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Case Report

Metastatic Rhabdoid Melanoma of Parotid Gland: Remarkable Response to Paclitaxel/Carboplatin Combination

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Abstract

Melanoma with rhabdoid features is an uncommon variant of malignant melanoma. We report the first case of melanoma with rhabdoid features arising from parotid gland.

A 67-year-old, white male presented with a solid, mildly tender, nodular mass in the right parotid gland, with extension posterior to the auricle with ipsilateral complete facial nerve palsy. A diagnosis of rhabdoid melanoma was made based on clinical, radiological and biopsy findings. The patient underwent a radical parotidectomy with a radical neck dissection following by adjuvant radiotherapy. Unfortunately, 1 year later metastatic disease was diagnosed. The patient received four courses of the monoclonal antibody ipilumumab with disease progression. The therapy was switched to combination intravenous chemotherapy with Carboplatin and Paclitaxel with clinical improvement with a disappearance of abdominal pain and trismus. He had shown progression after ten months of chemotherapy. Conclusion: Chemotherapy with paclitaxel/carboplatin combination may be effective for patients with metastatic rhabdoid melanoma.

Keywords: Rhabdoid melanoma; Parotid gland; Ipilumumab; Paclitaxelcarboplatin

Introduction

Melanoma with rhabdoid features is an uncommon variant of malignant melanoma. Since the first description of rhabdoid melanoma in 1992 by Bittesini et al., just about 40 cases of melanomas with rhabdoid features have been reported, only five have involved rhabdoid features in primary melanomas [1,2].

Histologically, rhabdoid tumors are characterized by large sheets of polygonal cells with abundant cytoplasm containing eosinophilic inclusions and a peripherally a displaced vesicular nucleus. They have diverse patterns of immunohistochemical stains to S-100 and vimentin as well as, in some cases, keratins and desmin, and frequently lose HMB-45 expression [3]. Primary malignant melanoma of the parotid gland is extremely rare and rhabdoid melanoma had not been previously reported in the parotid gland.

We report here on a patient with metastatic rhabdoid melanoma of parotid gland who responded to paclitaxel-carboplatin combination after failure of ipilumumab.

Case Report

In November of 2009, a 67-year-old, white male was seen as an outpatient for swelling in his right cheek. The patient was in good health until six months prior when he noted a small mass in his right cheek, this rapidly progressed in the weeks prior to presentation to our hospital. His medical history is significant only for heavy smoking.

Examination revealed a solid, mildly tender, nodular mass in the right parotid gland, with extension posterior to the auricle with ipsilateral complete facial nerve palsy. ENT exam could show no other abnormalities in the oral cavity, nasopharynx, larynx or ears. A full dermatological and ophthalmologic examination found no evidence of melanoma in the skin or eyes.

Fecal occult blood test was positive; colonoscopy and upper gastrointestinal endoscopy found no significant pathology. Blood analyses included a complete blood count, biochemical analysis and coagulation studies all were unremarkable.

In November of 2009 a fine needle aspiration (FNA) revealed many neoplastic cells of undeterminable origin.

Computed tomography (CT) revealed a non-homogenous, infiltrative mass in the right parotid gland, measuring 6.0 by 6.5 cm, extending into the major cervical vessels and to the posterior muscles of the neck. Positron emission tomography-computer tomography (PET-CT) scan showed significantly increased uptake of [18F] fluorodeoxyglucose (FDG) in the right parotid mass without evidence of distant metastasis.

Incisional biopsy showed neoplastic cells with pleomorphic and anaplastic nuclei and abundant eosinophilic cytoplasm. Most cells exhibited large, globular, "hyaline" cytoplasmatic inclusions that displaced the nuclei peripherally (Figure 1A). Histological and immunohistochemical staining showed that the tumor cells were positive for S100, vimentin, S-100 protein (Figure 1B) and cytokeratin (Figure 1C). They were negative for EMA and Desmin. A diagnosis of rhabdoid melanoma was made based on these findings.

In January 2010, the patient underwent a radical parotidectomy and a radical neck dissection of levels I – V, including the sternocleidomastoid muscle, VII and XI cranial nerve (CN), internal jugular vein and carotid artery and branches. The lingual nerve and XII CN were spared.

Pathological examination showed extensive local invasion and metastases in 2 out of 51 regional lymph nodes. Histologically, the tumor was consistent with rhabdoid melanoma.

Adjuvant external beam radiation therapy, directed at the tumor bed and cervical lymph nodes, was administered.

In December 2010, the patient complained of abdominal discomfort. A PET-CT scan revealed a new, hypermetabolic mesenteric lesion, measuring 6.6 cm in size. Core biopsy confirmed

metastatic melanoma which stained positive for melanoma markers, vimentin, S-100 protein and pan-keratin.

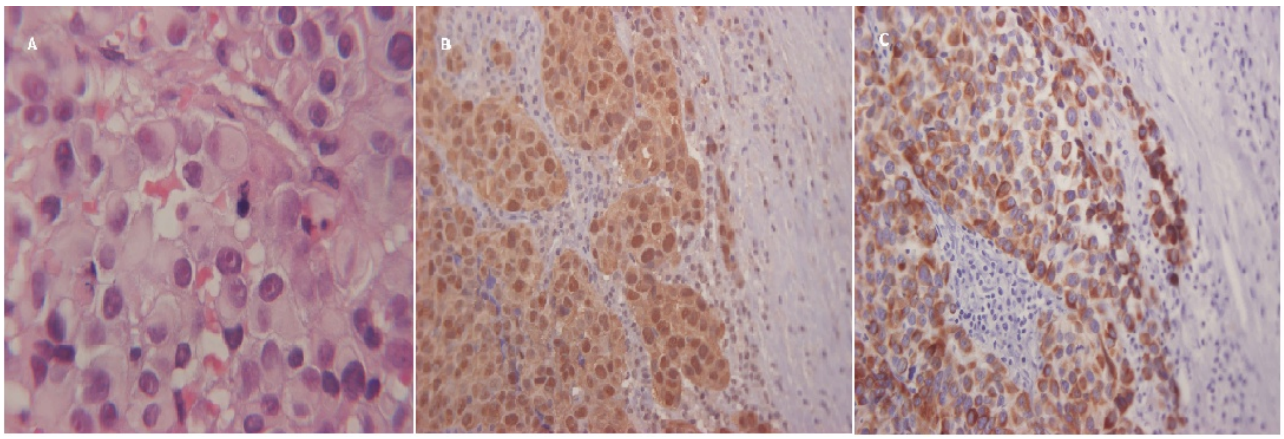

Figure 1: Hematoxyline and eosin photomicrograph of parotid gland (magnification x100, figure 1A). Most cells exhibited large, globular, "hyaline" cytoplasmatic inclusions that displaced the nuclei peripherally. Positive immunohistochemical staining for S-100 protein (figure 1B, magnification x40) and cytokeratin (figure 1C, magnification x40)

In February of 2011, chemotherapy with Dacarbazine (DTIC) 400 mg/m2 on days 1, 2, was started. After 2 courses of chemotherapy, the patient complained of worsening abdominal pain and swelling in right temple with mild trismus. PET/CT imaging in March of 2011 showed additional disease progression: the size and metabolic rate of the abdominal mass increased and new uptake of FDG above the zygomatic arch was found.

The patient was then switched to Ipilimumab 3mg/kg every 3 weeks for four courses.

Nonetheless, the abdominal melanoma continued to grow, as evidenced by CT imaging from May of 2011, which showed an enlargement of the mesenteric mass to 20.3 cm. The mass was non–homogenous with central area of hypodensity, probably necrosis and exerting a mass-effect on adjacent organs (Figure 2A, axial view, Figure 2B, coronal view). The patient was highly symptomatic with severe abdominal pain, trismus and encountered difficulty eating.

In June 2011, therapy was switched to combination IV Carboplatin (AUC-5) and Paclitaxel (175 mg/m2) every three weeks. Under this treatment there was clinical improvement with a disappearance of abdominal pain and trismus.

In April 2012, he started to show signs of progression after ten months of chemotherapy with paclitaxel/carboplatin.

Discussion

To the best of our knowledge, this is the first patient with metastatic rhabdoid melanoma of parotid gland. Another distinctive feature of the current case is significant partial response to paclitaxel-carboplatin combination with relief of his symptoms.

The serum Lactate dehydrogenase levels decreased from 1200 IU/L before the treatment to and to 450 (Units) in the most recent test. Most impressive was the decrease in tumor size, which measured after treatment 20.3 to 9.1 cm, as can be seen in a CT-scan from February 2012 (Figure 2C, axial view, Figure 2D, coronal view).

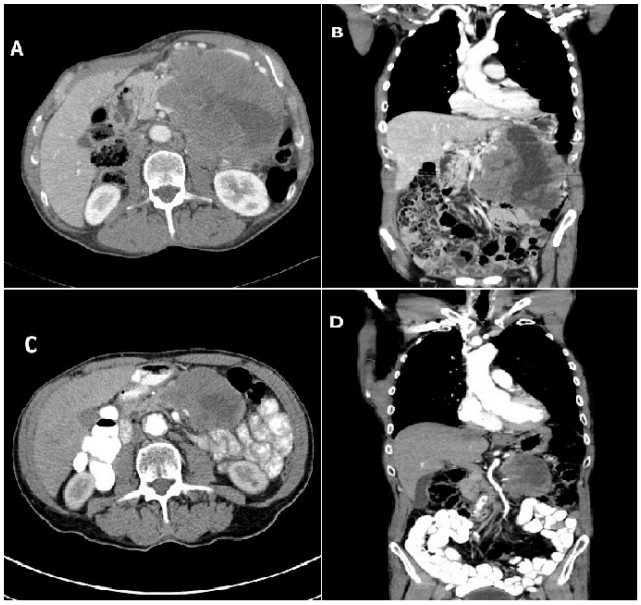

Figure 2: CT scan from May of 2011 showed an enlargement of the mesenteric mass to 12.9*10.2*20.3 cm (figure 2A, axial view, figure 2B, coronal view). CT scan from February 2012 showed decrease in tumor size, measured after treatment 7.2*7.6*9.1 cm (figure 2C, axial view, figure 2D, coronal view).

Due to the scarcity of rhabdoid melanoma and extremely poor prognosis of metastatic melanoma, no discernible prognostic and significance has been established between metastatic malignant melanoma and rhabdoid morphology [4].

Malignant melanoma is an aggressive disease with few treatment options. Chemotherapy has limited benefit in this disease [5]. Recently, several studies have advanced the understanding and

treatment of melanoma, with a particular focus on approaches that activate the immune system against the disease and molecularly targeted therapy.

The monoclonal antibody ipilumumab, which blocks cytotoxic T-lymphocyte associated antigen 4 (CTLA-4), extended survival in patients with metastatic melanoma [6].

Another study showed promising activity of the BRAF kinase inhibitor, vemurafenib (PLX4032), with improved response rate, overall and progression-free survival in patients with previously untreated melanoma with the BRAF V600E mutation [7].

The combination of paclitaxel and carboplatin has been shown to be modestly active in metastatic melanoma. Data from a phase II trial and a retrospective review showed an objective response rate (ORR) of this combination of approximately 20%-25% [8]. Three phase II trials of paclitaxel as a single agent in advanced melanoma demonstrated a mean response rate (mostly partial responses) of approximately 17% [9]. In addition a recently reported phase II trial utilizing Nab-paclitaxel (ABI-007) and carboplatin showed a response rate of approximately 25.6 % with median progression free survival of 4.1 months [10].

Our case, a patient with rhabdoid melanoma of the parotid gland a partial response after paclitaxel/carboplatin was acheived suggesting that this combination may be effective for patients with metastatic rhabdoid melanoma.

Conflicts of Interest

The author(s) indicated no potential conflicts of interest.

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