How is cancer diagnosed?

Content

- Screening tests
- Diagnostic tests
- Cancer size and secondary growths

Diagnosis

There is no single, simple method to diagnose cancer. It may take several months or years for malignant cells to multiply to the point where they become a detectable cancer. The symptoms produced by a cancer depend on its location and unfortunately it is possible for cancer to become widespread before it starts to produce any symptoms at all.

Sometimes cancers may be discovered accidentally during routine tests or the investigation of non-specific symptoms.

The cancers that are easiest to detect are those that are on the skin and which show, for example, as a change in a mole or wart. Others may start close to the surface and can be seen or felt as a lump or thickening. There are also some parts of the body that are relatively easy to examine for early signs of cancer such as the mouth and throat, the cervix and vagina or the rectum and anus.

Screening tests

Screening tests have been developed to allow for the early diagnosis of some cancers. Tests that are available include the Pap smear test to pick up abnormalities in cervical cells, often before they become cancerous, mammography (breast x-ray) for the detection of breast cancers at an early stage and faecal occult blood test for the early detection of bowel cancer.

Screening tests are specifically for people with no symptoms of ill health. If you have any worrying symptoms you should visit your doctor who can arrange for appropriate diagnostic tests and refer you to a specialist if necessary.

Warning signs of cancer are non-specific and can include:

- a sore that does not heal
- any unusual bleeding or discharge
- persistent indigestion or difficulty in swallowing
- persistent hoarseness or cough
- a change in normal bowel habits
- an unexplained loss of weight.

The symptoms may not be due to cancer but if they are, early treatment means a greater chance of cure.
Diagnostic tests

There are many diagnostic tests available to your doctor to help determine whether your symptoms might be due to cancer. Which tests are used depends on the symptoms and the suspected location of the problem.

X-rays, CT scans (computers linked to sophisticated x-ray machines), magnetic resonance imaging (MRI), nuclear medicine scans and ultrasound are all methods of forming a picture of the inside of the body. The pictures are interpreted by doctors specially skilled in this work. Most of these procedures are quite painless.

Other methods of internal examination consist of passing long flexible tubes (a bit like a fine telescope with a light at the end) into various passages and cavities of the body to allow direct visual examination. Some examples of these are:

- bronchoscopy (examination of the respiratory system)
- colonoscopy (visualisation of the colon)
- laparoscopy (for examination of the abdominal cavity).

Most of these tests can be done as an out-patient.

It is very important to know the type of cancer (there are over 200 different cancers) that is present as this provides information on how it is likely to behave, where it may spread, the rate at which it might develop and its sensitivity to different treatments. Examining a sample of the cancerous tissue under a microscope is part of this process. The sample may be a scraping of cells (cytology) or a piece of solid tissue (biopsy). A tissue biopsy may be obtained in several ways, including surgical removal of all or part of the tumour. Sometimes a small sample can be taken using a fine needle under a local anaesthetic.

A histopathologist is the specialist in this field and will usually be able to diagnose the type of cancer based on the appearance of the cells under the microscope. Preparation and examination of the specimens can take up to several days which accounts for some of the delays you may experience in obtaining your results.

Blood tests are rarely useful in making a definite diagnosis of cancer, except in the leukaemias where malignant cells can be found in large enough numbers in the blood stream. However abnormalities in a routine blood test can indicate a problem that may prove to be cancer on further testing. Additionally some blood tests may be used to follow the progress of some types of cancer.

Cancer size and secondary growths

In addition to the type of cancer it is also important to assess the size of the primary growth and also look for evidence of secondary growths. There are now many specialised techniques to identify the extent and activity of a cancer often without the need for surgery. It is usually necessary to carry out many different tests, including those already mentioned, to build up a picture of what is happening inside the body.

Sometimes cancer is widespread before it is diagnosed and it may not always be possible to find the primary tumour. Microscopic examination of secondary growths may give some clues as to their origin and a search for the primary cancer can sometimes be successful from the information provided. If the primary cancer cannot be isolated an appropriate treatment plan can still be devised on the information available.

Making an accurate diagnosis can take time and may be a very frustrating or anxious experience. It is very important that you are able to talk to your doctor and ask questions in order to understand what is happening.

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