Case Report

Chronic Cough: Tapia’s Syndrome as a Result of Relapsed Metastatic Primary CNS Lymphoma

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Abstract

An 84 year-old man presented with chronic cough and subsequent dysphagia. He was noted to have hoarse speech, right tongue atrophy and weakness, and a palpable right cervical lymph node. Nasolaryngoscopy confirmed right-sided vocal cord paralysis, and magnetic resonance imaging showed ill-defined tissues and lymphadenopathy in the right tonsillar region, and he was diagnosed with Tapia’s syndrome secondary to metastatic primary CNS lymphoma. He subsequently underwent laryngoplasty with hyaluronic acid gel injection, but deferred chemotherapy or radiation, and passed away shortly thereafter. This is the first reported case of adult-onset Tapia’s syndrome secondary to metastatic primary CNS lymphoma.

INTRODUCTION

Tapia’s syndrome, also known as “matador’s disease” was first described by otolaryngologist Antonia Garcia Tapia in 1904, after he evaluated a bullfighter that was struck by a bull on the right side of his right neck, resulting in paresis of right vocal cord and right tongue [1]. The syndrome is now defined as ipsilateral hemiplegia of the larynx and tongue as a result of concurrent paralyses of the recurrent laryngeal nerve and hypoglossal nerves [1]. Causes of this rare syndrome include trauma (intubation or neck hyperextension during surgery) and less commonly, malignancy. We report the first case of adult-onset Tapia’s syndrome in a patient secondary to metastatic primary CNS lymphoma.

CASE PRESENTATION

An 84 year-old man was seen in allergy clinic for follow-up on asthma. His past medical history was significant for asthma with chronic obstructive pulmonary disease, allergic rhinitis, chronic sinusitis without nasal polyps, gastroesophageal reflux, hypertension, hyperlipidemia, chronic kidney disease stage 3, 80 pack-year tobacco smoking history, history of smokeless tobacco use coronary artery disease, atrial flutter/fibrillation, benign prostatic hypertrophy, low grade bladder tumor, primary central nervous system (CNS) lymphoma in remission, and monoclonal gammapathy of undetermined significance [2-6]. His CNS lymphoma had been diagnosed two years prior when he presented with vision change and confusion, and was found to have a lobulated enhancement within subcortical white matter of the left occipital lobe. He underwent frameless stereotactic biopsy of the left occipital tumor and pathology was consistent with large B-cell lymphoma. Imaging did not reveal any metastases at that time. In the five months after diagnosis, he underwent chemotherapy including nine cycles of methotrexate, six cycles of rituximab, and twelve cycles of temozolomide, as well as radiation therapy. Subsequent imaging showed resolution of the tumor, and patient was deemed to be in remission and he had been undergoing surveillance magnetic resonance imaging of the brain every six months. His surgical history included two coronary artery bypass graft surgeries in 1976 and 1997, transurethral prostatectomy in 2009, resection of low-grade bladder neoplasm in 2009, and cataract surgery in 2009.

On initial evaluation, the patient reported two months of cough, as well as dysphagia and worsening cough with liquids and solids. He had previously been on prednisone three times per week for CNS lymphoma, and endorsed that cough may have started once the prednisone was stopped. He was noted to be cachectic with a hoarse voice. He was started on two week treatment with prednisone for cough and possible sinusitis, and advised to continue mometasone 200mcg-formoterol 5mcg two puffs twice a day, and to start tiotropium 18mcg inhale one.
capsule per day. CT sinus and chest x-ray was ordered, and he was referred to speech therapy for further swallow study evaluation, and referred to otolaryngology to evaluate hoarseness. Speech therapy noted to moderate hoarse vocal quality, mild oral and moderate pharyngeal dysphagia. CT sinus showed marked improvement of sinus disease compared to prior studies. Chest x-ray showed post-surgical sternotomy wires, small left pleural effusion, and no focal consolidations. Otolaryngology performed nasal endoscopy revealed post-surgical endoscopic surgical changes, mild recurrent polyp disease in the ethmoids bilaterally, with boggy, edematous, pale and bluish mucosa with thin mucus secretions bilaterally. Fiberoptic laryngoscopy revealed right true vocal cord paralysis (Figure 1). MRI brain, neck and chest were ordered, and patient was referred to laryngologist for vocal cord collagen injection for right vocal cord paralysis—to assist with hoarseness while etiology was established.

In the interim, patient followed-up with his neurologist, who noted hoarse speech, right tongue atrophy and weakness, right lateral cervical lymph node, suggestive of Tapia’s syndrome. MRI brain, neck and chest had not yet been completed; however, there was concern for recurrence of his B-cell lymphoma in right lateral pharyngeal space.

The day after evaluation by neurology, patient presented to emergency department acutely with dehydration and unintentional weight loss suspected secondary to his ongoing dysphagia. MRI imaging was expedited while the patient was hospitalized. MRI brain was not suggestive of recurrent intracranial tumor. MRI neck and chest revealed moderate asymmetric enlargement of tonsillar tissues in the region of Waldeyer’s ring—the right-sided tonsillar tissues appeared more bulky and lobulated than left and lymphadenopathy with ill-defined enhancing tissue seen near the area of the carotid sheath surrounding the internal carotid artery. Asymmetry of vocal cords was noted with medial displacement of the dorsal aspect of the right cord and poorly defined mildly enhancing soft tissue within the posterior larynx near the cord level (Figures 2, 3). Based on the patient’s physical exam and his imaging, recurrence of his lymphoma was suspected. He declined feeding tubes, and was discharged from hospital to follow-up with neuro-oncology and otolaryngology for biopsy and treatment.

Once discharged, neurology-oncology recommended biopsy, and imaging to evaluate for metastases. Once suspected diagnosis of recurrent B-cell lymphoma was confirmed, they planned to proceed with ibrutinib (imbruvica) 560 mg daily, with referral to radiation oncology for consideration of radiation therapy to skull base/neck region.

Unfortunately, five days after his initial discharge to the hospital, he returned with similar symptoms of dysphagia and shortness of breath. He was again discharged in stable condition, with outpatient referral to palliative care due to his worsening clinical condition. Biopsy had not yet been performed. Patient had voiced his concerns with pursuing chemotherapy and radiation therapy.

Five days after discharge, he saw laryngology as an outpatient and underwent laryngoplasty with hyaluronic acid gel (Juvederm) injection of the right paralyzed vocal cord in hopes of improving his ability to eat and speak while awaiting biopsy and further treatment options.

A few days later, patient returned to the hospital again with seizures, suspected secondary to metastatic lymphoma. The patient met with the palliative care team, and he ultimately declined any further work-up or treatment. He was discharged on home hospice, and passed away two weeks after discharge from the hospital.
DISCUSSION

A total of 39 cases of Tapia syndrome have been reported in the literature. Five cases were secondary to benign or malignant tumors (Table 1). The majority of cases reported were sequelae of intubation or neck hyperextension during surgery. Other causes include one congenital case [7], and two infectious cases [8, 9].

Tapia syndrome is largely a clinical diagnosis based on testing the function of the recurrent laryngeal and hypoglossal nerves, and is a diagnosis that should be considered in any patient that presents with chronic cough and dysphagia. The diagnosis can be supported by history, especially if there was a recent surgery or intubation. While not required, imaging can be useful in visualizing the vocal cords by nasolaryngoscopy, and evaluating for mass lesions with either computed tomography or magnetic resonance imaging of the neck.

Boga et al describe a classification for Tapia syndrome, ranging from grade I, or mild type, to grade III, or severe type [10]. However, the classification of severity is largely subjective, without any objective criteria, and their classification is based only on cases secondary to intubation. The initial goals of management involve reversing the inciting cause, or trying to prevent injury to the airway. In patients who are to undergo surgery, these recommendations include proper positioning techniques, and avoiding airway trauma during intubation and extubation. There has been no validated treatment for Tapia syndrome, but there are reports that treatment with corticosteroids can help with reversing symptoms. Overall, the treatment is supportive. Speech and language therapy provide patient with guidance regarding their dysphagia. In our patient, due to his weight loss and dehydoration, laryngoplasty was performed as a transient effort to improve patient’s ability to eat and speak while awaiting biopsy and further treatment recommendations, especially as it remained unclear if our patient be amenable to chemotherapy or radiation once it was offered.

Patients who have Tapia’s syndrome as a result of intubation trauma or neck hyperextension may recover their function within hours to weeks. In contrast, those who have Tapia’s syndrome as a result of primary or metastatic malignancy, the recovery is dependent upon the treatment of the malignancy itself. Early recognition and treatment in these patients would likely result in reduced morbidity. In our patient, ibrutinib was chosen as a treatment for his suspected recurrence of large B-cell lymphoma. Ibrutinib is a Bruton’s tyrosine kinase inhibitor, and it is a category of drugs that has recently shown promising success in the treatment of large B-cell lymphoma [11-15]. While steroids are used to treat Tapia syndrome, our patient responded well to steroid treatment before he was diagnosed with Tapia syndrome. This is clinically important—patients with multiple comorbidities who present with chronic cough who also have either asthma or malignancy or chronic sinusitis may improve with steroids. This does not rule out, and may even mask the diagnosis of Tapia syndrome. In patients who have recurrent symptoms once steroid therapy is completed, it is imperative to do a thorough work-up and follow-up on appropriate studies, such as computed tomography of the sinuses or pulmonary function testing.

Chronic cough and dysphagia are commonly encountered in the clinical setting. The broad differential diagnoses of chronic cough includes upper airway cough syndrome, gastroesophageal reflux, cough variant asthma, neuropathic/irritable larynx, and iatrogenic secondary to medications such as ace-inhibitors. Dysphagia is also a common presenting symptom, especially in the elderly—where differential diagnoses includes spastic motility disorders, presbyesophagus, infectious esophagitis, or strictures. Oftentimes, chronic cough is attributed to aspiration from dysphagia. However, in a patient who presents with chronic cough and dysphagia, who also has risk factors or past medical history of malignancy, rare causes, such as Tapia’s syndrome, should not be overlooked.

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REFERENCES

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