The ITP Support Association Platelet Reprint Series

No. 34. Is Splenectomy in ITP still a valid treatment

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Title: **Is Splenectomy in ITP still a valid treatment option today?**

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In Immune Thrombocytopenia (ITP) treatment should be considered on the patient's symptoms and signs rather than on the platelet count as up to 40% of patients will not require therapy. For those with significant bleeding or who are at risk of bleeding there are numerous treatments available, both medical and surgical. Non-surgical treatment includes steroids and immunosuppressant drugs and surgical management is by splenectomy, involving removal of the spleen. Splenectomy surgery has been shown to cause an immediate increase in platelet count in up to 80 % of patients. Despite this, the response is not always sustained and relapses often occur, overall results depending on the length of follow-up and in large studies are no better than 60%. In addition to the failure rate extra caution must be taken when splenectomies are carried out on ITP patients, as they are more likely to bleed during surgery due to the nature of the disease, usually requiring pre-operative preparation to increase the platelet count. There are other complications of splenectomy, based on the immune functions of the spleen. These include a higher risk of infections post-surgery and in the UK, the Department of Health recommends that antibiotic prophylaxis is taken for life after splenectomy surgery, although not all countries recommend this. Splenectomy surgery involves the removal of a healthy organ with the potential risks that entails and its early use has been questioned.

Splenectomy surgery was previously the "gold standard" of ITP treatment and has been carried out for over a century. Although it is considered as one of the few treatments that may lead to cure there has been a decrease in its popularity, primarily as a result of newer medical treatments which may be an effective alternative to surgery. Even though some of the drugs have a wide spectrum of side effects, they are preferred to surgery with its potential complications, including cardiovascular disease, plus the lifelong risk of infection.

The 2010 International Consensus on ITP Diagnosis and Treatment, listed splenectomy as a second line therapeutic option but there has been considerable discussion since then about the clinical place of splenectomy surgery in the management of ITP, which has led to a large discrepancy in practice. The UK ITP Registry has been collecting data on patients with ITP from multiple sites in the UK for many years. There are currently 48 active centres and data has been collected for 1369 patients. The Registry concentrates on adult patients with primary ITP, collecting data at presentation with long term follow-up. As ITP is a relatively rare disease the Registry allows the use of data from multiple hospital centres providing patient numbers which would not have otherwise been possible in the given timeframe.

Over the period covered by the Registry, based on the year of ITP diagnosis, there has been an increased time before splenectomy surgery is carried out and a reduction in the number of operations. The interval before surgery has increased from under one year to over three years. Whilst the mean interval between diagnosis and splenectomies carried out between 1970 and 1975 was approximately 6 months, the mean for splenectomies carried out in 2010 onwards was over 3 years.

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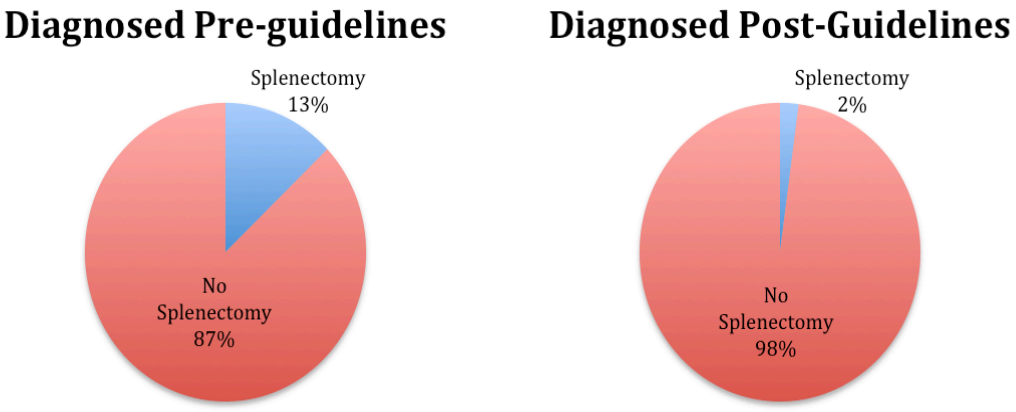
Since the publication of the 2010 guidelines there has also been a substantial (6.5-fold) decrease in splenectomy use. Both groups are of a large size however it should be noted that those diagnosed post-2010 guidelines, have had a smaller time frame for potential surgery.



The increasing interval to splenectomy tends to suggest that patients are being offered alternate therapies before splenectomy and the use of surgery is increasingly being downgraded in the option list. It is however arguably the only curative form of treatment and the question is whether patients likely to respond can be targeted.

Our own studies indicate that Indium labelled platelet scanning is of value before performing splenectomy in ITP. Platelets are extracted from the blood, labelled with a small amount of the radioactive label, Indium, and injected back into the blood stream and their fate followed. Around 60% of patients show a pure or predominant splenic uptake of platelets and they respond well to splenectomy. Among patients with a pure splenic pattern, 95% showed an excellent immediate response to splenectomy and 88% maintained a good long-term platelet count at six months post-surgery. In contrast, the patients with a mixed pattern of liver (hepatic) and spleen uptake displayed a good immediate response but only 16% maintained a platelet response at six months. We no longer offer splenectomy to patients with a pure liver (hepatic) pattern of uptake as the response rate in this group was very low. The 60% who show splenic uptake and are suitable for surgery have a success rate very similar to those who do not have the Indium studies but, of course, we do not see the 40-45% of failure rate as those are excluded from surgery. Interestingly many patients who could benefit from surgery from the studies now prefer to defer the operation and try the newer alternate treatments and keep their spleen intact. Our results with the predictive Indium studies have now been confirmed by groups in France, Spain and Italy.

Splenectomy clearly has a place in the management of ITP however its position as an early option in the steroid relapsed or refractory patient can be questioned and it is not as important as it has been. Alternate therapies are now available. Rituximab may show a response in nearly 60% with a significant proportion remaining in remission at 12 months. The thrombopoietin agonists (Nplate and Revolade) show responses in over 90% and at least a quarter are showing long term remission off all treatment. Both of these options may significantly delay or even completely avoid surgery and as their risk profile is increasingly understood may be a better alternative to the removal of a healthy organ. We believe that splenectomy should be reserved for those where predictive studies indicate an increased chance of long term response and even then other options need discussing.