Medicine for Managers

Dr Paul Lambden BSc MB BS BDS FDSRCS MRCS LRCP DRCOG MHSM

Myeloma

Myeloma, sometimes called multiple myeloma, has a special resonance for me because my father died from the disease. It remains a disease with many unanswered questions and is a cancer of the plasma cells, a type of white blood cell which normally manufactures antibodies. The cells, which infiltrate the bone marrow, ultimately lead to bone marrow failure.

Myeloma is derived from the Greek word *myelo*- meaning Marrow. Its cause is not understood. The bone marrow which principally manufactures plasma cells is found in the vertebrae, skull, pelvis ribs, shoulders and hips and the long bones of the limbs.

The incidence is about 6/100,000/year. For most people developing the disease there is no family history although the risk is increased three-fold if a close family member (parent or sibling) has the disease. Lowered immunity, caused by drugs which lower immunity or with diseases such as HIV, also increases the incidence.

In a small proportion of individuals (2% aged over 50 and 30% over 70) the onset of the disease is preceded by the development of *monoclonal gammopathy of undetermined significance* (MGUS). These immunoglobulins do not cause symptoms and no treatment is required. Not all patients developing MGUS go on to acquire the disease. It is usually a disease of the seventh decade and is more common in men and people of Afro-Caribbean origin.

The development of the disease may be insidious with unexplained anaemia, lethargy and tiredness, loss of appetite and bone pain. Other features include pathological fractures, gastro-intestinal disturbances, dizziness and confusion, bruising and recurrent bacterial infections.

Symptoms such as fracture or signs such as major biochemical or haematological disturbances or spinal cord compression should be managed by immediate referral to hospital. In other cases investigations should be undertaken to elucidate the diagnosis. Such tests include blood count

and biochemical analysis. Raised calcium in the blood can develop with myeloma because bone disease causes too much calcium to be released from affected bones. A test called electrophoresis of the plasma protein, which separates each type of blood protein, will enable each to be identified and will reveal the MGUS. Urine electrophoresis will reveal Bence Jones protein (an abnormal protein manufactured by the cancerous cells). Confirmation of diagnosis is by microscopic examination of a sample of bone marrow (which will show increased numbers of plasma cells) and skeletal X-rays to show areas of bone destruction (lytic lesions).

Occasionally a patient develops the blood and bone marrow changes of myeloma without any apparent damage to tissues such as the kidneys. It is still formally and rather colourfully known as smouldering myeloma.

Once referred to a haematologist, further examination and investigation is likely to occur. The disease may cause significant anaemia, disturbances of calcium balance and thickening of the blood (hyperviscosity). Patients will also be subject to recurrent bacterial infections. CT or MRI scan may be used to view hard or soft tissues and more complex blood tests will be undertaken.

Once fully investigated the disease may be classified in one of several types which influence the nature and appropriateness of treatment and the prognosis in terms of survival. Myeloma is an incurable disease which is chronic and which remits and relapses. The aims of treatment are to try to control the disease and the symptoms it causes and to prolong survival.

More information is available from

Myeloma UK

Tel: 0800 980 3332

www.myeloma.org.uk

Treatment is complex and may involve autologous transplantation of marrow (harvesting marrow from the same individual) combined with the use of cytotoxic drugs, steroids and also thalidomide (the drug which caused birth defects but which has been found to be effective at destroying myeloma cells). In addition it is usually necessary to have symptom control with pain killers (particularly to control bone pain), radiotherapy or surgery.

Complications of the disease include kidney damage which can lead to failure, raised calcium levels, anaemia, recurrent infections and thickening of the blood (hyperviscosity). One or two patients in every ten develop cord compression which

is a medical emergency and which can result in paralysis, loss of bladder or bowel control or numbness. Treatment is with steroids and radiotherapy but results are variable.

With the newer treatments survival is improving and about four in ten patients survive for five years or more after diagnosis. Regular monitoring of patients with symptoms is vital and, after treatment success is measured by the levels of paraprotein and complete remission is defined as finding no abnormal protein on examination (immunofixation). Patients with MGUS are monitored every 6-12 months for evidence of progression of the disease.

There are trials in progress testing new treatments for myeloma and, over time, the survival rates for the disease will continue to improve.

paullambden@compuserve.com