A rare case of bone metastases from adenocarcinoma of the parotid gland

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Date accepted for publication 10 August 2009

Abstract

A woman with known adenocarcinoma of the right parotid gland presented with bony metastasis in her left proximal femur. This was histologically confirmed and the patient underwent prophylactic intramedullary nail and hip screw fixation of her left proximal femur. This represents the first report of adenocarcinoma of parotid origin metastasising to a long bone in an adult.

Keywords

Adenocarcinoma parotid; metastasis; proximal femur; prophylactic intramedullary nail; hip screw fixation.

Introduction

Tumours of the salivary glands are rare and represent less than 1% of all cancers and approximately 5% of head and neck cancers. In the United Kingdom, 550 new cases are diagnosed each year[1]. The parotid glands are the largest salivary glands and are the most common site of salivary gland tumours, accounting for 75% of the total. The majority of parotid gland tumours are benign; around 25% are malignant. Many types of parotid malignancies exist, and most arise from the epithelial elements of the gland. The most common malignant parotid neoplasm in adults is mucoepidermoid carcinoma, which represents almost one-third of such tumours. Other parotid malignancies include adenoid cystic carcinoma, malignant mixed tumours, acinic cell carcinoma and adenocarcinoma.

In this report we discuss the case of a 64-year-old woman with known adenocarcinoma of the right parotid gland. In June 2007, the patient was found to have a bony metastasis in her left proximal femur. The patient underwent prophylactic fixation of the left femur to prevent impending pathological fracture.

Case report

In 2004, the patient originally presented with a history of itching and fullness in her right ear. She was diagnosed with adenocarcinoma of the parotid gland and underwent radical surgery at
another institute in January 2005 and again in June 2005. Due to disease progression, the patient was referred to a tertiary referral centre for reassessment. Review of the patient’s histopathology confirmed Grade 2 adenocarcinoma of the right parotid gland. Magnetic resonance imaging (MRI) and computed tomography (CT) imaging at the time showed intracranial extension of the disease and the decision of the multidisciplinary team was that the tumour was no longer operable. The patient was subsequently referred to the Clinical Oncology Department in St. Bartholomew’s Hospital for consideration of radiotherapy. In October 2005, the patient completed radical radiotherapy for her parotid adenocarcinoma but then developed thecal nerve root compression due to bony metastases in the lumbar-sacral area. The patient received a course of palliative radiotherapy to her lumbar-sacral region which helped relieve her symptoms.

A staging CT scan of the patient in December 2006 revealed extensive lung metastases. By April 2007, the patient had completed six cycles of palliative chemotherapy but then needed further palliative radiotherapy to her thoracic spine in May 2007 when she was found to have thoracic bone metastases.

On the 21 June 2007 the patient was admitted to St. Bartholomew’s Hospital with a 1-week history of pain radiating down her left leg and difficulty mobilising. The patient reported weakness of her left leg and was found to have reduced hip flexion due to pain. Given the background of spinal metastases, an urgent MRI scan was conducted to exclude cord compression. This showed no evidence of cord compromise and stable disease in the spine. A plain radiograph (Fig. 1) of the patient’s left hip revealed a lytic lesion in the proximal femur. Given the patient’s primary disease and the infrequency of long bone metastases by parotid adenocarcinoma, this lesion could not be assumed to be a metastatic deposit without histological confirmation.

A CT-guided biopsy of the lesion was therefore organised. Histological analysis of the biopsy specimen confirmed adenocarcinoma in the peritrochonteric region of the proximal left femur. Because of the high risk of impending pathological fracture based on Mirels’ scoring system[2], the patient underwent prophylactic intramedullary nail and hip screw fixation of the left femur (Fig. 2). The patient had an uneventful post-operative recovery phase and following extensive physiotherapy was discharged home to return on an outpatient basis for adjuvant radiotherapy to the left femur.
Discussion

Distant skeletal metastases from primary malignant parotid tumours are rare\textsuperscript{[3]}. There are documented cases of bony metastasis in the context of adenoid cystic carcinoma\textsuperscript{[4,5]}, malignant mixed tumour\textsuperscript{[6]}, acinic cell carcinoma\textsuperscript{[7]} and even the 'benign' pleomorphic adenoma\textsuperscript{[8]}, but most of these were to the axial skeleton. Adenocarcinoma of the parotid gland is an aggressive lesion with both lymphatic and distant metastatic potential and one-third of patients have such metastases at the time of initial diagnosis. However, metastasis to bone and in particular to long bones is extremely rare with very few cases documented in the literature. A femoral metastasis from a non-parotid buccal salivary gland adenocarcinoma has been described in a child\textsuperscript{[9]} and a humeral metastasis from a parotid adenocarcinoma has been described in a canine\textsuperscript{[10]}.

This case report of parotid adenocarcinoma with histologically confirmed proximal femoral metastasis treated by prophylactic fixation is the first of its kind in the English literature. Indeed, it represents the first and only report of adenocarcinoma of parotid gland origin metastasising to a long bone in a human adult.

Teaching point

Distant metastases from primary malignant parotid gland tumours are rare. This case represents the only report of adenocarcinoma of parotid origin metastasising to a long bone. Recognition of
such data is important for appropriate and early management of patients, and to develop understanding of the disease.

References