



BRAIN ABSCESS

A brain abscess is a localised infection within the brain substance containing bacteria or other microbes. The body forms a protective barrier around the infection however the abscess can still expand and cause a reactive swelling in the surrounding brain.

CAUSES

A brain abscess may develop from one of three routes:

- Direct spread from adjacent infected regions ie infection in the ear, the eye or the sinuses.
- Spread from distant infected regions through the bloodstream eg. urinary tract, lung and bone infections.
- Direct implantation of bacteria into the brain substance eg. post-trauma, skull fractures, surgery.

SIGNS AND SYMPTOMS

People with brain abscesses are generally very sick. They may show:

- Systemic symptoms
- Symptoms related to raised intracranial pressure and
- Symptoms related to localized pressure

Systemic symptoms

There will be normal signs of infection with swinging fevers, hot/cold flushes and drenching sweats.

Raised intracranial pressure

Headaches, nausea and vomiting may occur from raised pressure inside the skull from the expanding abscess mass.

Localised pressure

Specific signs of a brain abscess are dependent on the position of the abscess within the brain.

Seizures are common as is a progressive drowsiness and delirium. Neurological deficits like abnormal speech, weakness and numbness may occur.

INVESTIGATIONS

- Blood tests – there are no specific blood tests to diagnose an brain abscess although these may demonstrate the presence of the source of a brain abscess. Routine FBE, electrolytes and clotting profiles will be performed prior to operative removal of a brain abscess. The inflammatory markers (CRP and ESR) will be measured as a marker of the severity of the infection.
- Septic screen – this will include at least 3 blood cultures.
- Radiological tests
 - CT head – a CT head with contrast is diagnostic of a brain abscess
 - MRI head – this gives further information with regards to possible sources of the abscess as well as being able to demonstrate smaller separate abscesses not seen on CT

- Blood tests – there are no specific blood tests to diagnose epilepsy. An FBE, electrolytes and coagulation profile are needed prior to any neurosurgical intervention. Regular drug level checks of anti-epileptic medications will be performed by the neurologist.
- Electroencephalogram (EEG) – this is performed to monitor the electrical interconnections of the brain. It is able to localize abnormal electrical or seizure activity and is used in the immediate post-ictal and inter-ictal period. Video EEG monitoring may be performed in hospital for one day up to one week with seizure stimuli such as sleep deprivation.
- Radiological tests
 - CT brain – this is performed to rule out the presence of a structural lesion as the cause of the seizure (eg tumour, vascular malformation)
 - MRI brain – this is performed to further delineate any underlying brain abnormalities and also gives information with regards to brain volumes
 - SPECT/PET scans – these are performed in the pre-surgical work-up to localize the specific region of abnormality and side of pathology.
- Invasive EEG monitoring – this includes intra-cranial EEG monitoring with subdural grids and bilateral depth electrodes. Further discussion of these are found under operations – Epilepsy surgery.

What type of management is required for people with epilepsy?

Suitable control of seizures with anti-convulsants (medication). Understanding their type of epilepsy, the warning signs, triggering factors and a change of life style to accommodate their condition. Surgical options for the treatment of patients with epilepsy not controlled by medication is increasingly successful. Suitable candidates may be offered surgery.

St Vincent's Private Hospital Melbourne

St Vincent's Private Hospital Fitzroy
Phone: (03) 9411 7111

Website: www.svphm.org.au

St Vincent's Private Hospital East Melbourne
Phone: (03) 9928 6555

Website: www.svphm.org.au

St Vincent's Hospital Melbourne

St Vincent's Hospital Fitzroy
Telephone: (03) 9231 2211

Website: www.svhm.org.au

Neurosurgery

Dr. Kristian Bulluss
Phone: (03) 9416 4619

Dr. Peter McNeill
Phone: (03) 9928 6333

Dr. Paul Smith
Phone: (03) 9639 3889

Dr. Carlos Chung
Phone: (03) 9419 5597

Assoc. Prof. Michael Murphy
Phone: (03) 9416 4619

Dr. Christopher Thien
Phone: (03) 9421 0355

Dr. Tiew Han
Phone: (03) 03 9417

Dr. Brendan O'Brien
Phone: (03) 9417 5033

Dr. Yi Yuen (Ian) Wang
Phone: (03) 9939 7112

Neurology

Prof. Mark Cook
Phone: (03) 9288 3068