

# Brain abscess: Awareness make a difference

Brain abscess is still a common clinical entity in both developed and developing countries. The incidence of brain abscess is decreasing from 1.3/100,000 patient-years from 1935 to 1944 in comparison to 0.9/100,000 patient-years from 1965 to 1981.<sup>[1]</sup> Despite the development of antibiotics with good blood-brain barrier penetrance, the morbidity, and the mortality cause by brain abscess is significant, moreover, almost 25% of the patients are children.

The early diagnosis and immediate institution of a holistic treatment plan is the key of success in management of brain abscess. However, this is always a challenge to the young surgeons as there are a wide variety of causes of brain abscess. The eradication of the source of infection is the most important step in preventing recurrence of the brain abscess after initial treatment or surgical drainage. The causes of brain abscess are divided into three categories, which are contiguous suppurative focus (45-50% of cases), hematogenous spread from distant focus (25% of cases) and trauma (10% of cases). First category includes otologic, rhinologic or odontogenic infections.<sup>[2,3]</sup> Second category includes cardiac diseases, chronic lung infections skin infections, abdominal and pelvic infections, transplantation, esophageal dilatation, injection drug use, and human immunodeficiency virus infection.<sup>[4,5]</sup>

The awareness of various clinical presentations especially the symptoms in relation to the area of brain involved is required in anticipating the source of infections particularly if the primary infection is not apparent. This aspect is well-explained and highlighted by Alvis-Miranda *et al.* in their paper "brain abscess: Current management."<sup>[6]</sup>

The contrast enhanced computed tomography (CECT) still remained the main modality in confirming the diagnosis of brain abscess. The availability of CECT in other hospital apart from tertiary hospital facilitates early diagnosis and referral of these cases from the rural hospital to the neurosurgery team. The use of magnetic resonance imaging (MRI) in these cases is increasing since the past decades. Diffusion protocol in the MRI is specific in differentiating cerebral vascular lesion, cerebral tumor, and brain abscess. Tumor, radiation necrosis, and abscess present with different spectral profiles, if the metabolite peaks are examined with Magnetic resonance (MR) spectroscopy.<sup>[7]</sup>

Management of brain abscess comprise of two arms that is medical treatment and surgical intervention. The selection of antibiotics is important in preventing advancement of the disease. Surgical drainage of the abscess is still the mainstay of the treatment. Needle aspiration is preferred if the speech, motor or sensory cortex area are involved. Multiloculated abscesses and recurrent cases are usually managed with craniotomy.<sup>[8]</sup> Besides the neurosurgeons, other disciplines such as oromaxillofacial surgeon, rhinologist, or otologist should be involved in management of the primary source of infection in cases of brain abscess. All the above aspects are well-described by Alvis-Miranda *et al.*<sup>[6]</sup>

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