NEUROENDOCRINE CARCINOMA OF THE NASOPHARYNX - A CASE REPORT

Small cell neuroendocrine carcinoma, also known as oat cell carcinoma is a frequently encountered bronchogenic neoplasm. Neuroendocrine carcinomas of the head and neck are rare aggressive tumors and pose a diagnostic and management challenge. Differentiation from conventional nasopharyngeal carcinoma is difficult due to morphological characteristics and small biopsy specimen. Distinguishing is very important because of difference in natural history, prognosis and treatment among these neoplasms. In this article we present an unusual case of 51 year old man with small cell neuroendocrine carcinoma of nasopharynx, who was treated with radiotherapy and achieved complete tumor remission. Subsequently he developed local recurrence and liver metastasis and succumbed to the disease.

Keywords: Small cell neuroendocrine carcinoma, radiotherapy, nasopharynx, soft palate.

UDC: 616-006

Introduction

Small cell neuroendocrine carcinoma is a rare malignancy of the head and neck (Monroe et al., 2005; Capelli et al., 2007). It is most common in the larynx, where it represents 0.5-1% of epithelial cancers. This tumor usually appears in the sixth or seventh decade of life and carries poor prognosis. The diagnosis is based on recognition of the characteristic neuroendocrine architecture and on the immunohistochemical confirmation of neuroendocrine differentiation. Diagnosis can be delayed as a result of the entity’s rarity and tissue histology (Ferlito and Rinaldo, 2003). Therapeutic options are various combination of surgery, chemotherapy and radiation therapy (Ferlito and Polidoro, 1980; Klussmann and Eckel, 1999; Ferlito et al., 1981).

Case report

A 51 year old Malay gentle man presented with dysphagia and bilateral neck swelling for 5 months. He was apparently well 5 months ago, his dysphagia progressively worsened with occasional odynophagia. Nasal block with hyponasal speech also developed. He didn’t have any difficulty in breathing or aspiration. He had history of right sided tinnitus with reduced hearing. He had significant loss of weight. He had been a heavy smoker for 30 years.

Examination revealed bilateral enlarged neck nodes in various levels with enlarged left thyroid nodule. Oral cavity reveals ulceroproliferative lesion over the soft palate. Nasal airway was reduced on right side. Nasal endoscopy revealed the lesion on the soft palate extending in to the fossa of Rosenmuller. Ear examination showed right middle ear effusion. Systemic review demonstrated no paroxysmal rise in blood pressure, no organomegaly and no cushingoid features. His thyroid function test was normal; HIV as and hepatitis screening were negative. The patient proceeded biopsy of the soft palate and post nasal space lesion. Histopathology confirmed a small cell neuroendocrine carcinoma. Fine needle aspiration of the neck nodes revealed metastatic poorly differentiated carcinoma. CT scan revealed bilateral cervical lymphadenopathy with post nasal space thickening with obliteration of fossa of Rosenmuller. Large thyroid nodule in left lobe of thyroid with tracheal deviation to right side.
Patient had been referred to endocrinologist and investigated for any stigmata of paraneoplastic syndromes. He underwent total thyroidectomy and histopathological study demonstrated multinodular goiter. He was started on L-thyroxine and calcium lactate. The patient was then referred to oncologist. He was treated with full course radiotherapy to nasopharynx, oropharynx. He achieved complete tumor remission. During one month post radiotherapy follow up the patient was comfortable with normal speech and swallowing. Rigid nasal endoscopy revealed no mass lesion and there were no palpable neck nodes.

Patient came back to clinic two months later with nasal block and blood stained nasal discharge. Examination showed nasal airway was totally diminished due to ulceroproliferative mass occupying whole right and left nasal cavity which easily bleeds on touch. Neck examination showed multiple neck nodes. Biopsy of the nasal mass revealed neuroendocrine carcinoma. Repeat CT scan showed enhancing mass in right nasal cavity crossing over to left extends to maxillary sinus with destruction of medial wall of maxillary sinus and nasal septum. There were multiple hypodense lesions in right lobe of liver. Clinical diagnosis of recurrence in nasal cavity with liver metastasis was made and patient had been referred to oncology. Unfortunately patient succumbed to the disease prior to the initiation of further treatment.

Discussion

Small cell carcinoma accounts for 10-20% of all primary malignancies of the tracheobronchial tree. It is defined as high grade epithelial neoplasm with neuroendocrine differentiation at both immunohistochemical and ultrastructural levels (Monroe et al., 2005). This highly lethal aggressive carcinoma is also referred as small cell undifferentiated carcinoma, oat cell carcinoma, anaplastic carcinoma (Capelli et al., 2007; Ferlito and Rinaldo, 2003). The majority of neuroendocrine neoplasm in the head and neck arise from larynx (Ferlito and Poldoro, 1980; Klussmann and Eckel, 1999). The laryngeal neuroendocrine tumors have an overall male predilection and the same seems to be true of nonlaryngeal neuroendocrine carcinomas of the head and neck.

Neuroendocrine carcinoma of the head and neck may be stratified into a number of subsets on the basis of appearance under light microscopy, immunohistochemical staining, ultra structural findings and clinical course (Monroe et al., 2005). These tumors have an epithelial or neural origin. The neural subgroup includes paraganglioma and epithelial subgroup includes typical carcinoids, atypical carcinoids and small cell neuroendocrine carcinoma. These tumors may be associated with paraneoplastic syndromes including Cushing, Eaton-Lambert and Schwartz- Bartter syndrome (Ferlito and Rinaldo, 2003; Klussmann and Eckel, 1999; Ferlito et al., 1981).

Cytokeratin is the most useful marker to differentiate between neural and epithelial neuroendocrine tumors. A battery of immunohistochemical markers were used to further classify epithelial subgroup. The use of immunostains, electro microscopy, and molecular genetics has increased our understanding of this lesion, but this approach has not yet replaced the use of routine microscopy. The mainstay of diagnosis of this tumor remains light microscopy (Monroe et al., 2005; Ferlito and Rinaldo, 2003).

On small biopsy specimen it may be difficult to distinguish small cell neuroendocrine carcinoma from basaloid squamous cell carcinoma and adenocystic carcinoma; but immunohistochemistry is very useful in distinguishing these three entities. Clinical presentation of these tumors can mimic conventional nasopharyngeal carcinoma. Differentiation from the more common nasopharyngeal squamous cell carcinoma is important for management and prognostic purposes. Once the diagnosis is secured, a metastatic work up is necessary. The most common sites of spread are cervical lymph nodes, liver, lung and bone. Approximately 50% of patients have cervical metastasis on initial presentation (Capelli et al., 2007; Ferlito and Rinaldo, 2003; Klussmann and Eckel, 1999). Small cell carcinoma of the head and neck is also notable for hematogenous dissemination.
These tumors are often disseminated at diagnosis, thus it is important to perform thorough metastatic work up to detect regional and or distant metastases before initiating the treatment. Therapeutic options include various combinations of surgery, chemotherapy and radiotherapy (Monroe et al., 2005; Capelli et al., 2007; Ferlito and Rinaldo, 2003). Surgical results for this tumor have been disappointing and are reserved for cases of local relapse with no evidence of metastases (Ferlito and Polidoro, 1980; Klussmann and Eckel, 1999; Ferlito et al., 1981). Despite combined modality treatment prognosis is poor. The high likelihood of dissemination resulting low survival rates indicates that further advances in systemic therapy are desperately needed. Due to the rarity of these tumors, no specific treatment guidelines exist at present. A large number of case series with improved clinical, morphological and treatment response correlation studies are necessary to provide best treatment options.

Conclusion

It is very important to distinguish highly lethal small cell neuroendocrine carcinoma of nasopharynx from conventional nasopharyngeal squamous cell carcinoma which carries relatively good prognosis and good response to radiotherapy.

References