CASE REPORT

Masseter muscle cysticercosis: a common disease with uncommon presentation

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SUMMARY

Cysticercosis in humans is caused by *Taenia solium* larvae infestation. Oral cysticercosis is a rare condition and is challenging to diagnose. We present a case of masseter cysticercosis in a young woman who presented with painful recurrent cheek swelling. Diagnosis confirmed it after neuroimaging and histopathological examination of the excised lesion from masseter muscle.

BACKGROUND

Cysticercosis is caused by the larval stage of pork tapeworm, the *Cysticercus cellulosae*. It results from the ingestion of tapeworm eggs through contaminated food and water or dirty hands. The most frequent sites of cysticercosis are subcutaneous tissue, brain, muscles, heart, liver, lungs and peritoneum.^{1 2}

CASE PRESENTATION

A 22-year-old woman presented with recurrent swelling and pain on her right cheek for the last 3 years. Oral examination was normal and the right cheek showed mild swelling. Bimanual palpation of the right masseter showed a non-tender, mobile well-delineated nodule of approximately 1 cm diameter. Rest of the examination was within normal limits. There was no history of dryness of the mouth. Medical, social and family history was not significant. She was on steroids and pain killers for initial three episodes and homeopathic treatment for the subsequent two, but got only partial relief. Every course of treatment lasted for 2–3 weeks.

INVESTIGATIONS

MRI of masseter muscle showed an oval-shaped, well-encapsulated cyst of 9 mm diameter with ring enhancement and eccentric dot sign (figure 1). This confirmed the diagnosis of cysticercosis. The patient went for excisional biopsy. A well-encapsulated cystic lesion was found attached to the masseter muscle. On microscopic examination, the H&E stain sections revealed the presence of a fibrous capsule infiltrated by chronic inflammatory cells (figure 2).

TREATMENT

After a surgical removal of the cyst the patient took steroids and within 15 days she became asymptomatic.

OUTCOME AND FOLLOW-UP

The patient became asymptomatic and was cured. There was no recurrence of any lesion in next 9 month follow-up period.

Figure 1 T2-weighted MRI of masseter muscle showing (white arrow) an oval-shaped, well-encapsulated cyst of 9 mm diameter with peripherally enhancing ring with eccentric dot sign.

DISCUSSION

Cysticerci are spherical, milky white cysts containing a fluid and a single invaginated Scolex with hooklets. Cysticercosis can affect any part of the body, but most commonly the central nervous system which has the most serious outcome. Although the exact incidence is still unknown, oral cysticercosis is considered rare and a precise clinical diagnosis is not usually established.³ The most commonly involved intraoral sites are tongue (42.15%), lips (26.15%) and buccal mucosa (18.9%).^{4 5} It is interesting to note that the involvement of masseter muscle is extremely rare. Reddy *et al*⁵ and Mittal *et al*⁶ reported similar cases of intramuscular cysticercosis in masseter muscle diagnosed by ultrasonography and were treated conservatively. Most of the patients presented with painless swelling, and solitary cheek swellings can present a diagnostic dilemma. Usually patient complains of swelling.

Figure 2 H&E stain sections revealing the presence of a fibrous capsule infiltrated by chronic inflammatory cells.

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Although pain is not a frequent feature, it had been reported in secondarily infected cases.⁷ Differential diagnosis of a solitary lesion in the masseter muscle include inflammatory lesions of the parotid gland, neoplasms of accessory parotid gland, parotid gland obstruction, preauricular lymphadenopathy, primary and metastatic tumours of masseter muscle, sarcoidosis, intramuscular lipomas and solitary neurogenic tumours such as neurilemmoma, neurofibroma and vascular lesions such as haemangioma or lymphangioma.^{4–5} A study done by Chaurasia *et al*⁸ showed that only a 3-day albendazole therapy is very effective to cure solitary cysticercus granuloma. Thus, when such a good response to a 3-day albendazole therapy has been documented in a previous study, this curable disease should be suspected when patients present with the aforementioned symptoms.

Learning points

- ▶ Oral cavity is a rare site of cysticercosis, and masseter muscle involvement is rarer, even in an endemic area.
- ▶ Non-invasive and easily accessible imaging modalities such as high-resolution ultrasonography or MRI are the investigations of choice.
- ▶ Thus, one should keep a high index of suspicion for such a curable disease in a patient with oral or a facial swelling.

Competing interests None.

Patient consent Obtained.

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