

ADRIAN POLGLASE

Professor of Surgery

MB BS (Hons), MS, FRACS, FRCS (Eng), FRCS Ed, FACS

CABRINI MONASH UNIVERSITY DEPARTMENT OF SURGERY

COLORECTAL SURGERY
LAPAROSCOPIC SURGERY
COLONOSCOPY

A. L. POLGLASE PTY. LTD. A.C.N. 062 956 843

Colorectal - Malvern

SUITE 20, CABRINI MEDICAL CENTRE
ISABELLA STREET, MALVERN 3144
TELEPHONE 9509 8233 FACSIMILE: 9509 0812
PROVIDER NO 216484K
AFTER HOURS: HOME 9824 7525
CALL SERVICE: 9387 1000

EMAIL: alp@colorectalmalvern.com.au
WEBSITE: www.colorectalmalvern.com.au
www.colonoscopymalvern.com.au
www.laparoscopymalvern.com.au

SOME FACTS ABOUT CANCER

Cancer occurs when the growth process of cells gets out of control. Cancer cells differ from normal cells in a number of ways. Their rate of growth and division is different and they tend to move into the neighbouring tissue or to distant parts of the body.

The body has two circulatory systems – the blood system and the lymphatic system. Cancer cells can travel through either system.

Cancer is a group of diseases, and a cancer can occur anywhere in the body. Some cancers can be easily treated; others are more difficult to reach. They can develop in different ways and at differing rates.

Decisions about cancer treatment therefore have to take into account a wide range of factors, which include individual factors. For this reason it can be misleading to talk to one patient about their treatment and then make conclusions about another patient's disease and its treatment.

There are three major methods of treating cancer.

These are:

Surgery:	the removal of cancerous tissue from the body by operating.
Radiotherapy:	the destruction of cancerous cells with x-ray.
Chemotherapy:	the destruction or inhibition of cancerous cells with drugs.

SURGERY

The purpose of surgical treatment for cancer is to remove all or part of the cancerous tumour and possibly neighboring tissue that may have been invaded by the cancer. Surgery is carried out when it is thought that there is a reasonable chance of removing all the cancer. Sometimes the surgeon cannot tell whether this is possible before operation.

If cancerous cells have entered the body's circulatory system from a tumour, surgery may be used to remove the tumour and additional treatment may be given to deal with the spread.

Cancers that occur in or very close to vital organs of the body such as the heart, brain or liver cannot always be treated surgically.

It is **not** true that an operation by itself will cause a cancer to spread, or that letting the cancer come in contact with the air will cause it to grow more rapidly. It is not true that cancers can only be cured by surgery.

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RADIOTHERAPY

Radiotherapy is the use of highly active invisible rays, either x-rays or gamma rays, to kill diseased cells. X-rays are produced by machines, and may be used either for cancer treatment, or to take pictures for diagnosis (e.g. chest x-rays). Gamma rays are given off by radio-active substances such as cobalt or radium; these substances may be placed in a container in a body cavity or put directly into a tumour. Most often radiotherapy is delivered by a machine operated by a skilled technician called a radiographer.

Because radiation affects both normal and abnormal cells in its path, the radiographer delivers the radiation to an area precisely determined by the radiotherapist (trained medical practitioner) such that the minimum numbers of normal cells are affected. To enhance precision, an outline of the area to be treated is often drawn with a removable coloured dye and neighboring areas of the body are shielded from the radiation.

Radiotherapy is used to treat cancers that either cannot be removed or whose removal would affect the patient's normal functions. Cancers of the cervix and the tongue are examples. Radiotherapy can also be used in combination with surgery if the doctor thinks there is a possibility of cancer cells surviving in tissue near the surgery site. If a tumour is very large or close to vital organs radiotherapy may be used to shrink the tumour before surgery.

Radiotherapy is not painful, but it may cause fatigue. Any other side effects are usually confined to the irradiated area of the body. For example, a person receiving radiotherapy to the throat may experience a sore throat and difficulty in swallowing. These side effects are usually temporary.

Radiotherapy does not make a person radioactive and therefore it is quite safe to be with other people during the course of treatment and afterwards.

CHEMOTHERAPY

Chemotherapy is the use of anti-cancer drugs to kill cancer cells. Because anti-cancer drugs enter the bloodstream and circulate throughout the body, they can kill cancer cells that may have spread to distant parts. Anti-cancer drugs kill cancerous cells by interfering with the life-cycle of these cells. Different drugs attack cells at a different point in their growth, so several drugs are often combined for the most effective treatment. Chemotherapy was first used against leukaemias and lymphomas, but it is now used to control and cure many other forms of cancer.

Because the drugs used in chemotherapy affect normal cells as well as cancerous cells, treatment with these drugs is a balance between the maximum kill of cancer cells and the minimum effect on normal cells. Most anti-cancer drugs disrupt the process of cell division and therefore the normal cells which are most affected are those which divide often, in such tissues as the stomach and intestines, hair follicles, the lining of the mouth and bone marrow. Damage to these cells may result in hair loss, nausea and vomiting and blood deficiencies. Damage to bone marrow in particular affects the level of white blood cells in the blood which may lessen the body's ability to properly control infection, bruising or fatigue. These effects of chemotherapy are always closely monitored.

Adjuvant or preventative chemotherapy is the use of drugs as a precaution in case cancer cells may have spread but remain undetected in the body. Not all anti-cancer drugs have all of the side effects.

CLINICAL TRIALS

New cancer treatments are constantly being developed by researchers. These treatments need to be compared with established cancer treatments to see which is more effective. To do this doctors need to carry out a clinical trial. This means that a group of patients are selected to receive a new treatment program while another group receives the currently established treatment. The results of each treatment are then compared. Clinical trials are only carried out after tests have shown that the new treatment is likely to be beneficial, and that there are no serious side effects. Patients enter a clinical trial only if they agree to do so after being fully informed of all the procedures.

Clinical trials are the only scientific way to prove the effectiveness of a proposed cancer treatment.