

# Role of Splenectomy in Medical Disorders

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## ABSTRACT

During study period of ten years 36 patients underwent splenectomy for haematological disorders. Twenty four patients were male. Age ranged between 12-64 years. Those underwent splenectomies, 12 patients had thalasaemia, 18 patients had idiopathic thrombocytopenic purpura, 4 had hereditary spherocytosis and two had hypersplenism. Eighty four percent patients showed improvement of general health and number of blood transfusions required. Morbidity rate was 21% in the series. Average 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, idiopathic thrombocytopenic purpura, hereditary spherocytosis

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## INTRODUCTION

Asplenic state is comparable with life was first observed by Aristotle and later confirmed by Wren and Morgagni<sup>1</sup>. Adrian Zacacello in 1549<sup>2</sup> performed first splenectomy for haematological disorders. Sir Thomas Spencer in 1866 described successful splenectomy procedure<sup>3</sup>. William Mayo in 1928 described a series of 500 splenectomies with mortality rate of 10%<sup>2</sup>. King and Schumaker in 1953 reported an increased susceptibility to infection and death from sepsis in infants who underwent splenectomy for congenital spherocytosis<sup>1</sup>. Stoma and Basset in their study described the effectiveness of splenectomy in medical disease like hereditary spherocytosis, idiopathic thrombocytopenic purpura (ITPP), autoimmune haemolytic anaemia and hypersplenism due to other causes<sup>4</sup>.

This study was conducted to determine the safety and effectiveness of splenectomy in medical diseases and morbidity and mortality associated with splenectomy.

## PATIENTS AND METHODS

During study period of 10 years starting from January 1998 to December 2007, 36 patients underwent splenectomy for haematological disorders in North and West Surgical Units of Mayo Hospital, Lahore. These patients were assessed clinically by physicians and haematologist before being submitting for splenectomy. The surgical team clinically assessed the patients and prepared these patients for surgery in consultation with physicians and anaesthetist. Preoperative investigations,

included full blood count, peripheral blood picture bleeding, clotting, 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 abdominal ultrasound and CT abdomen where indicated. All patients were given pneumococcal vaccine two weeks prior to surgery. Prophylactic antibiotics were administered. All patients were operated by consultant surgeons. Incision was made according to the size and site of spleen and surgeons preference. Splenectomy was performed by ligating splenic artery first technique. A search for spleniculi was made and where found was removed. Cholecystectomy where indicated was performed. Drain was placed in splenic bed if required.

## RESULTS

During the study period 36 patients underwent splenectomy for haematological disorders as shown below.

Table 1

Indications	N=	%age
Thalasaemia	12	33.33
ITPP	18	50.00
Hereditary spherocytosis	4	11.11
Hypersplenism	2	05.56

Out of 36 patients 24 were male. Majority of patients were referred by physicians after failure of medical treatment. Both cases of hypersplenism had tropical splenomegaly. Eighty four percent patients showed improvement of general health and number of blood transfusions required. Eighty percent patients of thalasaemia also showed improvement as their rate of blood transfusion decreased to 3 pints per year.

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Patients developed following post-operative complications as shown in table 2.

Table 2: Post operative Complications

Complications	N=	%age
Pulmonary complications	7	19.44
Haemorrhage	5	13.88
Thrombocytosis	2	05.55
Wound infection	5	13.88

There was no 30 days mortality of this series. Average hospital stay being 7 days.

## DISCUSSION

Hereditary spherocytosis, chronic ITPP, autoimmune haemolytic anaemia and some cases of genetic red cell enzymopathy patients are cured by or improve after splenectomy<sup>5</sup>.

In our study 18 patients with ITPP, who either did not respond to steroid 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<sup>6</sup>.

The second commonest indication in this study was thalasemia<sup>7-9</sup>. In our study 84% of patients showed improvement in their general condition and reduction in rate of blood transfusion. Splenectomy for hereditary spherocytosis was carried out in 4 patients. One female had cholecystectomy before presenting to us for gall stones. One male had symptomatic gall stones for which splenectomy and cholecystectomy were performed at the same time.

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

There was no 30 days mortality in this series and morbidity was 20% as compared to other series which showed an early mortality of 0-5% and morbidity of 26-65%. Postoperative pulmonary complications and wound infection are common in children.

As a preventive measure, in children the 23 valent pneumococcal vaccine is given two weeks prior to surgery. In addition H. influenza 6 and meningococcal vaccines are also recommended for

asplenic children<sup>10-12</sup>. The duration of antibiotic is controversial. Some recommend until the age of 18 years in children and for 5 years in adults<sup>13</sup>.

## CONCLUSION

- Splenectomy has a definitive role in the treatment of certain haematological disorders.
- Splenectomy should be a joint decision of patient, physicians, haematologist and surgeon.

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