Splenectomy and infection

Information for patients from the Splenectomy Trust

The Spleen
The spleen acts as a part of the body’s natural resistance to infection. It is situated in the upper left-hand side of the abdomen, partly protected by the bottom of the rib cage. The spleen may be removed, or it may cease to function in various diseases. If it is injured in an accident, it may have to be removed to control the bleeding. The surgical operation is called a splenectomy. In a range of disease of blood cells, from some forms of leukaemia to sickle cell disease, the spleen may cease to function properly. If it becomes uncomfortably large as a consequence of such a disease, removal may be the best option.

What does the spleen do?
The spleen helps the body’s defence against bacterial infections. If you do not have a spleen you will be able to cope with most infections, but in some cases serious infection may develop very quickly. The risk of serious infection is higher in children than in adults, although the risk is still very small.

There was a time when the spleen was not thought to be essential to health (like the appendix). Now it is known that people without spleens have a greater risk of severe infection than people with normal spleens. Therefore, doctors try not to remove the spleen unless a splenectomy is either life-saving after injury, or very important in the treatment of a disease that involves the spleen.

What are the risks without a spleen?
The main health risk is severe infection. The risk depends on age and on whether there is another disease present. Children have a higher risk than adults if their spleens are removed. The most common type of infection is by a bacterium, (Streptococcus pneumoniae), (“pneumococcus”).

As its name suggests, it cause pneumonia as well as other infections. In people without spleens, the bacteria are not filtered out of the bloodstream as effectively as they should be, so the infection can progress to septicaemia, a severe and sometimes fatal infection of the blood by a pneumococcus, or other bacteria. The lack of a spleen also puts people more at risk from malaria.

How big is the risk of infection after splenectomy?
The risk of severe infection in healthy people with normal spleens is very low; the chances of dying from severe infection are about the same as those of dying from an accident at home – one in 30,000 per year. Without a functioning spleen, the risk is eight times higher for an adult who has the spleen removed because of injury, and fifty times higher for children without spleens. This is still a low risk, being of the same order as having a fatal road accident. Another way of expressing this risk is; if 100 people without spleens were followed for 10 years, between one and five of them would have severe infection within that period of time.
How long does the risk of infection last?
It used to be thought that the infection risk occurred in childhood and the first two years after splenectomy. While this is true, it is not the complete story. Medical journals have repeatedly published accounts of severe infection in adults more than ten years after splenectomy. It is likely that there is some small life-long increase in risk.

What can reduce the risk?
1. Stop a minor treatable infection becoming a fatal septicaemia
If you are without a functioning spleen, you should consult a doctor if signs of infection appear. The main sign of infection is fever. A severe sore throat, an unexpected cough, severe abdominal pain, a headache with drowsiness, or a rash, are other indications to seek medical advice at once. Remind your doctor that you have had a splenectomy. Ask your doctor about a small stock of antibiotics for you to start at the first signs of infection.

To alert doctors and nurses, carry a card (available from the Splenectomy Trust or your doctor) saying that the bearer does not have a functioning spleen, or wear a Medic-Alert bracelet or necklace. For more about the Medic-Alert system, contact the Medic Alert Foundation. The system backs up the simple notice on the bracelet or necklace with more medical data from an emergency bureau, contacted by telephone 24 hours a day.

2. Vaccine against Pneumococcal Infection
There is a vaccine against pneumococcal infection. The vaccine is a single injection of purified bacterial substances derived from the 23 most common types of pneumococcus. It gives 60 to 70% protection in adults and in children over the age of two. The vaccine has been used in America for 16 years and has a good record of safety. It is recommended by the Department of Health patients without spleens. When possible, the vaccine should be given before the spleen is removed. This will not be possible in an emergency operation after an accident. A booster dose of vaccine five years after the first dose is advised for people without spleens. There is no British policy on tests to see whether booster doses are needed. Remember that vaccination does not give complete protection.

3. Vaccine against Haemophilus Influenzae Type b (Hib) Infection
A vaccine against a second bacterium that can cause serious disease has recently become available. Nowadays, this Hib vaccine is offered to all babies. It is useful for older children and adults without spleens, because they are one of the few groups who tend to get Hib infection after the age of four years. Booster doses are not needed.

4. Vaccine against Meningitis
Meningococcal meningitis and septicaemia is well known as a life-threatening disease. It is more common in people without a spleen. The new conjugated Meningococcal C vaccine (MenC vaccine) is recommended for all people who have no spleen. The meningococcal A&C and ACW135 & Y vaccines give short-term protection, and are advised for people travelling to where meningococcal A or meningococcal W135 disease are common. An awareness of the symptoms of meningitis – headache, vomiting, fever, a rash, drowsiness – remains important, because the vaccines do not cover all types of meningitis and septicaemia.

5. Regular preventative antibiotics
In children, the risk of infection after splenectomy is high enough to justify a tablet of penicillin twice a day, at least until their 16th birthday. The dose is a 125mg tablet up to the age of five years, 250mg tablet from five years onwards. The adult dose is 500mg twice daily, for two years after splenectomy.
There is no standard medical opinion on the exact age at which to stop, or whether to take antibiotics for the rest of your life. For adults more than two years after splenectomy, the risks of infection have fallen to the point that regular antibiotics may not be essential. If the spleen has been removed for an underlying disease which itself increases the risk of infection, regular antibiotics are advisable. But healthy people may not want to take antibiotics daily for the rest of their lives. Your own views about taking regular medication should count. A factsheet cannot replace a consultation with your doctor, who can get and give advice to suit your particular case. Erythromycin is used for people who are allergic to penicillin.

6. Precautions against Malaria
People without spleens should avoid risks of malaria when travelling in tropical countries. Avoid mosquito bites - for example, use insect repellent creams, mosquito nets and screens, wear long sleeves and trousers in the evening and take anti-malarial tablets as prescribed by your doctor. There is no need to avoid all foreign travel, but be sure to take advice about tropical areas.

7. Influenza vaccine
Influenza and other viral infections are not definitely more common in people without spleens. However, influenza can lead to pneumonia, so there is a good case for having the influenza vaccine too. However, influenza vaccine, if used, should be repeated every year. Like preventive antibiotics, if you are going to have this vaccine, you should do so regularly.

8. Animal bites and ticks
Dog bites can cause a rare infection, C canimorus, in asplenic people, so see your doctor about antibiotics if you are bitten. Ticks can carry infections (babesiosis and Lyme disease), so wear long trousers and sleeves if walking in woodlands where there are deer.

In conclusion
If you do not have a spleen, there is a good chance that you may never miss it. But there is a small risk of severe infection, which can be reduced by:

- Acting on the early signs of infection
- Having pneumococcal, Hib and (in some cases) meningococcal vaccines
- Taking penicillin, particularly until aged 16, and
- Avoiding malaria.

Further Information
- More detailed guidance for doctors has been published in the British Medical Journal, 17th February 1996, vol 312; 430-434. (http://www.bmj.com/cgi/content/extract/312/7028/430)

- This factsheet is produced by the Splenectomy Trust which was started in 1993 to increase public and professional awareness. It is a charitable trust fund, administered by Oxfordshire Health Authority.

- For more information please contact either
  - Doctor RT Mayon-White, Oxfordshire Health Authority, Old Road, Oxford OX3 7LG – 01865 226858, or
  - Victor Matcham, The Kent Splenectomy Trust victormatcham@yahoo.com