Primary Tuberculosis of the Parotid Gland

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Primary tuberculosis of the parotid gland is relatively rare even in those areas where the disease is endemic, although involvements of cervical lymph nodes by mycobacteria are not uncommon. It may result from the involvements of intraparotid lymph nodes (the localized form) or the infection of parenchyma, either primary or secondary to nodal disease (the diffuse form). Clinically, a parotid mass may not be distinguishable from a neoplasm. This report presents a patient with a parotid mass that was thought to be a malignancy but, after surgery, was diagnosed to be tuberculosis of intracapsular lymph nodes.

A 66-year-old woman was admitted because of a 1-month history of increasingly swelling at the angle of the jaw on the right side. She had no relevant symptoms and gave no personal or family history of tuberculosis. Systemic examination was normal except for a 4 X 2 cm, mobile, rubbery, nontender mass in the right parotid region. All the hematologic findings, biochemical data, erythrocyte sedimentation rate, and C-reactive protein (CRP) were within normal limits. The chest radiograph was normal. A tuberculin skin test was positive (an enduration of 30 X 32 mm). Tests for anti-human immunodeficiency virus (HIV) 1 and 2 antibodies were negative. With ultrasonography, an anechoic mass measuring 36 X 16 X 18 mm was detected. Computed tomography (CT) of this region revealed a 35 X 25 mm homogeneous mass extending from the superficial lobe to the inferior border of the parotid gland (Figure 1). Surgical exploration of this region revealed a yellow-pink, firm, nodular mass, and the mass was completely removed. Histologic examination of the lesion demonstrated a caseating granuloma in the intracapsular lymph nodes and lipomatosis in the adjacent parotid tissues (Figure 2). Acid-fast bacilli (AFB) were found in the aspiration fluid of the lesion. The presence of M. tuberculosis DNA in the tissue with caseating granuloma was evaluated by polymerase chain reaction (PCR). IS6110-specific primers that could amplify all M. tuberculosis complex strains were used for amplification. The result was negative. After removal of the lesion, the patient was prescribed a 6-month course of isoniazid, rifampicin, ethambutol, and pyrazinamide. Ethambutol and pyrazinamide were discontinued after 2 months of therapy. At a 12-month follow-up, the patient was doing well.

DISCUSSION

Infective parotitis may result from viruses, such as mumps virus, coxsackieviruses, and influenza A virus or Staphylococcus aureus in the elderly or in debilitated patients. Parotitis due to M. tuberculosis is a relatively rare occurrence.

Patients with parotid gland tuberculosis usually present with a localized mass in the parotid region without any systemic symptom of tuberculosis. Clinically, it may not be possible to distinguish from a neoplasm. Computed tomography may reveal discrete intraparotid

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adenopathy mimicking either a benign or malignant tumor. Microbiologic, cytologic, or histologic analyses with fine needle aspiration or surgical excision frequently are required. Fine needle aspiration cytology is a well-accepted method of diagnosis in such cases, but it is limited by the cytologic service available in a given institution and by difficulty in interpretation. The traditional approach to such lesions has been surgical excision, permitting histologic examination. On the other hand, radical surgery may lead to sacrifice of branches of the facial nerve. Superficial parotidectomy is advocated in situations in which no technical difficulty will arise.

Fine needle aspirate or surgical excision material should be studied for mycobacterial etiology by Ziehl-Neelsen stain for AFB, by mycobacterial culture, and by histologic evaluation, especially in regions where tuberculosis is endemic. Fine needle aspiration cytology recently has been shown to have a diagnostic accuracy in tuberculous adenitis of 80%. Mycobacterial infections generally are diagnosed by detection of AFB, by culture, or by evaluation of histologic features. The diagnosis of tuberculosis is definite when AFB are found and the pathology reveals a caseating granuloma as in the case presented here. Anti-tuberculous therapy has been recommended after diagnosis of tuberculosis. But, usually, mycobacteria are difficult to detect microscopically in tissue samples, and the culture process is lengthy. Acid-fast bacilli have been seen in 0 to 44% of tuberculous granulomas in previous studies. To confirm the diagnosis of tuberculosis, and not to perform unnecessary radical surgery, an alternative approach to the diagnosis, PCR has been suggested. Based on the clinical material, sample preparation method and target nucleic acid, the sensitivity of M. tuberculosis detected by PCR varies between 42% and 100%. Whereas, it gave a positive result in a patient with parotid tuberculosis, in our patient who was acid-fast positive and had a histology of caseating granuloma, PCR of parotid tissue yielded a negative result.

Medically curable diseases such as tuberculosis on one hand and possibilities such as neoplasms on the other hand may produce a diagnostic challenge. Because of difficulty in differential diagnosis, a mass in the parotid gland needs careful investigation. Although it is rare, tuberculous parotitis in particular should be considered, in an endemic area, and parotid gland biopsies should be sent for microbiologic as well as histologic examination.

REFERENCES