

CASE REPORT

Multiple brain abscesses in an immunocompetent patient after undergoing professional tooth cleaning

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A brain abscess is an encapsulated focal infection of the cerebral parenchyma.¹ It is a severe, life-threatening condition that can result in permanent neurological deficits. The infection may occur as a result of the continuous spreading of bacteria from a contiguous focus directly secondary to traumatic or iatrogenic dural tearing or by means of hematogenous spreading of bacteria after the patient develops bacteremia. Dental disorders and dental treatment are some of the causes of brain abscesses.² Often, the patient's having a medical predisposition or being immunodeficient promotes the development of brain abscesses.³ We present the case of an otherwise healthy man who had multiple brain abscesses after undergoing professional tooth cleaning.

ABSTRACT

Background. Dental disorders and dental treatment are among the variety of causes of brain abscess.

Case Description. The authors present the case of a patient who developed multiple brain abscesses after undergoing professional tooth cleaning. The results of a diagnostic work-up ruled out an underlying immunodeficiency. After receiving neurosurgical intervention and intensive care treatment by means of local and intravenous antibiotics for 24 days, the patient was transferred to another hospital for rehabilitation. Six months after the treatment, the patient still had moderate residual paresis of the left leg.

Practical Implications. Although it happens rarely, professional tooth cleaning may be considered a cause of brain abscesses even in otherwise healthy patients.

Key Words. Abscess; prophylaxis; dental care; microbiology; immunology.

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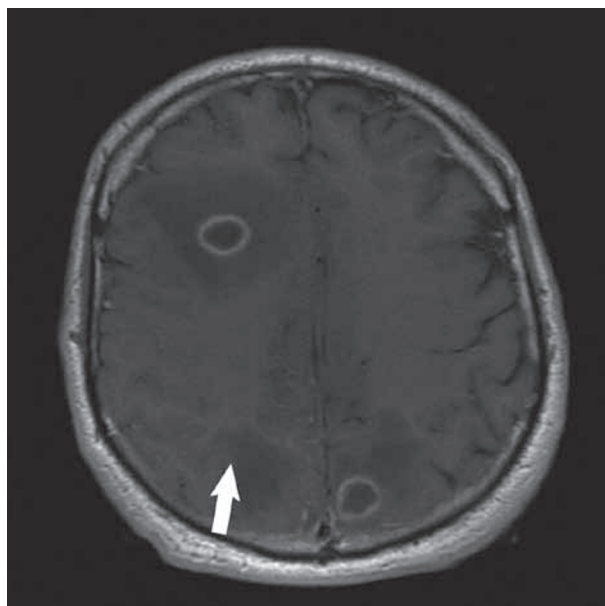


Figure 1. T1-weighted, gadolinium-enhanced magnetic resonance imaging scan of the cerebrum showing the abscesses as two focal areas of a low T1 signal surrounded by a ringlike structure enhanced by a contrast agent. A third lesion without contrast agent enhancement in the right occipital lobe is another abscess (arrow).

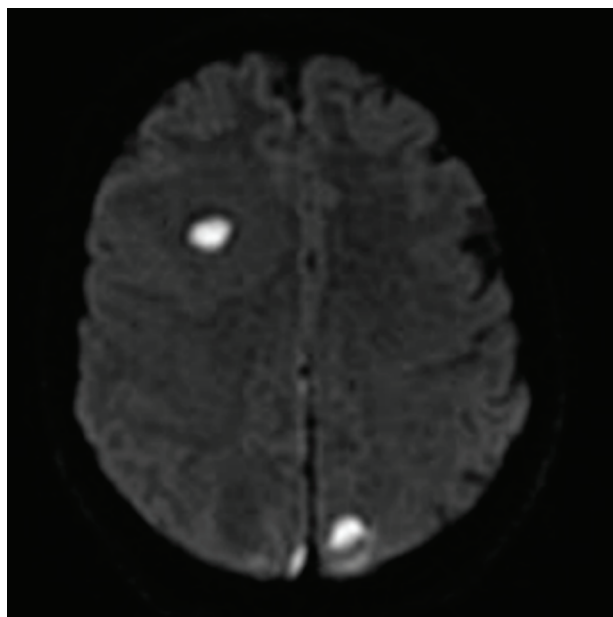


Figure 3. Diffusion-weighted magnetic resonance imaging scan. The hyperintense signals (the light areas) represent restricted diffusion. This magnetic resonance imaging technique provides differentiation of brain abscesses from other intracranial cystic lesions and other lesions surrounded by ringlike contrast agent enhancement.

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The patient, a 55-year-old man, sought care at a medical center because he had experienced an acute onset of weakness in his left leg. Until then, he had been in good health and had no known pre-existing conditions. The

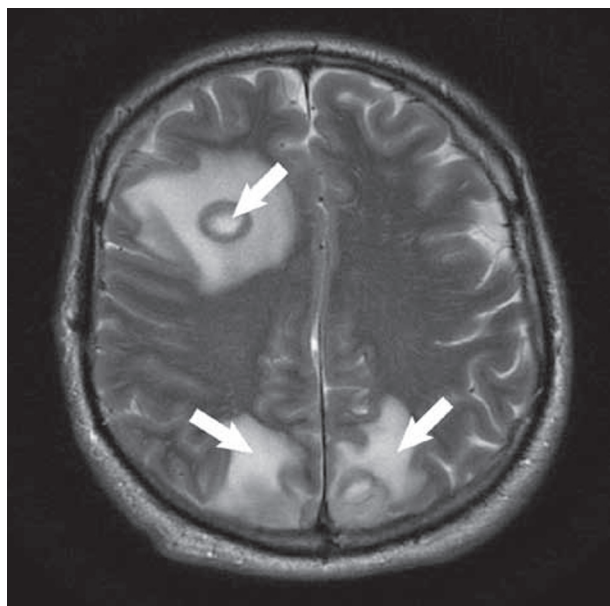


Figure 2. T2-weighted magnetic resonance imaging scan showing three areas of increased signal intensity indicating edema surrounding the three suspected abscesses (arrows).

patient reported that he had received a professional tooth cleaning from his dentist 10 days before he was transferred from the medical center to our hospital (University Hospital of Dresden, Germany). He also reported that he began shivering later on the day he had his teeth cleaned and complained of a progressive headache for one week before admission to our hospital.

The professional tooth cleaning was performed as a prophylactic procedure and consisted of polishing the surfaces of the teeth. The patient had chosen to add this additional care to his routine dental care, and it was the third time he had received this treatment. The two previous tooth cleanings were performed without any peri-procedural complications. At home, the patient normally brushed his teeth by using an electric toothbrush twice daily. He flossed his teeth only occasionally.

A computed tomographic (CT) scan of the patient's brain obtained at the other medical center revealed multiple cerebral lesions in both hemispheres, which is common in brain abscesses. The diagnosis of brain abscesses was supported by the results of a contrast-enhanced magnetic resonance imaging (MRI) scan the patient underwent on the same day as the CT scan; the MRI scan showed six lesions as typical ringlike structures enhanced by a contrast agent and surrounded by edema (Figures 1 and 2). The lesions appeared as hyperintense signals in the diffusion-weighted MRI scans, indicating that the lesions were an infection rather than neoplasia

ABBREVIATION KEY. CT: Computed tomography. HIV: Human immunodeficiency virus. MRI: Magnetic resonance imaging.

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