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Case Report

An Incidental Diagnosis of Neurocysticercosis in a Dental Patient

***Mahesh K PUTTARAJU [1], Srikanth HANASOGE SRIVATHSA [2]**

1. Dept. of Oral Medicine and Radiology, JSS Dental College &Hospital, JSS University, Mysore-570023, India
2. Dept. of Oral Medicine and Radiology, Annoor Dental College &Hospital, Muwattupuzha-687763, Kerala, India

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***Correspondence Email:**
mahesh_puttaraju@rediffmail.com

Abstract
Tenia solium, a parasite causes cysticercous cellulose when affecting the central nervous system, the manifestation is called neurocysticercosis. The most common symptom in neurocysticercosis is seizure. Generally, oral diagnosticians come across cases of oral cysticercosis and it is rare to find a case of neurocysticercosis in the dental office, as it goes undetected. Sometimes, when patients experience seizure in the dental office and subsequent evaluation is performed, rarity such as this can be detected. One case of neurocysticercosis in a 27 year old unmarried female patient detected due to its presentation in the dental office is being reported here.

Case Report

A 27 year old unmarried female patient reported to the dental office [*KP Dental Care, Vishwamanava Double Road, Kuvempunagar, Mysore-570023, India]* for evaluation of painful lower right wisdom tooth. Her medical, surgical and dental histories were insignificant. On examination, the mandibular right third molar was partially erupted and was suspected to be impacted. The mandibular left third molar was impacted as well. A panoramic radiograph was obtained which showed mesioangularly impacted right and vertically left mandibular third molars (Fig. 1). Both the teeth were scheduled for extraction. First, extraction of the symptomatic, right third molar was planned. The tooth was extracted under local anaesthesia; post extraction instructions given and was made to wait in the recovery room for 15 minutes before leaving the dental office. During her wait in the recovery room, patient had an epileptic seizure. Immediately, the room was cleared of all the furniture that

could harm the patient. Within 3-4 minutes, the patient recovered. On enquiring the patient and her father who had accompanied to the dental office, it was reported that it was the first epileptic seizure in all the years. Hence, the patient was referred to a neuro physician for complete evaluation. She reported to the dental office the following week for post-operative evaluation and brought with her the report of computed tomogram (CT) of the brain, ordered by the neuro physician.

The CT scan showed the presence of a single, small well defined, ring enhancing, hypodense lesion with peripheral hyperdensity measuring 1.2 X0.8 cm in size with peripheral edema in the right temporal lobe (Fig. 2).

Fig. 1: Panoramic radiograph showing the impacted teeth (Original)

Fig. 2: CT image showing the lesion in the right temporal lobe (Original)

The impression was neurocysticercosis. The patient was questioned about her diet habits and she informed that she was on a mixed diet and had eaten pork 4-5 months ago. Hence, it was concluded that the source of infection could have been from the meat. Re-examination of the oral cavity revealed no oral lesions suggestive of oral cysticercosis.

The patient was started with tablet albendazole – 400 mg, twice daily along with tablet dexamethazone 4 mg thrice daily for 1 week and tablet phenytoin 400 mg, BID for 1 month, by the neurophysician. Patient is presently under follow up and there has been no second episode of seizure. Patient was also referred to an internist for complete physical evaluation and no more lesions were detected.

Discussion

Cysticercosis is believed to be known since the time of Hippocrates. It is said that neuro cysticercosis is the commonest parasitic infection of the central nervous system (1).

The larval stage of *Taenia solium* called the cysticercus cellulose causes neurocysticercosis. It is a well-known disease with a long history of existence and considered as eradicable, this disease remains a public health trouble in developing countries (2).

The life cycle of *T. solium* involves two hosts; the pigs and the humans. When adult tape worm are lodged in the GI tract of humans, they produce numerous eggs each day which reach the environment through human feces. The pigs usually are fed human feces which ingest these eggs and develop cysticerci. When such infested pigs are eaten by humans, either raw or under cooked, develop cysticercosis. It is also postulated that humans can also get infestation through auto infection by feco-oral route (3). Following consumption of undercooked pork, the embryos cross the intestinal wall, enter systemic circulation and are disseminated to different organs like the skeletal muscles, CNS, subcutaneous tissue, eye, etc. Here the embryos lose their hooklets, obtain a vesicular shape and progress into cysticerci (4).

This disease has a worldwide distribution. The exact prevalence is vastly inconsistent, depending primarily on socio-economic factors of the region. Generally the global prevalence is believed to be around 4% in general population (5).

Presence of the cyst may be totally asymptomatic. When cysticerci undergo degeneration and inflammatory response starts, the symptoms like seizures start (6). The most common clinical sign of neurocysticercosis is seizures. It is considered that seizure may be the primary or only manifestation of the disease in about 70% of the patients (7). Seizures are generalized or focal with secondary generalization (8). Seizures are seen in 80% of the patients with other manifestations such as headache in 40%, visual changes in 20% and psychosis in 5% (9).

Diagnosis

A modified diagnostic criterion for diagnosis of cysticercosis has been proposed and is available in literature (9).

Imaging

Computed tomogram (CT) of the brain usually shows a single enhancing lesion and on magenetic resonance imaging (MRI) a hyperintense lesion. Mostly the lesion is well defined, nodular or annular, measures about 5-10 mm in size, contrast enhancing and associated with perilesional edema (3).

Antiparasitic medications albendazole – 15 mg/kg/day for 1 week or praziquantel - 50 mg/kg/day for 2 weeks are recommended (5). Both these medications effectively destroy the cerebral lesions. Albendazole is considered better and more effective than praziquantel (4).

Conclusion

It is not unusual to encounter epileptic seizure in a dental patient. But, neurocysticercosis causing seizure is uncommon, especially in day-to-day dental practice.

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The authors declare that there is no conflict of interest.

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