Diagnostic Considerations in Metastatic Carcinoma to the Masster Muscle: A Case Series

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Abstract

Metastatic carcinoma to the masster muscle is extremely rare, with only 2 reported cases involving metastatic breast carcinoma and only one reported case involving metastatic adenocarcinoma of unknown origin. We report two new cases of metastatic carcinoma to the masster. A 60 year old woman with metastatic breast carcinoma, and 60 year old woman with metastatic adenocarcinoma of unknown origin both with metastasis in the masster muscle. Diagnosis of metastatic lesions in the masster muscle can be especially challenging and patients often have poor prognosis. We discuss the value of different diagnostic modalities, and review considerations in management and treatment.

Introduction

Metastases to skeletal muscle are an uncommon clinical finding. Autopsies have demonstrated an incidence ranging from 0.8% to 16% with relatively few clinically significant lesions noted. Considering specifically lesions of the head and neck, few primary lesions are reported to metastasize to the masster. We report the third known case of metastatic masster muscle carcinoma and the second case of metastatic adenocarcinoma. Emphasis is placed on diagnostic and therapeutic considerations in the context of a review of the literature.

Case

A 71 year old female was referred for recently diagnosed malignancy of the left cheek mass on core needle biopsy. She was in her usual state of health until 4 months prior when she noticed swelling in the mid left cheek, which was firm but painless. The mass barely increased in size since its original discovery. The patient denied trismus or other head & neck symptoms except for vague left otalgia. Her past medical history was significant for COPD, distant history of alcohol abuse, and former history of smoking 1-2 pack a day until 2006. On physical exam, the patient had a firm and mobile 2.5 cm mass in mid left cheek and no palpable adenopathy. Cranial nerves were intact, and patient did not have trismus. A CT of the sinuses demonstrated a well-circumscribed mass within the left masster muscle at the anterior aspect of the parotid gland without erosion of the mandible. A PET scan showed increased uptake in the masster muscle and in left neck level II. The rest of the exam was unremarkable.

The patient elected surgical resection of the left cheek mass for diagnosis and treatment, and she underwent left total parotidectomy, left masster muscle resection, and modified left neck dissection levels II-IV. Surgical pathology results showed a left masster muscle mass consistent with adenocarcinoma [Figure 4A]. The specimen was noted to be thyroid transcription factor -1 (TTF-1) positive suggestive of either thyroid or pulmonary origin [Figure 4B]. The parotidectomy specimen contained 10/13 metastatic lymph nodes, and the left neck specimen was positive for metastatic adenocarcinoma in 9/22 nodes. Detailed pulmonary evaluation demonstrated no evidence of a primary lesion, and it was suggested this may represent minor salivary gland origin. The patient received definitive concurrent chemoradiation treatment with 60 Gy administered to the cheek/parotid bed and left neck. At 6 months follow-up, patient was referred for palliative measures due to diffuse metastatic disease, yet the primary lesion is to be determined.

Discussion

A 60 year old Hispanic woman was diagnosed with breast carcinoma in May 2002. The patient received neoadjuvant chemotherapy followed by left modified radical mastectomy and adjuvant chemotherapy. Her surgical biopsy and pathology were reported infiltrating ductal carcinoma with estrogen receptor positive and HER-2/neu receptor positive. In 2005, she was diagnosed with recurrent stage IV breast cancer with metastasis to the bone, liver, and left maxilla. She underwent multiple courses of chemotherapy and radiation treatment, including 50 Gy via IMRT technique to her left maxilla. In October 2009, the patient presented to our clinic complaining of left facial swelling. Physical exam revealed left masster hypertrophy confirmed by computed tomography (CT) imaging without contrast [Figure 4A]. These findings were attributed to radiation therapy. At follow up visits, patient did not complain of any related symptoms other than mild trismus, headache, and longstanding joint pain treated with narcotic analgesia.

Further observation noted progressive enlargement of the left masseter muscle mass noted on CT scan of the paranasal sinuses, face and neck without IV contrast [Figure 1B]. Fine needle aspiration of the mass in September 2010 confirmed metastatic carcinoma consistent with a breast primary [Figure 3]. Due to previous treatment and technical limitation caused by the size of the mass, the patient was not a candidate for radiation therapy and was encouraged to continue with chemotherapy. However, patient repeatedly missed her chemotherapy sessions and was lost to follow up. In April 2011, the patient presented with further disease progression on MRI [Figure 2A,B] but preservation of facial nerve function. Due to intracranial invasion, it was deemed resectable, and the patient was referred for palliative measures.

Conclusion

Metastatic lesions to the head and neck are often found in advanced stage of disease with a very poor prognosis. A prompt and accurate diagnosis requires a high degree of suspicion and appropriate initial radiologic studies in order to treat and counsel the patient. Therapy may involve a combination of radiation, chemotherapy, and surgical resection. However, surgical resection is advisable for patients with focal metastatic disease and, therefore, should be encouraged to maximize quality of life.