What is Burkitt's lymphoma?

Non-Hodgkin's lymphoma is a cancer of the lymphatic system. The lymphatic system is part of the body's immune system and helps us fight infection. It is a complex system made up of lymph organs, such as the bone marrow, the thymus, the spleen, and the lymph nodes (or lymph glands). These are connected by a network of tiny lymphatic vessels. Lymph nodes are found all over the body.

Lymph is a colourless fluid. It circulates through the lymphatic system. It contains cells known as lymphocytes. Lymphocytes are a type of white blood cell and are an essential part of the body's defence against infection and disease.

There are two main types of lymphocyte: B-cells and T-cells. Most lymphocytes start growing in the bone marrow. The B-cells continue to develop in the bone marrow. The T-cells go from the bone marrow to the thymus gland (behind the breast bone) and mature there. When they are mature, both B-cells and T-cells help to fight infections.

A diagram showing the main groups of lymph nodes in the body (d)

There are more than 20 different types of non-Hodgkin's lymphoma. Burkitt's lymphoma is a type of B-cell lymphoma.
In 1956 a British surgeon called Dennis Burkitt was working in equatorial Africa. He described an unusual type of lymphoma, which was very common in children in that region. This became known as Burkitt's lymphoma.

Later research showed that B-lymphocytes in these children had been infected with the Epstein-Barr virus (or E-B virus). Epstein-Barr virus infections are known as glandular fever or infectious mononucleosis: they are common and usually cause no problems, but in central Africa many of the children had chronic malaria infections, which reduced their resistance to the virus. In some cases this allowed the virus to change the infected B-lymphocytes into cancerous cells, leading to the development of the lymphoma. This is known as classical African or endemic Burkitt's lymphoma.

In one type of non-Hodgkin's lymphoma the tumour cells have very similar appearances under the microscope to those of classical African or endemic Burkitt's lymphoma. This rare condition is still called Burkitt's lymphoma but is known as the non-African or sporadic type.

It seems that in this condition, once again, the Epstein-Barr virus infection can develop because the patient has reduced immunity. The Epstein-Barr virus is able to survive and transforms the normal B-lymphocytes into cancerous cells. However, in the Burkitt's lymphoma seen in the UK, the way normal B-lymphocytes change to cancer cells is less clear and not all cases occur in people who have been in contact with the Epstein-Barr virus.

Signs and symptoms

In the Western world the most common symptom is an abdominal swelling starting in the bowel. Burkitt's lymphoma may also affect other organs such as the eye, the ovaries, kidneys, and glandular tissue such as the breast, thyroid or tonsil. The classical African or endemic type of Burkitt's lymphoma usually affects the jawbone. It can spread to the nervous system, damaging the nerves and causing possible weakness or paralysis. It may also affect the lymph nodes or bone marrow. Some people have loss of appetite and tiredness.
Other symptoms may include sweating at night, unexplained high temperatures, and weight loss. These are described as B symptoms.