Abstract;

Laparoscopic splenectomy is one of the advanced surgical procedures with indications gradually increasing in hematological diseases. This is a review of five cases operated upon over two years. All were female patients, three with ITP and two with thalassemia. In one with gall bladder stones, laparoscopic cholecystectomy was done with splenectomy. The mean operative time was 3 hours and 30 minutes. No case was converted to open technique. There were no intra-operative or post-operative complications with optimum patient response over the six month follow up; no steroids were required for the ITP patients and no more blood transfusions for the thalassemia patients.

Introduction:

The earliest reports of laparoscopic splenectomy (LS) came in 1992 since when this procedure has become one of the most widely used laparoscopic procedures for solid organs. LS is becoming the gold standard in the treatment of several splenic diseases with shorter post-operative stay and more rapid return to full activity being the primary advantages. Our aim in this study was to evaluate our results in LS over two years.

Patients and Methods:

The medical records were reviewed of five patients who underwent LS between 1st January 1999 and 31st December 2000. All the patients were female with a mean age of 31.5 years. Three had ITP and two had Thalassemia major. The patients were referred for surgery by the treating hematologist.

Pre-operative investigations included the blood Hb, platelet count, coagulation profile and in some cases abdominal U/S.

All the patients received polyvalent vaccine one week before the operation and pre-operative antibiotics during the induction of anesthesia. Patients who had been given steroids for their primary disease were maintained on parenteral steroids through the perioperative period.

The standard surgical technique was the same for all the cases. The patients were positioned in a supine position with elevation of the left side; four or five 10mm ports were used; the spleen was extracted using a plastic endobag then the specimen was delivered either from the supraumbilical wound or the left lumbar wound by fragmentation. In all cases there was routine inspection for the presence of splenules in the splenic hilum, gastro-colic ligament, pancreatic tail, greater curvature of the stomach and the pelvis in descending order. The splenic hilum was either clamped piecemeal using clips or divided using endostapler. Post-operatively the haemoglobin level and the platelet count was followed.

Results:

The three patients with ITP had received high doses of steroids over periods of six to seven months and one patient a cytotoxic drug (Imuran) with no or only minimal response. Their pre-operative platelet counts ranged between 6000-20000/ml. In the immediate post-operative period the platelet counts increased to 200,000-250,000/ml.

Follow up over six months showed complete response with no need for steroids, the dose of which was reduced gradually over a two week period and the platelet counts ranged from 93000/ml to 250000/ml.

Two patients had Thalassemia major with severe anemia requiring frequent blood transfusions. One had gall stones. Their pre-operative hemoglobin level was between 5-6gm. One patient was treated with LS alone, the other with LS and laparoscopic cholecystectomy. Both patients responded well with the Hb level between 9.5-10 gm and no need for blood transfusions over six months follow up.

One splenule was found during the routine operative check, which was removed with the spleen. The estimated mean
operative blood loss was 200ml. All the patients needed 500-1000ml of blood transfusion whether during the operation or in the immediate post-operative period. A closed drainage system (Portavac) was required in four patients. The splenic vessels in the linorenal ligament and the short gastric vessels were divided using ondolclips and in two patients an endostapler. The mean operative time was 3 hours and 30 minutes. No case needed conversion to an open technique. Only one patient needed one-day admission to the intensive care unit due to difficulty in extubation.

Discussion:

Laparoscopic surgery has recently extended its indications and has become an acceptable surgical approach for splenectomy\(^5\). LS is reported by most authors to be as safe as open splenectomy for hematological diseases. It also has several advantages over the open approach, such as shorter and less complicated post-operative stay with better cosmetic results and more rapid return to full activities\(^4\).

LS for ITP is safe and effective and is associated with low morbidity and fast recovery. Thus LS may be considered earlier in the course of ITP\(^5\), as is clear from our results which showed rapid and long lasting remission in patients with ITP. In patients with hemolytic anemia such as thalassemia who need frequent transfusion, as in our cases, laparoscopic surgery will not only give the option of splenectomy but also cholecystectomy at the same time, since some of these patients are prone to gall stones as in one of our patients. The post-operative follow up showed optimum results with no need for blood transfusions and acceptable Hb levels over six months.

Some authors advise a lateral approach claiming that it provides clear visualization of the splenic hilar structures which diminishes the risk of injury to the spleen or the tail of the pancreas\(^6\). In our experience the supine position with elevation of the left side brought good results.

An often-mentioned criticism of LS is the potential of missing accessory spleens. In one series the incident of accessory spleens removed laparoscopically was 15%\(^7\), almost the same as our series, which was 20% due to the routine inspection for the accessory spleens during the operation to prevent recurrence of the primary disease.

LS is associated with a learning curve, with a high incidence of conversion in the early procedures\(^8\) but no case was converted to open surgery in our series.

Compared with open splenectomy LS required more operating time and had the potential to cause more blood loss \(^9\). In our series the mean operative blood loss was 200 ml. All the patients needed blood transfusion whether intra-operatively or post-operatively.

Conclusion:

LS is one of the advanced surgical procedures, which, in the hands of experienced surgeons, can replace open splenectomy for the treatment of some hematological diseases with low intra-operative and post-operative complications and optimum therapeutic results.

References:

5. Szold-A; Schwartz-J; Abu-Abeid-S; Bulvik-S; Eldor-A. Laparoscopic splenectomies for idiopathic thrombocytopenic purpura; Experience of sixty cases.