Facial nerve palsy produced by plasma cell granuloma

Clinical Pearl

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There are many causes for peripheral facial nerve palsy, such as an isolated phenomenon occurring in a healthy person (Bell's palsy), a manifestation of a systemic illness, or a component of a more widespread neurological disease. Plasma cell granuloma is the proliferation of polyclonal, nonneoplastic plasma cells. Several cases have been reported in the literature in which plasma cell granulomas have affected the brain, lungs, gastrointestinal tract, kidneys, salivary glands, and skin. We report a case of peripheral facial nerve palsy produced by a plasma cell granuloma that was confirmed by histological and immunohistochemical studies.

Key Words * peripheral nerve palsy * facial nerve * plasma cell granuloma

CASE REPORT

This 69-year-old man had experienced diminishing hearing and otorrhea since childhood. Several years before presentation to our service the patient suffered dizziness and tinnitus. Three months before admission the symptoms worsened. He had pain in his right ear, which expelled a fetid, yellowish fluid. A few days before admission the patient complained of weakness affecting the right side of the face.

Examination On neurological examination the patient showed right-sided peripheral facial nerve palsy with no other cranial nerve abnormalities. His strength was normal. He had normal pinprick, touch, position, and vibration sensation. The deep tendon reflexes were normal and symmetrical. The plantar responses were flexor. His blood pressure was 140/70 mm Hg. A complete blood count was normal, as were urea nitrogen, bilirubin, calcium, phosphorus, cholesterol, uric acid, aspartate aminotransferase, and alkaline phosphatase levels. The erythrocyte sedimentation rate was 5 mm/hour. His urine sample was normal with no Bence-Jones proteinuria. Serum immunoelectrophoresis disclosed no increased immunoglobulin G, A, or M levels. Agarose gel electrophoresis showed a normal pattern. Chest and bone radiographs did not reveal lytic lesions or diffuse osteopenia. An audiogram showed a severe transmission loss in the right ear. Caloric and rotational vestibular tests revealed a right labyrinthine defect with central compensation. A series of x-ray films of the mastoid bones showed bilateral sclerosis. A computerized tomography (CT) scan revealed a right middle ear and mastoid soft-tissue antrum with no bone erosion. The ossicular chain was normal.

Operation. A right craniotomy involving radical mastoidectomy with middle to external ear communication and facial nerve exposition was performed. Operative findings revealed a whitish-brown

soft-tissue mass filling the mastoid antrum and infiltrating the facial nerve. The ossicles were normal. The mass did not erode the middle ear or extend to the cranial fossae. All identifiable tumor was removed.

Fig. 1. Photomicrograph showing the inflammatory infiltrates with predominance of plasmacytes and Russell bodies. H & E, original magnification X 200.

Histopathological Findings. Microscopic examination of the tumor revealed an inflammatory infiltrate with plasma cell predominance and Russell bodies (Fig. 1). Immunohistochemical staining showed lambda (Fig. 2 upper) and kappa (Fig. 2 lower) chains, suggesting a polyclonal origin. The patient was diagnosed as having a plasma cell granuloma.

Fig. 2. Photomicrographs revealing immunohistochemical staining for lambda (L; upper) and kappa (K; lower) light chains. Original magnification X 200.

Postoperative Course. One year after surgery the patient continues to display facial palsy, but he is free of disease. His transmission hearing loss has not worsened. A postoperative CT scan showed no recurrence of mass.

DISCUSSION

Both congenital and acquired disease states may produce facial nerve paralysis along the course of the facial nerve. In a review of 2856 patients, May and Klein[2] reported on the conditions associated with peripheral facial paralysis: for the majority of patients (51%), no cause of the paralysis could be found. Our review of the literature dating

from 1900 to 1990 revealed that a host of conditions can cause facial palsy. Neoplastic processes are present in approximately 6% of patients and produce symptoms by infiltrating the facial nerve. Plasma cell

granuloma has never been reported as a cause of facial palsy. Only two cases of middle ear and mastoid plasma cell granuloma have been described.[1,3] Our patient represents the first reported case of peripheral facial nerve palsy resulting from plasma cell granuloma diagnosed by CT scanning and microscopic examination of the tumor.

References

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