Surgery: Blood transfusions and transplants

The facts

Blood transfusions were a critical breakthrough at the beginning of the 20th century. In 1900, Karl Landsteiner discovered that blood was divided into four main groups and that certain blood types could not be mixed. Transfusions became possible at last and the loss of blood through operations or injuries could be addressed.

During the late 20th century, increasingly complicated organ transplants have been carried out. Transplants are carried out when an organ is so badly damaged that it no longer works properly.

Other major transplants followed: the cornea, a part of the eye, in 1905, followed in 1954 by a kidney transplant, a liver in 1963, a heart in 1967, lung in 1982 and brain tissue in 1987. Since the 1980s, one of the most well-known transplants has been bone marrow for leukaemia sufferers.

For transplants to be possible there must be organ donors - people who are willing for parts of their bodies to be given to others. For a transplant to be successful the tissues of the donor must be compatible with those of the patient receiving the organ. If not, the patient's immune system tries to reject the organ by treating it very much like an infection. Sometimes the organs are not human, but come from pigs and apes. Some people object to the use of animal organs on ethical grounds they argue that it is wrong to forfeit an animal's life.

Memory time...

• Karl Landsteiner discovered the differences between the main blood groups in 1900.
• During the First World War, sodium citrate was used to stop blood clotting during transfusions.
• the first major heart transplant was performed in 1967.