**ABSTRACT**

**INTRODUCTION**

Amyloidosis is a complex disease entity involving the pathologic misfolding and extracellular deposition of insoluble fibrillar protein aggregates. These deposits are identified as “amyloid” when viewed under polarized light microscopy, displaying the pathognomonic apple-green birefringence following staining with Congo red.

Amyloidosis may occur either as a primary or secondary process, of latter of which can be seen in chronic inflammatory states, and more rarely as a paraneoplastic process in the setting of a known malignancy. This has most commonly been described in renal-cell carcinoma, which accounts for the majority of cases of paraneoplastic amyloidosis. Although some head and neck malignancies are known to cause local amyloid deposition in the immediately surrounding soft tissues, systemic amyloidosis as a paraneoplastic process is exceedingly rare in head and neck oncology and has not been well described in the current literature.

The following case report describes an unusual occurrence of paraneoplastic pulmonary amyloidosis in the setting of a large oral cavity squamous cell carcinoma.

**METHODS**

A case of paraneoplastic pulmonary amyloidosis in a patient diagnosed with a head and neck malignancy is described. Histopathological findings and radiologic studies obtained during disease work-up will be reviewed.

**CASE REPORT**

A 73 year old male with a significant smoking history presented to a tertiary care medical center with complaints of pain in the left floor of mouth and jaw. A basaloid squamous cell carcinoma involving the left paramedian portion of the gingiva with invasion into the mandible was identified. A multidisciplinary treatment plan was formulated, involving a composite mandibulectomy and reconstruction using an osteocutaneous free tissue transfer with microvascular Anastomosis. His pre-operative medical evaluation included routine imaging with a chest PA and lateral plain film to evaluate for cardiopulmonary disease and as well as the possibility of pulmonary metastases. Subsequently, multiple pulmonary nodules of the right lower lobe and right infralobar region were identified, suggestive of possible metastatic disease.

A CT guided core biopsy of the larger pulmonary nodule was performed to obtain a definitive tissue diagnosis. On histologic evaluation, there was evidence of abundant amorphous eosinophilic extracellular material exhibiting apple-green birefringence via polarized light microscopy following staining with Congo red. Subsequent immunohistochemical evaluation demonstrated positivity for light chains, conferring a diagnosis of AL amyloidosis.

The patient was eventually worked up for concurrent disease processes associated with amyloidosis (lymphoproliferative disorders such as lymphoma or multiple myeloma). No other underlying etiology was identified. Serum plasma electrophoresis was performed, which demonstrated elevation of both kappa and lambda light chains, suggesting a secondary process due to chronic infection or inflammatory state. As such, a diagnosis of paraneoplastic pulmonary amyloidosis was established.

The patient ultimately underwent surgical resection with free flap reconstruction in January 2010. A post-treatment serum plasma electrophoresis was performed, which demonstrated resolution of the previously identified serum kappa and lambda light chains. This was confirmed with serum immunofixation, which was negative for monoclonal immunoglobulin.

The patient is currently doing well following tissue biopsy demonstrating pulmonary amyloidosis. Histopathological and radiological findings are reviewed.

**CONCLUSIONS**

Though rare in the setting of head and neck oncology, it is important to consider paraneoplastic amyloidosis in the differential diagnosis while investigating pulmonary nodules found on preoperative imaging. Pulmonary amyloidomas may arise as a paraneoplastic process, as has been described in the current report.