Numb Chin Syndrome as the Initial Manifestation of Breast Carcinoma

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Abstract

Numb chin syndrome may be the manifestation of a local dental pathology or secondary to a systemic disease. A systematic physical examination with diagnostic workup is of utmost importance in patients presenting with numb chin syndrome. We report the case of a 58-year-old woman who presented with numb chin syndrome. An orthopantomogram and computed tomography of the head revealed osteolytic lesion in the left molar region. Histopathological and immunohistochemical examination confirmed the lesion to be metastatic breast carcinoma. Breast ultrasound scan demonstrated a 1.5 × 1.5-cm lesion in the left breast and fine needle aspiration cytology from the lesion confirmed the diagnosis of breast carcinoma. Bone scan showed multiple bone metastases. She was diagnosed to have numb chin syndrome secondary to bone metastases from breast carcinoma. In view of her disseminated disease status, she was started on palliative hormone therapy (Letrozole) with zoledronic acid. We present this case to highlight the importance of careful evaluation of patients presenting with numb chin syndrome because this may be the only manifestation of a systemic malignancy.

Keywords Numb chin syndrome · Malignancy · Breast carcinoma

Introduction

Numb chin syndrome also known as mental neuropathy is a sensory neuropathy characterized by decreased sensation or paresthesia over the chin, lower lip, gum, and oral mucosa (regions supplied by the branches mental nerve). This sign is considered to be very ominous in view of its common association with malignancies. We report the case of a 58-year-old woman who presented with numb chin syndrome. She was evaluated and diagnosed to have numb chin syndrome secondary to bone metastases from breast carcinoma. The present case highlights the importance that numb chin syndrome may be the only sign of an underlying malignancy and the importance of systemic examination and investigations in such patients.

Case Report

A 58-year-old woman presented with numbness of the chin and lower lip of the left side of 1-month duration. She did not have any relevant past medical history. Neurologic examination revealed reduced sensation to light touch, and temperature in the region innervated by the left mental nerve. An orthopantomogram revealed radiolucency with ill-defined borders in the left side of the mandible (Fig. 1). Computed tomography of the head with skeletal reconstruction revealed an expansile lytic lesion in the left side of the mandible (Fig. 2). A trucut biopsy was done under local anesthesia and histopathological examination showed metastatic adenocarcinoma (Fig. 3). Immunohistochemical examination demonstrated positive estrogen receptor with negative progesterone and HER-2 receptors (Fig. 4) confirming the diagnosis of metastatic breast carcinoma. Breast ultrasound demonstrated a 1.5 × 1.5-cm lesion in the upper outer quadrant of the left breast, and fine needle aspiration cytology from this lesion confirmed the diagnosis of breast carcinoma. Computed tomography of the chest and abdomen did not reveal any visceral metastasis. The bone scan showed increased uptake in multiple areas of the calvarium, left hemi-mandible, multiple ribs, sternum,

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Fig. 1 An orthopantogram revealed radiolucency with ill-defined borders in the left molar region

multiple vertebrae, sacrum, and pelvis. In view of the disseminated disease status, she was started on palliative hormonal therapy (Letrozole) with zoledronic acid. After 2 months of treatment, she improved symptomatically and is currently continuing medications.

Discussion

Numb chin syndrome is a sensory neuropathy limited to the distribution of the mental nerve. This syndrome is characterized by paresthesia or hypoesthesia in the lower lip, chin, and mucous membrane inside the lip and extending to the midline. This syndrome is clinically important in view of its sinister association with malignant disease. However,

benign dental pathologies are the commonest cause of this syndrome which includes ill-fitting dentures, osteomyelitis, abscesses, cysts, and iatrogenic causes [1–3]. Other benign lesions include aneurysms, multiple sclerosis, diabetes mellitus, vasculitis, and drugs [4–6]. According to a systemic review, the most common malignancies that cause numb chin syndrome are breast (40.4%), lymphomas (20.5%), prostate (6.6%), and leukemia (5.1%) [7].

The molar region is most commonly involved part in the mandible secondary to metastases. The reason for predilection for molar region is the reduced velocity of the blood flow in this area; presence of hematopoietic bone marrow and the tortuous course of the mental nerve could predestine metastatic deposits on its course [8]. The mechanisms of numb chin syndrome include direct infiltration, perineural invasion, nerve compression, leptomeningeal involvement, and immune mediated [5]. Leptomeningeal metastasis for numb

Fig. 2 Computed tomography of the head with skeletal reconstruction revealed an expansile lytic lesion of the left mandible

Fig. 3 Histopathological examination revealed infiltrating glandular epithelium arranged in cords (H and E × 400)

Fig. 4 Immunohistochemical stains showed nuclear estrogen receptor positive in tumor cells

chin syndrome should be considered in the presence of subtle signs like areflexia or associated seventh cranial nerve palsy.

A patient with numb chin syndrome should be thoroughly evaluated with investigations such as orthopantomogram, computed tomography, magnetic resonance imaging, bone scan, and positron-emission tomography-computed tomography (PET-CT) where indicated. Ancillary investigations can be helpful in diagnosing the etiology in about 89% of malignant cases [9]. According to standard recommendations, a palliative approach must be considered when a patient with malignancy presents with widespread metastases. Surgical resection is useful only in patients with solitary metastases. Systemic endocrine therapy and bisphosphonate therapy were administered to prevent progression of symptoms in our patient.

Conclusion

In conclusion, it is important for clinicians to be aware of this seemingly trivial symptom. Numb chin syndrome may be a sign of underlying advanced metastatic malignancy and therefore cannot be ignored. In rare instances like our patient, numb chin syndrome may be the only presenting manifestation of malignancy.

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