Experience of Splenectomy for Various Medical Disorders

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A study of 28 patients who underwent splenectomy for various haematological disorders over a period of four years is presented. There were 16 male and 12 female patients. Age ranged between 12 to 64 years, average being 19 years. Those who underwent splenectomy, 10 were suffering from thalassaemia, 8 had idiopathic thrombocytopaenic purpura (ITPP), 6 had hereditary spherocytosis, 2 had chronic myeloid leukaemia and hypersplenism in 2 patients. All except 3 had palpable spleen. Six patients had massive splenomegaly (more than 3000gm in weight). The morbidity rate was 30% and mortality nil. Average duration of hospital stay was 7 days. It is concluded that selected patients with haematological disorders benefit from splenectomy, which is a safe procedure in experienced hands.

Key words: Splenectomy, Thalassaemia, idiopathic thrombocytopenic purpura, hereditary spherocytosis.

That the asplenic state is compatible with life, was first observed by Aristotle and later confirmed by Wren and Morgagni in 17th & 18th centuries[1] . The first splenectomy for haematological disorders was performed in 1549 by Adrian Zaccarello[2]. In 1866 Sir Thomas Spencer Well from England described his successful splenectomy in detail[3]. In 1928 William Mayo described a series of 500 splenectomies with mortality rate of 10%. In 1953, King and Shumacker reported an increased susceptibility to infection and death from sepsis in infants who underwent splenectomy for congenital spherocytosis[1]. In 1966 Stumia and Bassert in their study described the effectiveness of splenectomy in medical diseases like hereditary spherocytosis, idiopathic thrombocytopaenic purpura, autoimmune haemolytic anaemia and hypersplenism due to other causes[4].

This study was conducted to determine the saftey and effectiveness of splenectomy for various medical diseases and morbidity and mortality associated with splenectomy.

Patients and Methods

During study period of four years starting from January 1993 to December 1996, 28 patients underwent splenectomy for various haematological disorders by the authors at Mayo Hospital and Sir Ganga Ram Hospital, Lahore. These patients were assessed clinically both by a physician and a surgeon. Haematologist was also consulted before submitting these patients for splenectomy. Preoperative investigations included full blood count, peripheral blood picture, bleeding, clotting and prothrombin time, renal and liver function tests, red cell fragility test, haemoglobin electrophoresis and bone marrow biopsy where indicated. Radiological investigations included X-ray chest and ultrasonography of abdomen. Conservative treatment with steroids was tried where indicated. Prophylactic antibiotics were given. All patients were operated by consultant surgeons. Mid line or left paramedian incision was made depending upon the size of the spleen. Splenic artery was ligated first, followed by ligation and division of splenic vein and short gastric vessels and removal of spleen. A search was made for splenenculi and if present, were also removed. Cholecystectomy was also done in patients with gall stones. Tube drain was placed in splenic bed and kept for two to three days.

Results

During the study period a total of 28 patients (16 male and 12 female) underwent splenectomy for various haematological disorders (table 1). Age ranged between 12-64 years, average being 19 years. Thalassemia was the most common indication for splenectomy (36%).

Table 1 Indications for splenectomy

Indications	n=	%age
Thalasemia	10	36
ITPP	8	29
Hereditary spherocytosis	6	21
Chronic myeloid leukaemia	2	7
Hyper splenism	2	7
Total	28	

Majority of patients (80%) were referred either by physician or paediatrician for splenectomy when medical treatment failed and rate of blood transfusion was unacceptably high. Two patients of chronic myeloid leukaemia underwent splenectomy. Both had massive splenomegaly (more than 3Kg). One of them presented with acute abdomen as a result of torsion of spleen. Both cases of hypersplenism had tropical splenomegaly. In three patients of ITPP the spleen was not enlarged. Eighty four percent patients showed overall improvement after splenectomy in terms of general health and reduction in number of blood transfusions. All patients of hereditary spherocytosis showed marked improvement in state of general health. Amount of blood transfused dropped from 18 pints of blood to 2 pints per year on average. Eight out of 10 patients of thalassaemia also improved. Rate of transfusion decreased from 12 pints per year to 3 pints per

year. They showed marked improvement in growth and general condition.

Relapse occurred in 25% of patients of ITPP who required restoration of steroid therapy. Improvement in haemoglobin was noted in both cases of tropical splenomegaly and patients felt relieved after operation. All patients were given antibiotics and Pneumococcal vaccination postoperatively.

Thirty percent patients developed various complications as shown in Table 2.

Table 2 Complications

Complications	n=.	%age
Pulmonary complications	4	31
Haemorrhage	3	23
Thrombocytosis	2	15
Wound infection	3	23
Haemetemesis	1	08
Total	13	

There was no death in this series. Duration of hospital stay ranged between 5-14 days, average being 7 days.

Discussion

There are certain haematological disorders which are cured by or improve with splenectomy. These include symptomatic hereditary spherocytosis, chronic ITPP, warm antibody autoimmune haemolytic anaemia which has failed to respond to steroid therapy and some cases of genetic red cell enzymopathy such as pyruvate kinase deficiency[5] . In our study 85% of patients showed considerable improvement regarding their general condition and reduction in rate of blood transfusion.

The commonest indication in this study was thalassemia and most of the patients were in adolescent period. Majority (70%) of them were referred by consultant paediatrician of Sir Ganga Ram Hospital involved with Thalassaema Welfare Society.

In this series 8 patients with ITPP, who either did not respond to steroids or relapsed after completion of steroid therapy, underwent splenectomy. The relapse occurred in two patients which may be due to presence of ectopic splenic tissue or significant hepatic sequestration[6].

Splenectomy for hereditary spherocytosis was done in six patients, all of them had good response. Three of them had multiple gallstones for which cholecystectomy was also done. Two patients were real brothers and their father had splenectomy for the same disease 20 years back.

Two patients of chronic myeloid leukaemia with massive splenomegaly were over 60 years of age. Both were thin build and disabled by enormous weight of spleen compounded by strangulation in one of them.

In the tropics, massive enlargement of the spleen occurs frequently. Associated anaemia and Thrombocytopenia usually responds to splenectomy as happened in two of our patients. Post operative antimalarial prophylaxis should be given as splenectomy reduces immunity to malaria in these cases.

There was no mortality in this series and morbidity was 30% as compared to other series which showed an early mortality of 0-5% and morbidity of 26-65%[7,8,9]. Post operative pulmonary complications and wound infection are common in children[10,11]

As a preventive measure, in children the 23 valent pneumococcal vaccine is given two weeks prior to surgery. In addition, H. influenzae 6 and meningococcal vaccines are also recommended for asplenic children[12]. The duration of antibiotic prophylaxis is controversial, some recommend until the age of 18 years in children and for 5 years in adults[13].

In conclusion, there is a definitive role of splenectomy in certain haematological disorders. Surgeons should discuss the patients with referring physician, paediatrician and haematologist and decision for splenectomy should be jointly made.

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