Solitary plasmacytoma

Plasmacytoma is closely related to multiple myeloma and it is recommended that this leaflet be read in association with the Leukaemia & Lymphoma Research booklet on multiple myeloma.

What is plasmacytoma?

Plasmacytoma is a type of cancer affecting the plasma cells. Plasma cells are a specialised type of lymphocyte which normally produce antibodies.

Multiple myeloma and plasma cell leukaemia are also forms of plasma cell cancer. Plasmacytoma and plasma cell leukaemia are at opposite ends of a spectrum, with multiple myeloma in the middle. Plasmacytoma is a more benign condition than multiple myeloma, although it can develop into multiple myeloma. Plasma cell leukaemia is significantly more aggressive than myeloma and usually requires more intensive treatment.

Solitary plasmacytoma is usually considered to be the diagnosis in cases where only one plasma cell tumour is found. If more than one tumour is found this would be multiple myeloma. The outlook depends very much on where the plasmacytoma is found. If it occurs outside the bone in soft tissues then the outlook is good and it is usually possible to eradicate the disease with radiotherapy or surgery or both. There is a significantly smaller risk of the disease progressing to a form of myeloma when the tumour is outside the bone. Because these conditions are so rare it is difficult to quote exact estimates of risk.

What causes it?

The risk factors for solitary plasmacytoma are the same as for multiple myeloma, which is nearly always a disorder of the middle aged or elderly. These diseases are not found in childhood or adolescence and are, in fact, very rare under the age of 30. The cause or causes of plasma cell malignancies are unknown.

The only well-established associations are with radiation and with employment in certain industries. Among atomic bomb survivors the relative risk of developing myeloma increased with the radiation dose. Exposure to petroleum products might also be a risk factor. Industrial and environmental factors may be of significance in causing this disease.
and it is possible that continual exposure to solvents and air-borne particles may encourage the emergence of abnormal plasma cells.

**What are the signs & symptoms**

When plasmacytoma occurs in bone, patients usually present with pain and tenderness at the site of the tumour. The most common sites for plasmacytoma of bone are the spine and the long bones of the arms and legs.

If the tumour is in soft tissues the symptoms will depend on the particular site of the tumour, for example difficulty with swallowing if the site is the upper part of the digestive system. The most common site for plasmacytoma arising outside the bone marrow is the upper respiratory tract but it can also occur in the gut, the central nervous system, bladder, thyroid gland in the neck, breasts, testicles, parotid (salivary) glands and in lymph nodes (glands).

**How is it diagnosed?**

The X-ray and laboratory findings in a case of plasmacytoma in bone are very similar to those of multiple myeloma. The most important need is for careful investigation to confirm that there is only one tumour present. Special X-ray examinations and possibly a bone scan will be required.

A bone marrow sample will always be required to confirm that there is no evidence of abnormal plasma cells in the marrow. This involves obtaining a small amount of marrow from inside the bone with a needle, and a sample from the bone itself showing the structure of the bone marrow cavity. The first is known as a bone marrow aspirate, the second as a bone marrow trephine. The samples are usually obtained from the back of the hip bone, although the sternum (breast bone) may be used instead for bone marrow aspirates (but not for trephines). The procedure causes some discomfort but does not take very long. The procedure is usually carried out with sedation as well as local anaesthetic.

If the tumour is outside the bone the laboratory tests will again be similar to those for myeloma but special X-ray investigations may be necessary to determine the exact boundaries of the tumour before radiotherapy can be given. Like myeloma, solitary plasmacytomas often produce an abnormal protein and the disappearance of this protein can be used to check on the success of treatment and to screen for any reappearance of the disease.

**How is it treated?**

The outlook depends very much on where the plasmacytoma is found. If it occurs outside the bone in soft tissues then the outlook is good and it is usually possible to eradicate the disease with localised radiotherapy. There may be a recurrence of plasmacytoma in up to 25% of patients but progression to myeloma is rare.

Most cases occurring within the bone will respond well to localised
radiotherapy. There is no evidence that current drug treatments will reduce the likelihood of eventually developing myeloma.

**What is the prognosis?**

See above.