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Unusual Presentation of Prostate Adenocarcinoma: Collet-Sicard Syndrome with Dysfunctions of Cranial Nerves VII and VIII

CASE REPORT

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ABSTRACT

Collet-Sicard syndrome is characterized by the unilateral paralysis of cranial nerves IX–XII. The most common cause is an extradural tumor in the posterior fossa. This syndrome may occasionally occur because of distant metastases. Collet-Sicard syndrome which results from metastatic prostate carcinoma is very rare. A review of the English literature showed that this is the second report of metastatic prostate carcinoma with Collet-Sicard syndrome and dysfunctions of cranial nerves VII and VIII. On the other hand, this is the first report of a patient with prostate carcinoma who initially presented with Collet-Sicard syndrome and showed dysfunctions of cranial nerves VII and VIII.

Keywords: Collet-Sicard syndrome, prostate carcinoma, temporal bone tumor

INTRODUCTION

Collet-Sicard syndrome, which was described in 1916, is characterized by the unilateral paralysis of cranial nerves IX–XII (1). The most common cause is an extradural tumor in the posterior fossa. This syndrome may occasionally occur because of distant metastases. The most common primary tumors that metastasize to the temporal bone are the tumors of the breast, lung, and kidney (2, 3). Collet-Sicard syndrome which results from metastatic prostate carcinoma is very rare. The review of the English literature showed that there were five reports for metastatic prostate carcinoma with Collet-Sicard syndrome. This is the second report of an incidence of metastatic prostate carcinoma with Collet-Sicard syndrome and dysfunctions of cranial nerves VII and VIII (1). In addition, our report is different from Shine's article (1) because the present patient did not have any history of prostate carcinoma. This is the first report of a patient with prostate carcinoma who initially presented with Collet-Sicard syndrome and showed dysfunctions of cranial nerves VII and VIII.

CASE REPORT

A 64-year-old man was referred to our department because of right facial nerve palsy and hearing loss for 3 months. He had a 2-month history of wasting of shoulder, dysphonia, and dysphagia. He had complaints belonging to possible prostate hypertrophy.

Physical examination revealed narrowing of the right external ear and right peripheral facial palsy. There was a droop of the soft palate, loss of gag reflex, right-sided shoulder weakness, dysarthria, and deviation of the tongue to the right. The telescopic examination of the larynx showed a right vocal cord paralysis.

Pure tone audiometry revealed total hearing loss in the right ear. A caloric test showed ipsilateral canal paresis. The patient's general condition and routine laboratory findings were unremarkable. On the basis of these findings, measurement of prostate specific antigen (PSA) concentration, cranial-temporal computed tomography (CT), magnetic resonance imaging (MRI) was obtained. The PSA concentration was 976.46 ng/mL (0–4 ng/mL). A CT scan showed a 6 × 5 × 4 cm destructive mass in the right temporal bone, extending to the skull base and occipital condyle (Figure 1). A cranial MRI revealed malignant characteristics and a heterogeneous enhancing mass in the right temporal bone, including the hypoglossal canal, jugular foramen, and internal acoustic mea (Figure 2).

After urology consultation, the patient underwent transurethral prostatectomy. The diagnosis of prostate adenocarcinoma with perineural invasion was established. To distinguish primary temporal carcinoma from metastasis, we also performed cortical mastoidectomy, and biopsy of the soft tissue mass in the mastoid cavity was conducted. Immunohistochemical stains were strongly positive for both prostate acid phosphatase and PSA, which are an evidence of prostatic origin (Figure 3).

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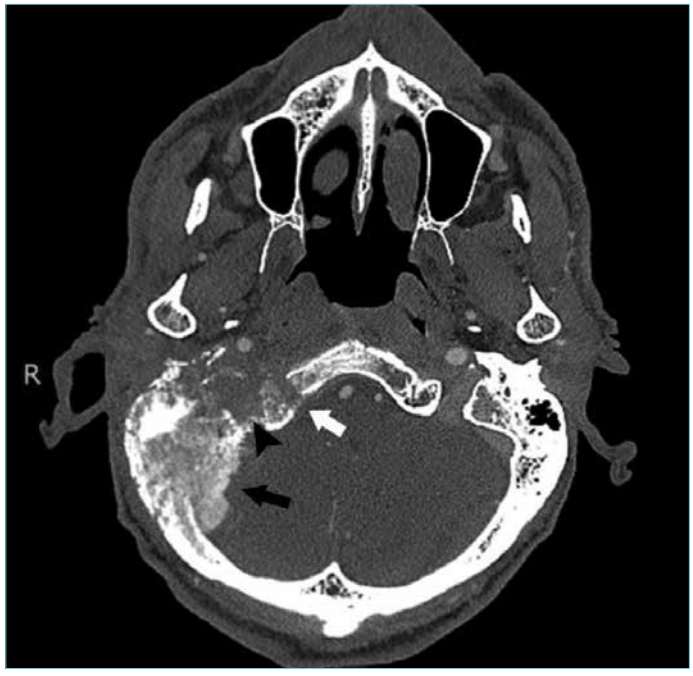

Figure 1. Axial CT scan showing an extensive osteolytic lesion with sclerotic changes and the involvement of the skull base, temporal bone (black arrow), jugular foramen (arrow head), and hypoglossal canal (white arrow)

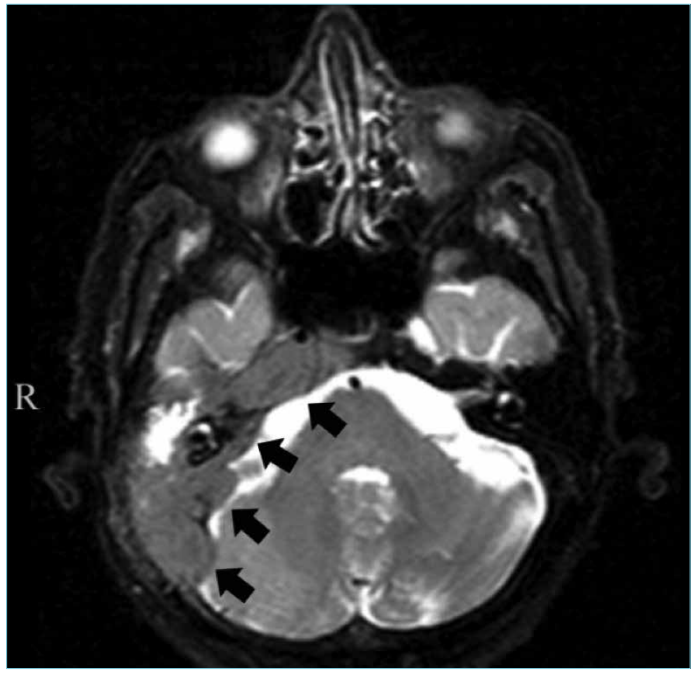

Figure 2. Axial T2 fat-suppressed MRI showing the extent of the metastatic mass (black arrows)

Then, the patient was referred to the urology and oncology department for treatment. Although the patient received 1 mg/kg of oral prednisolone, antiandrogen treatment, and skull base radiotherapy, there was no improvement of nerve functions. Approximately 6 months later, the patient died of respiratory failure caused by generalized pulmonary metastases.

DISCUSSION

Collet-Sicard syndrome is a rare syndrome that involves the complete unilateral paralysis of the last four cranial nerves (IX–XII). The causes of these syndromes are malignancy, head injuries, burst fracture of the cervical vertebra, internal carotid artery dissection, polyarteritis nodosa, Lyme disease, carotid fibromuscular dysplasia, hemangiopericytoma, and idiopathic cranial polyneuropathy (4-8).

Malignant temporal bone tumors can occur because of a primary tumor, local invasion (such as nasopharynx), and distant metastasis (2, 3, 9). Malignant lesions of the skull base and nasopharynx are more frequent causes of these syndromes (10). All of them have similar symptoms. The most frequent symptoms are hearing loss, tinnitus, vertigo, and facial palsy (2, 3). Metastatic tumors most commonly invade the petrous apex, followed by the mastoid, internal auditory canal, and middle ear. Probably, in this case, the petrous apex that contains the narrowest part of the fallopian canal was the first affected side because of presenting with facial palsy. Subsequently, the metastatic tumor must have extended to the jugular foramen and hypoglossal canal.

If there is a suspicion of a temporal bone malignant tumor, the history of any malignant disease and its symptoms must be interrogated. The physicians must concentrate on the breast, lung, and urogenital tract, which are the most common primary sources. The present patient had symptoms of prostate hypertrophy. Therefore, PSA concentrations were first measured. Thus, the diagnosis of prostate carcinoma was established easily with pathological examination.

Collet-Sicard syndrome with facial palsy has been reported in three papers (1, 8, 10). Two of these three papers reported that the syndrome was due to metastatic prostate carcinoma and the other reported that the syndrome was due to hemangiopericytoma. Shine published the study on the first Collet-Sicard syndrome with dysfunctions of cranial nerves VII and VIII. The present case is different from Shine's paper because there was no history of the diagnosis of prostate adenocarcinoma in our patient.

Imaging studies can distinguish the primary tumor from a local spread but not from metastasis. In our patient's CT scan, there were hyperdense areas that could indicate osteoblastic activity. This finding was closer us to the diagnosis of prostate carcinoma metastasis. Thus, bone metastasis of prostate carcinoma has a potential of osteoblastic activity. MRI can show the tumor, its extent and associated perineural invasion, and may reveal skull base involvement before CT findings are demonstrable (11).

If it is possible, biopsy must be taken from the temporal bone to distinguish primary temporal carcinoma from metastasis. Immunohistochemical staining must be performed to detect possible primer sources.

Treatment should be administered based on the etiology. In the treatment, palliation is the primary focus of the clinician. Steroids are useful for decreasing the inflammation and edema surrounding the nerve. Shine (1) used the 4 mg 6 hourly for 4 days intravenous dexamethasone followed by 1 mg/kg oral prednisolone therapy. In that study, an oral steroid was administered during the radiothera-

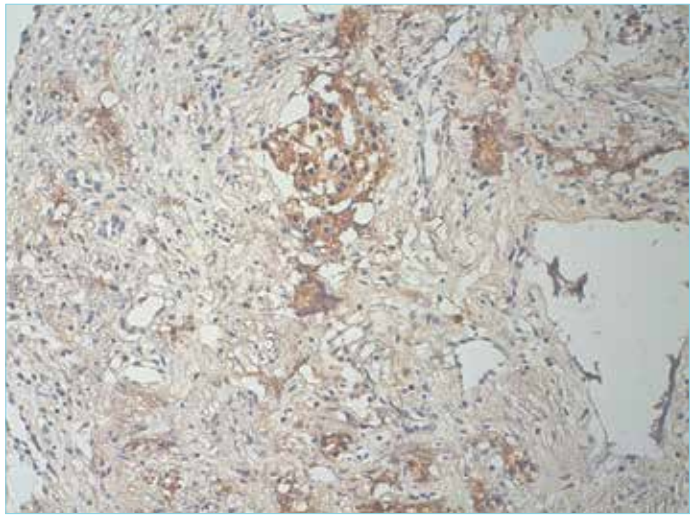

Figure 3. Tumoral cells with PSA immunoreaction (biopsy from the mastoid cavity, Immunoperoxidase, ×200)

py and tapered off over 4 weeks after the treatment. The patient responded well clinically to the treatment, with a full recovery of facial and inferior laryngeal nerve functions, but the others did not. Radiotherapy can be used for the treatment of the malignant lesions of the skull base. In the literature, authors achieved a satisfactory response with 30 or 50 Gy radiotherapy. Specific to prostate cancer, antiandrogen treatment may be instituted (12, 13).

CONCLUSION

To determine such a rare disease, the following actions are necessary:

1. Getting suspicious about Collet-Sicard syndrome
2. Detailed history of the patient
3. Careful physical examination, including all cranial nerves
4. Cooperation with other departments
5. Biopsy from the temporal bone, if it is possible.

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