CASE REPORT

Myoparasitism mimicking parotid swelling: a rare presentation of cysticercosis

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SUMMARY

Muscular infestation with larval stage of *Taenia solium* is a well-recognised entity but cysticercosis of the head and neck region is a rarity. We present a case of 35-year-old young man with diffuse swelling of 3.5×4 cm in the parotid region on the right side of the face with signs of inflammation. Diagnosis was established on high-resolution ultrasonography which revealed it to be of parasitic origin. The patient was managed with antihelminthic pharmacotherapy and improved within a month. Thus cysticercosis should be considered in the differential diagnosis of subcutaneous swellings of the head and neck region, especially in endemic zones and it must be investigated well with appropriate imaging modalities so that inadvertent surgery can be avoided.

BACKGROUND

Cysticercosis of soft tissues is caused by encysted larval stage of *Taenia solium*. Muscle infestation by this parasite can lead to vague clinical presentation which must be considered in differentials of soft tissue swellings in endemic areas. Since the head and neck region is an uncommon location for cysticercosis, here we are reporting a case of maxillo-facial swelling localised to the parotid region which was thought to be an inflammatory one. Further workup revealed it to be cysticercus cellulose. Relief was obtained with medical management without injudicious use of scalpel and knife.

CASE PRESENTATION

A 35-year-old young healthy man, vegetarian by diet and working as an executive in a pharma company from Lucknow, presented in the Surgery Outpatient Department (KGMU, India) with symptoms of swelling on the right side of the face in front of the ear for 2 days (figure 1). The swelling was acute at onset, increasing in size and associated with mild pain with warm and shiny overlying skin.

On examination, a single swelling of 3.5×4 cm was present on the right side of the face in front of the tragus of right ear, extending superiorly to the zygomatic process, inferiorly up to 1 cm below the tragus and medially reaching up to close proximity of nasolabial fold. It was firm, mobile, tender, non-fluctuant with tense, warm and shiny overlying skin. All other systems were within normal limits without any other obvious swelling. There was no history of trauma or recurrent swelling in the same area.

Figure 1 Right-sided parotid region swelling with signs of inflammation.

INVESTIGATIONS

High-resolution ultrasonography (HRUSG) revealed a well-defined cystic lesion of 8×7 mm size with contained echogenic nidus of 2×1.8 mm with a surrounding hypoechoic area present in tissue plane around the parotid region (figure 2). Therefore, on the basis of sonography a diagnosis of cysticercosis with surrounding inflammatory swelling was considered.

Chest X-ray was normal. Haematological and biochemical study of serum was unyielding.

DIFFERENTIAL DIAGNOSIS

- ▶ Parotitis
- ▶ Parotid abscess

Figure 2 High-resolution ultrasonography of right parotid region showing cyst with echogenic nidus.

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- ▶ Parotid sialadenitis
- ▶ Subcutaneous tissue abscess
- ▶ Pyomyositis
- ▶ Tubercular lymphadenitis

TREATMENT

The patient was managed conservatively with albendazole 400 mg twice daily for 30 days; prednisolone 40 mg once a day was added to reduce inflammatory response. Later the steroid was gradually tapered.

OUTCOME AND FOLLOW-UP

The patient started showing a dramatic response within 3 days of treatment and the swelling almost disappeared within 7 days. A fourth day CT scan showed mildly oedematous tissue around the right parotid region and no evidence of any hypodense lesion suggesting complete resolution of the swelling. After 1, 3 and 6 months of follow-up there was no evidence of residual or recurrent disease (figure 3).

DISCUSSION

Cysticercosis is a tissue infection with the larval cysticercus or metacestode stage of *T solium*. Human beings acquire cysticercosis through feco-oral contamination with *T solium* eggs from tapeworm carriers. Thus, vegetarians and other people who do not eat pork can acquire cysticercosis. Water, wind, flies and other indirect means of infection play little part in transmission.¹ Internal autoinfection by regurgitation of proglottids into the stomach in taeniasis has been proposed but not proven.^{1 2}

Human cysticercosis is a disease associated with poverty, common in areas where people eat pork and traditional pig husbandry is practiced. It is endemic in South America, Brazil, Central America and Mexico, China, the Indian subcontinent and south-east Asia, and sub-Saharan Africa.³ Cysticercosis occurs throughout India, particularly in the north. The

peculiarity of this disease in India is the high incidence of patients with the solitary form of the disease.

Cysts have been described in almost every part of the body; the most frequently reported locations are skin, skeletal muscle, heart, eye and above all the central nervous system.^{4 5} Muscle involvement is a common entity and it usually remains asymptomatic. Clinical presentation of cysticercosis depends on location and number of cysticerci as well as on associated inflammatory mass. The head and neck (excluding orbital and neurocysticercosis) are an uncommon location for cysticercosis.⁵ In the muscular form three distinct types of clinical manifestation have been described: myalgic type, pseudotumour/abscess-like type and pseudohypertrophic type. In the myalgic form, as in our case, during acute stage patient may present with swelling and muscle tenderness.⁶⁻⁸

Although histopathology is reported to be a method of confirmation of diagnosis, findings on high-resolution sonography are considered to be pathognomic of cysticercosis and a definitive diagnosis can be made with reliability.^{5 9} Various different sonographic appearances of muscular cysticercosis have been described: cysticercosis cyst with inflammatory mass around it, irregular cyst with minimal fluid on one side, eccentric scolex in a cyst with large irregular fluid collection in the surrounding muscle fibres and calcified cysticercosis.⁹ We used HRUSG in establishing the diagnosis. Reports suggested that although CT and MRI help to assess the relation of cyst to the surrounding structures, CT and USG are equally effective in identifying cyst and scolex.

Since parasitic infestation can potentially provoke host response, treatment after admission is always needed. Praziquantel (50 mg/kg/day) and albendazole (15 mg/kg/day) are the drugs of choice for treatment of cysticercosis.^{10 11} These drugs are equally effective and the duration of treatment is 4 weeks. Steroids can be used in combination with antihelminthic therapy in the management of myocysticercosis.¹⁰⁻¹² Monitoring of therapeutic response can be carried out with serial USG or CT.

Medical management leads to the healing of most of the symptomatic lesions and surgery does not have much role in muscular cysticercosis.

Figure 3 Disappearance of the swelling after pharmacotherapy of 4 weeks.

Learning points

- ▶ Cysticercosis is an uncommon cause of swelling of the head and neck region.
- ▶ In endemic zone it should be considered as one of the differentials of soft tissue swellings.
- ▶ High-resolution ultrasonography is the optimal investigation for diagnosing soft tissue cysticercosis.
- ▶ Symptomatic muscular forms respond well to medical management while role of surgery is limited in such cases.
- ▶ Once a diagnosis of cysticercosis is made other members of the family should also be investigated.

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