



Neuro-Oncology: Brain Tumours and Their Treatment

Fatima Bajwa*

Department of Neurosurgery, University of Minnesota, Minneapolis, USA

*Corresponding author: Fatima Bajwa, Department of Neurosurgery, University of Minnesota, Minneapolis, USA; E-mail: fatima25@gmail.com

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Description

Neuro-oncology is a specialized branch of medicine that deals with the diagnosis and treatment of brain and spinal cord tumours. These tumours arise from abnormal growth of cells in the nervous system and can be malignant or benign. Brain tumours can be a serious and life-threatening condition, and neuro-oncologists play a vital role in managing these patients.

Types of brain tumours

There are various types of brain tumours, including primary brain tumours, which originate in the brain, and secondary brain tumours, which result from cancer that has spread from other parts of the body. Primary brain tumours are classified by the type of cell they arise from, such as gliomas, meningiomas, and schwannomas.

Gliomas are the most common type of primary brain tumours, and they arise from the glial cells that provide support and nourishment to neurons. There are various subtypes of gliomas, including astrocytomas, oligodendrogliomas, and ependymomas. Meningioma, on the other hand, arises from the membranes that cover the brain and spinal cord. Schwannomas arise from the Schwann cells that form the protective covering around nerve fibres.

Symptoms of brain tumours

The symptoms of brain tumours depend on their size, location, and type. Some of the common symptoms include headaches, seizures, weakness or numbness on one side of the body, changes in vision or hearing, difficulty speaking or understanding, memory problems, and personality changes. However, these symptoms can also be caused by other conditions, so it is important to consult a doctor if any of these symptoms persist.

Diagnosis of brain tumours

The diagnosis of brain tumours involves a series of tests, including a neurological exam, imaging studies such as MRI or CT scan, and a biopsy to obtain a sample of the tumor tissue for examination. The biopsy is essential to determine the type of tumour and its grade, which can help guide treatment decisions.

Treatment of brain tumours

The treatment of brain tumours depends on several factors, including the type and location of the tumor, its size and grade, and the patient's overall health. Surgery is often the first line of treatment for brain tumours, as it allows for the removal of as much of the tumour as possible. Radiation therapy and chemotherapy may also be used to kill cancer cells and prevent the tumour from growing back.

Neuro-oncologists work closely with other healthcare professionals, such as neurosurgeons, radiation oncologists, and medical oncologists, to develop a treatment plan that is tailored to the patient's specific needs. They also provide supportive care to help manage the symptoms and side effects of treatment.

The role of research in neuro-oncology

Research is an essential part of neuro-oncology, as it helps to identify new treatment options and improve outcomes for patients. Clinical trials are on-going to evaluate new drugs, immunotherapies, and other treatments for brain tumours. In addition, research is being conducted to better understand the biology of brain tumours and develop personalized treatments based on the genetic makeup of individual tumours.

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