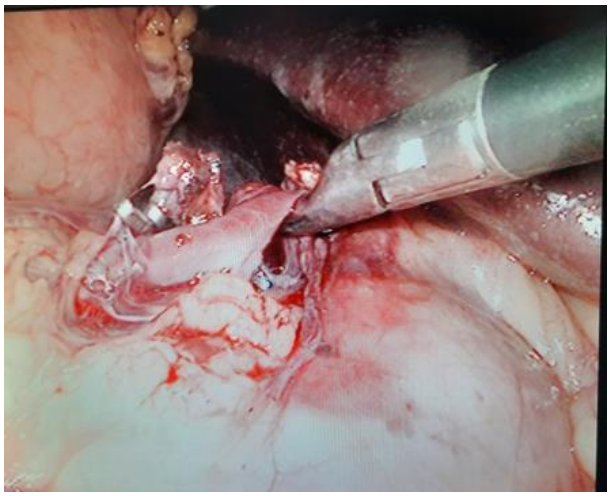

Figure 3

Splenic hilum approached and pancreatic tail was preserved with care.

Spleen dissected out from all the attachments and delivered through a pfannenstiel incision. (Figure 4) This allows the scar to be hidden under cloths.

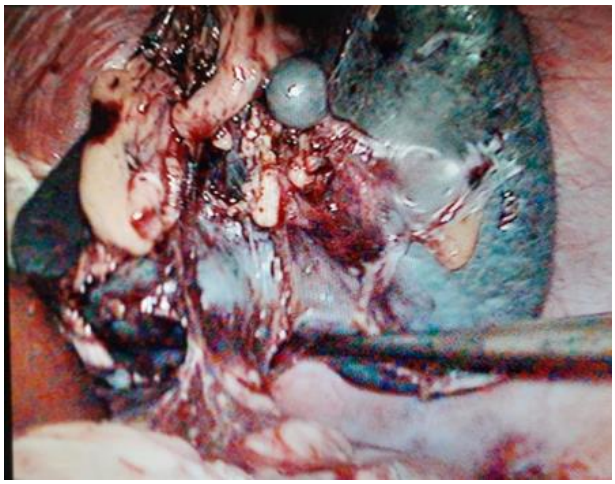

Figure 4 - Splenictomy specimen

Splenic bed relooked to exclude bleeding. Tube drain was inserted after achieving hemostasis. Layered closure of pfannenstiel incision was done.

Post operative care

Patient was managed in the acute side bed in the ward. She had minimal analgesic requirements. She was discharged on the 3rd post-operative day.

Discussion

During laparoscopic splenectomy exposure of the spleen on the left upper quadrant can be technically difficulty especially in obese patients. Also, advanced technical skills and equipment are needed to control the splenic blood supply. Injury to the tail of the pancreas during dissection of the splenic hilum may result in pancreatitis. Therefore, the knowledge on anatomical landmarks are essential for the surgeon, especially because laparoscopic splenectomy has several advantages over open splenectomy[1–4]. The studies comparing open and laparoscopic approaches in the literature shows that laparoscopic approach results in less pain, shorter hospital stay, less morbidity and mortality, earlier return to job, and earlier start to diet. The indication for two approaches are similar in literature but laparoscopic splenectomy is widely used in patients with hematologic diseases like idiopathic thrombocytopenic purpura (ITP). These patients are more prone to wound infections and dehiscence as they use corticosteroids1. Therefore having smaller incisions is a big advantage reducing the incidence of wound complications.

Conclusion

Appreciating the attachments of spleen, it's blood supply and related organs as discussed under method is the key for successful and safe surgery.

Acknowledgement

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Conflict of interest

None

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