

Coming to
Terms with
Cancer

A Glossary of Cancer-Related Terms

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A Note to the Reader

The information contained in this book is not intended as medical advice and should not be relied upon as a substitute for consulting with your physician. This information may not address all possible actions, precautions, side effects, or interactions. All matters regarding your health require the supervision of a physician who is familiar with your medical needs. For more information, contact your American Cancer Society at 1-800-ACS-2345 (www.cancer.org).

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Diagnosis

To distinguish cancer from a benign growth, a biopsy is necessary, which must be done carefully to prevent the spread of cancer cells that could interfere with future surgery. Although needle biopsy may be sufficient for diagnosis, incisional biopsy that provides a larger tissue specimen is usually needed.

Determining Stage

A thorough history taking and physical examination are followed by x-rays, CT, and possibly MRI of the involved area, which is then followed by a bone scan. Chest x-ray and chest CT are also needed. Blood tests include liver function studies.

Considerations

Chemotherapy with multiple drugs has greatly increased life expectancy for most types of cancer. Chemotherapy can usually shrink the cancer before surgery and has enabled limb-sparing procedures, in many instances, to give results equal to amputation. Research continues to devise treatment methods that will improve results while shortening the time needed to complete therapy.

See also Childhood Cancer; Ewing's Sarcoma; Paget's Disease.

BRAIN TUMOR**Overview**

The brain and spinal cord make up the central nervous system (CNS), the site of tumors that arise inside the skull and spinal column as well as those spread from other cancers. However, the term "brain tumor" is used to describe only those originating within the skull, called primary brain cancers, rather than those that have metastasized (spread) to the brain from other parts of the body. They most often affect two age groups: children and older adults (average age = 70 years). It is estimated that approximately 17,200 Americans develop CNS tumors each year and about 13,100 die from them. For unknown reasons, primary brain tumors are becoming more common in all age groups and are second only to acute leukemia as the leading cause of cancer deaths in American children. Metastatic cancer to the central nervous system results from advanced-stage malignancies that usually are fatal.

Type of Tumor and Spread

Central nervous system tumors of adults and children often form in different areas and from different cell types and may have a different prognosis and treatment. Although some tumors grow so slowly as to be considered benign, nearly all that originate in the brain may prove fatal unless removed. They are divided

into two broad categories: gliomas and nongliomas. The former arises in glial cells that support neurons, which are the cells responsible for brain function. Although some gliomas develop slowly, many are glioblastoma multiforme that grow rapidly and always recur following treatment. All gliomas can cause death. Among tumors classified as gliomas are astrocytomas, oligodendrogliomas, and ependymomas. Nongliomas are a diverse group of tumors, which include meningiomas that arise in the meninges (covering of the brain) and are rarely malignant; medulloblastomas; primitive neuroectodermal tumors; nerve tumors, including acoustic neuromas, optic neuromas, neurofibromas—all of which are seldom malignant; craniopharyngioma; and pituitary tumors.

Risk Factors

The large majority of brain cancers are not associated with any risk factors. Brain lymphoma, however, is associated with HIV infection.

Symptoms

All CNS tumors cause symptoms either from growing into and destroying nerve tissue or from increasing pressure within the skull or spine. Symptoms vary widely, depending on tumor location and size. Headache, seizures, gradual paralysis, and personality change are common symptoms. Other symptoms include change in senses (sight, hearing, smell, touch, taste); nausea, vomiting, weakness; difficulty in speaking or walking; and mental deterioration, resulting from destruction of central nervous tissue. Difficulty with bladder or bowel control occurs from tumors involving the spinal cord.

Diagnosis

Findings on physical examination of the nervous system (neurological examination) usually indicate a tumor's location, and CT and MRI are imaging studies that identify the exact site. MRI can sometimes help determine tumor type (glioblastoma multiforme), but biopsy is usually necessary to identify the growth. In cases where surgical removal is not planned, needle biopsy through a burr hole (small opening) in the skull is used to accurately diagnose the tumor. In cases of metastatic cancer, detailed laboratory and x-ray studies are often necessary to determine tumor origin and other sites of spread.

Determining Stage

There currently is no staging system for brain tumors. The most important factors in determining outcome are cell type (astrocytoma) and grade (aggressiveness of the tumor cells).

Considerations

Although the outlook for most malignant brain tumors is poor, surgery, radiation, and chemotherapy can prolong and improve the lives of many patients. The prognosis for children with brain tumors tends to be more favorable. Because the blood-brain barrier prevents most chemotherapy from entering the CNS, newer methods of drug delivery are needed to enable anticancer drugs to pass from the blood into brain tissue.

BREAST CANCER

Overview

The growth and development of the breasts are influenced by estrogen, the primary female hormone produced in the ovaries. During pregnancy, mammary (breast) tissue enlarges in preparation for nursing. In males, breast tissue remains in an immature, child-like state. Although breast cancer is uncommon in young women, it is becoming more prevalent in older females. It affects approximately 10% to 11% of American women, and the number of women who survive has increased over the last decade. It is estimated that approximately 192,200 American women develop breast cancer each year and about 40,200 die from it. African Americans

are more likely to die from this cancer because they are often diagnosed at an advanced stage when breast cancer is harder to treat and cure and because the cancer is often more aggressive. Although male breast cancer is rare, with only 1,500 cases estimated each year, 400 men (27%) die from the disease. For both men and women, the likelihood of survival decreases as cancer involves the axillary (underarm) lymph nodes. In those without spread to lymph nodes, the possibility of survival depends mainly on the size of the cancer. Ten years after starting treatment, 80% of women without axillary lymph node metastasis and 50% of those with lymph node metastasis are alive without cancer. Nine out of ten women with a cancer $\frac{1}{2}$ inch or smaller are usually cured.

Type of Tumor and Spread

Almost all breast cancers are adenocarcinomas that arise either in the milk-producing lobules (glands) or, more commonly, in the ducts through which milk

