Abstract

INTRODUCTION:
Radiotherapy is a mainstay of treatment for head and neck malignancies, with well described complications including xerostomia, mucositis, osteoradionecrosis, and soft tissue necrosis. Soft tissue necrosis may occur as a late effect of therapy, and may progress to fistula formation, which can serve as a nidus for infection. Pharyngo-vertebral fistula is a rare entity, and even more rare complication of head and neck irradiation, with most cases reported in association with cervical spine surgery.

OBJECTIVE:
Describe an unusual case of pharyngo-vertebral fistula occurring as a delayed complication of head and neck irradiation.

METHOD:
Case report, literature review.

RESULTS:
A 63 year old man presented with T3N1M0 squamous cell carcinoma of the hypopharynx, involving the posterior pharyngeal wall at the esophageal introitus. He was treated with chemoradiation, requiring tracheostomy and gastrostomy tube support. Six months after treatment he presented with pneumonia and increasing neck pain. Workup included neck CT and MRI C-spine which demonstrated a fistulous tract to C3-C4 vertebral bodies. Operative endoscopy showed a well demarcated fistulous tract with bone exposure, and friable tissue more inferiorly at the esophageal introitus, biopsy of which revealed recurrence. He underwent total laryngopharyngectomy with excision of the pharyngo-vertebral fistula, debriement of necrotic bone and reconstruction with tubed anterolateral thigh free flap.

CONCLUSION:
We describe a case of pharyngo-vertebral fistula complicating hypopharyngeal chemoradiation therapy. This is the first reported case describing these features, and highlights the diagnostic and treatment challenges for this entity.

Introduction

Radiation therapy is a mainstay of treatment for head and neck malignancies, with well described complications including xerostomia, mucositis, osteoradionecrosis, and soft tissue necrosis. Soft tissue necrosis may occur as a late effect of therapy, and may progress to fistula formation, which can serve as a nidus for infection. Pharyngo-vertebral fistula is a rare entity, and even more rare complication of head and neck irradiation, with most cases reported in association with cervical spine surgery.

Case Report

A 63 year old man presented with T3N1M0 squamous cell carcinoma of the hypopharynx, involving the posterior pharyngeal wall at the esophageal introitus. He was treated with chemoradiation, requiring tracheostomy and gastrostomy tube support. Three months after treatment he underwent post-treatment operative endoscopy, which revealed a mucosal depression and ulceration of the posterior pharyngeal wall (Figure 1) as well as esophageal stenosis. Biopsies of this area showed no evidence of malignancy and finding were attributed to post-radiation necrosis. Two months later repeat operative endoscopy again demonstrated the mucosal depression and ulceration of the posterior wall of the hypopharynx, which was stable in size.

Six months after treatment he presented with pneumonia and increasing neck pain. Workup included neck CT and MRI which revealed a fistulous tract from the hypopharynx to C3-C4 vertebral bodies, and definitive of bone necrosis. Operative endoscopy showed a well demarcated fistulous tract with bone exposure, and friable tissue more inferiorly at the esophageal introitus, biopsy of which revealed recurrence (Figure 3). He underwent total laryngopharyngectomy with excision of the pharyngo-vertebral fistula, debriement of necrotic bone from C3 and C4, and pharyngeal reconstruction with a tubed anterolateral thigh free flap.

Discussion

We describe a case of pharyngo-vertebral fistula complicating hypopharyngeal chemoradiation therapy. This is the first reported case describing these features, and highlights the diagnostic and treatment challenges for this entity. Monitoring for tumor recurrence in patients who receive high dose curative radiation therapy remains challenging. Despite vigilant post-treatment monitoring, biopsies, and imaging, tumor recurrence may go undetected especially in the setting of severe radiation induced changes.

References