



No. 37 – Prevention of infections in

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Title: **Prevention of serious infections in adults and older children who have had their spleen removed**

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Splenectomy was the first beneficial therapy for ITP. Ninety-eight years after the first report of successful treatment for ITP in 1913, splenectomy remains a highly effective treatment. Two-thirds of ITP patients who have a splenectomy achieve normal platelet counts and need no further treatment for ITP. An additional 20% of patients will have a partial response, defined as an increased platelet count but not necessarily normal. Only 10-15% of patients do not respond to splenectomy at all and therefore may need additional treatments for their ITP. Although a few patients who respond to splenectomy may have a recurrence of ITP some years later, most continue to have normal, or at least safe, platelet counts indefinitely.

Splenectomy may cause a very small increased risk of infections because the spleen helps the body's immune system to prevent them by filtering germs from the bloodstream. This risk affects anyone who has had a splenectomy for any reason (probably the most common reason being trauma causing a ruptured spleen). People who have had a splenectomy are not at greater risk for common minor infections, such as colds, flu, sinus infections, etc. The documented risk for infection after splenectomy involves very serious infections, including meningitis and "blood poisoning" (also called septicemia or "sepsis"). Fortunately, these serious infections are extremely rare. The most common bacteria causing sepsis and meningitis is *Streptococcus pneumoniae* (called "pneumococcus"). In our combined 70 years as hematologists who care for patients with ITP, only one patient has had critical *Streptococcus pneumoniae* sepsis and meningitis infection following a splenectomy for ITP. This terrible event occurred just last year, 30 years after the splenectomy.

Because of this experience with a serious *Streptococcus pneumoniae* infection, and because we have written recently in this column about the benefits of splenectomy, we now want to describe our approach to the appropriate care for patients following a splenectomy to prevent these critical infections.

Recommendations for prevention of infection after splenectomy are different for children and adults and from one country to another. In England, daily penicillin is recommended for life. In the US, we do not usually recommend that adolescents and adults who have had a splenectomy take an antibiotic every day. In US children, daily penicillin is generally recommended only until age 5 or for at least 3 years following splenectomy. Some *Streptococcus pneumoniae* have become resistant to penicillin, so other antibiotics may be prescribed, especially upon the onset of fever (see below). Therefore, what we write here is what we recommend for our patients in the US. Daily penicillin is not standard care for adults and older children.

We think that these 3 general rules are the best and safest thing for adults and older children to follow when they are having or have had a splenectomy.

Immunizations:

Everyone having a splenectomy should have received immunizations or vaccinations to help protect them against the three most common germs that cause septicemia and/or meningitis: pneumococcus, meningococcus, and *Hemophilus influenzae* type B. Most children and many young adults will have already received one or more of these vaccinations since they are routinely given to everyone, not just those whose spleens will be removed or have been removed. However before splenectomy (ideally at

least two weeks prior to surgery) you should be sure that you have received these vaccinations. Also periodically after surgery revaccination may be necessary. It is extremely important that you check with your physician to be certain that you have received all of the vaccinations necessary to help protect you against infection following splenectomy.

Antibiotics at Home:

Oral penicillin tablets (500 mg for older children and adults) are the most commonly used medicine to take at home as initial protection against septicemia and meningitis by people who have had splenectomy. If you are allergic to penicillin, you need to talk with your doctor about which antibiotic is appropriate for you. You should always keep a small supply (at least 4 to 6 tablets) at home and have them with you when you travel. They are inexpensive and last for a year or more, but you need to refill the prescription whenever the supply gets low. Your doctor may recommend Augmentin (Amoxicillin-Clavulante) or another antibiotic as an alternative to penicillin, if the pneumococcus germs in your region are known to be resistant to penicillin. As indicated below, you should always immediately take one or two of these antibiotic tablets whenever you get a fever 101° (38.3) or higher – before you see your doctor since there could be a delay in your doctor's examination.

Immediate medical attention when you have fever:

Symptoms that seem like the "flu" may really be the first sign of a serious infection. Therefore if you have fever of 101° (38.3) or higher, and especially if you also have chills, headache, neck ache, nausea and vomiting:

Take one or two antibiotic tablets immediately. (If you are already taking daily penicillin, you may want to take one or two extra tablets that could help while you are on your way to the emergency. However if you are already taking daily penicillin, it is possible that an infection is caused by a germ that is resistant to penicillin.)

Then see a doctor immediately and tell him or her that you have had your spleen removed. The doctor will give you additional antibiotics by vein and do a blood culture and other tests. The antibiotic tablets alone will not totally protect you from serious infection.

Summary

These recommendations are for safety. They are the same as other safety rules, like wearing seat belts when you drive and a helmet when you ride a bicycle. We estimate that adhering to all of these recommendations will prevent septicemia following splenectomy in persons with ITP 99.999 percent of the time.