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Commentary

Development of Brain Metastasis

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DESCRIPTION

Brain metastases are cancer cells that originated from primary tumours in other body organs and have now spread to the brain. One of the most frequent mass lesions in the brain is a metastatic tumour. In the United States, brain metastases affect between 24%-45% of all cancer patients [1].

Symptoms and signs

Sub-acute symptoms are present in about 60% of patients with brain metastases [2]. The following symptoms, which are usually related to the tumor's location:

- Headache
- Seizure
- Nausea
- Vomiting
- Nuchal rigidity
- Photophobia
- Cognitive dysfunction
- Motor dysfunction
- Diagnosis
- Lab studies

Blood tests like the CBC, electrolyte panel, coagulation screen, and liver function panel are examples of laboratory investigations.

Imaging analyses

Images are crucial in developing the best treatment strategy because they show the extent of the tumour in the brain and any associated structures, in addition to the rest of the body [3].

- Imaging studies include the following:
- Chest radiography
- Computerized tomography (CT)
- Positron emission tomography (PET)
- Magnetic Resonance Imaging (MRI)
- Management

Both symptomatic and systematic treatments make up medical care. The treatment of cerebral edema, headaches, and seizures has received the majority of attention in the medical management of metastatic diseases [4].

Radiation therapy (including stereotactic, focal, and whole-brain radiation), chemotherapy, combination therapies, experimental therapies, and integration therapy are additional options.

Despite the fact that small-cell lung cancer, breast cancer, and lymphoma respond to chemotherapy, the majority of tumours that metastasize to the brain are not chemo sensitive [5]. Most frequently, whole-brain radiation therapy is combined with two to three chemotherapeutic drugs (WBRT). Radiation therapy is now a widely used treatment for brain metastasis. WBRT and stereotactic radiosurgery are two types of radiation therapy.

For radio-resistant lesions like melanoma, renal cell carcinoma, and non-small cell lung cancer, stereotactic radiosurgery is a more preferred treatment option [6]. Additionally, it is more frequently used to treat the brain metastasis resection cavity, especially in patients with breast metastatic disease.

For solitary brain metastases larger than 3 cm and located in intelligible regions, surgical resection is generally accepted as standard treatment.

- The following are additional indications for surgical resection:
- Limited and/or controlled systemic disease
- Karnofsky score greater than 70
- One symptomatic lesion with multiple asymptomatic lesions

A radiosensitive tumour (such as a small-cell lung tumour) is a contraindication to surgery, as are multiple lesions and a patient life expectancy of less than three months.

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