

Hepatocellular carcinoma metastasis to the condyle

A case report and review of the literature

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Temporomandibular disorders (TMDs) are defined by the American Academy of Orofacial Pain as “a group of musculoskeletal and neuromuscular conditions that involve the TMJs, the masticatory muscles, and all associated tissues.”¹ Pain and dysfunctional symptoms, signs or both such as limitation in opening, asymmetric jaw movements and temporomandibular joint (TMJ) sounds are the most common findings. Other commonly associated signs and symptoms include earache, tinnitus, headache and neck pain. In most cases, a conservative and reversible management approach will provide symptom relief for these musculoskeletal disorders. However, these signs and symptoms may result from nonmusculoskeletal sources (that is, neurological, neurovascular, neoplastic and glandular), thereby creating the possibility of misinterpretation, misdiagnosis and incorrect treatment, which might result in morbidity and eventual mortality.

Pain is a common symptom associated with cancer, present in 20 to 50 percent of all patients with the disease and being clinically significant in 75 to 90 percent of those with advanced or terminal cancer.² Because pain also is a common finding associated with TMDs, it is important for the practitioner to differentiate this symptom

ABSTRACT

Background. Metastatic tumor invasion of the condyle from the liver is rare. It is important for dental practitioners to differentiate tumor involvement from musculoskeletal disorders such as temporomandibular disorders.

Case Description. The authors present a case report of a patient with temporomandibular joint pain and dysfunction consistent with musculoskeletal disorders. Because of the patient’s medical history, comprehensive examination results and findings of imaging studies performed, the dental practitioners referred him to other health care providers for further and more in-depth investigation. This resulted in the establishment of an accurate diagnosis, with treatment directed at the primary source.

Practical Implications. A thorough medical history, comprehensive clinical examination and adjunctive testing, when necessary, are paramount in establishing a definitive diagnosis for patients with orofacial pain, thereby enabling the delivery of appropriate treatment.

Key Words. Hepatocellular carcinoma; temporomandibular disorders; malignant tumor; metastatic lesion.

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of malignant diseases manifesting in the head and neck or oral cavity from those of musculoskeletal disorders such as TMDs.

A source of tumor pain manifesting in the orofacial region may be one associated with a metastatic malignancy. Metastatic orofacial tumors are relatively uncommon (approximately 1 to 1.5 percent of all malignant oral tumors), affecting the jawbones (82 percent of cases located in the mandible) more frequently than the oral soft tissues (2:1 ratio) and occurring most frequently in patients aged between 40 and 70 years.³⁻⁵ The most common primary source of tumors metastasizing to the jawbones is the breast, followed by the lung, prostate and colon, with metastatic lesions presenting most commonly in the posterior jaw and/or angle of the mandible and ramus.^{4,6} In the oral soft tissues, the lung in men and breast in women are the most common primary sources of metastases; the attached gingiva (54 percent of cases) is the oral site affected most commonly, followed by the tongue (22.5 percent of cases).^{3,4,7} Swelling, pain or paresthesias developing in a relatively short period have been reported in 57 percent, 39 percent and 23 percent, respectively, of patients with metastatic disease of the jawbones,⁸ whereas pain is a rare complaint in soft-tissue metastases.⁷

In a retrospective case series of metastatic disease in the jaws, 66 of 114 patients (57.8 percent) reported the metastatic lesion in the oral region to be the first indication of an undiscovered primary malignancy at a distant site.⁶ Hirshberg and colleagues³ reported the mean time between origination of the primary tumor and detection of oral metastases to be approximately 40 months. This time lag is associated with a poor prognosis, with a mean survival time of about seven months.³

The patient we describe below represents an unusual case of tumor metastasis to the condyle from a distant primary source—the liver—thus highlighting the need for health care practitioners to differentiate these life-threatening diseases from musculoskeletal disorders.

CASE REPORT

A 75-year-old man was referred by the New Orleans Veterans Affairs Outpatient Clinic to our TMD clinic, School of Dentistry, Louisiana State University Health Sciences Center, New Orleans, on Nov. 12, 2012, with a chief complaint of a persistent pain involving the right preauricular region and difficulty on jaw opening. He reported that this pain commenced spontaneously on awakening approximately six weeks earlier after he heard a loud snap from the area. The patient described the pain as a constant, sharp, penetrating pain surrounding his right TMJ, with radiation to the temporal region. He stated that the pain was agonizing, with an intensity of 9/10 on a numeric rating scale (0 represents “no pain” and 10 represents “pain as severe as it could be”). The patient indicated that the pain was exacerbated by

sudden head movements, as well as on wide jaw opening, chewing and swallowing, and it did not reduce in intensity with use of over-the-counter analgesics. He also reported experiencing sleep disturbances due to the pain’s preventing him from falling asleep, as well as interfering with sleep maintenance.

The patient’s medical history indicated that in May 2011, he received a diagnosis of hepatocellular carcinoma (HCC) of the liver, which was treated initially with chemotherapeutic agents. He later underwent chemoembolization procedures of the liver (transarterial chemoembolization) in an attempt to block some of the blood supply toward the tumor. In April 2012, the patient underwent a partial hepatectomy to resect the tumor, during which approximately 46 percent of the liver was removed. His family history also was significant for HCC: his mother and two cousins died of metastases from HCC. In addition, the patient had a history of substantial cigarette smoking but denied consuming alcohol.

Two of the authors (L.E., M.S.) conducted the clinical examination, which revealed slight swelling in the right preauricular region without any erythema (Figure 1). The clinicians detected no lymphadenopathy. Palpation of the right preauricular region elicited severe pain, which prompted the patient to move his head away abruptly. Pain also was present when the mandible was at rest, and it was accentuated during opening and closing of the mandible. In addition, palpation of the right temporalis muscle elicited pain. The patient’s mandibular interincisal opening was limited to 20 millimeters, with limitations also present during lateral and protrusive movements. The intraoral examination revealed an incomplete dentition, but the clinicians did not detect any other hard- or soft-tissue abnormalities.

A panoramic radiograph revealed scattered radiolucencies within the right condylar head (Figure 2). On Nov. 24, 2012, cone-beam computed tomography (i-CAT, Imaging Sciences International, Hatfield, Pa., 0.4-mm resolution; 46-mm field of view, 120 kilovolts, 5 milliamperes, four seconds’ exposure) was performed (Figure 3). The scan revealed an irregularly shaped expansile radiolucency of the right condylar head, with ill-defined thinned borders and partial osteolytic erosion of the cortical plate. The coronal view revealed an expansion of the right condyle mediolaterally, with the condyle measuring 31 mm, compared with 22 mm for the asymptomatic left condyle. The left condyle displayed minor flattening consistent with osteoarthritic changes, but no further radiographic abnormalities were detected. After obtaining a medical history, performing a clinical examination and conducting adjunctive imaging, we made a preliminary

ABBREVIATION KEY. FDG: 18-fluoro-2-deoxyglucose. HCC: Hepatocellular carcinoma. PET-CT: Positron emission tomographic-computed tomographic. TMD: Temporomandibular disorder. TMJ: Temporomandibular joint.

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