Adenocarcinoma of Cervical Esophagus Arising in the Barrett's Mucosa

Deepak Sundriyal · Nikhil Shirsi · Sumedha Kotwal ·
Sushil Kumar · K. Mithran Parthasarathy · Mahesh Gupta

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Abstract Carcinoma of esophagus encompasses mainly two different histopathologic subtypes, squamous cell carcinoma and adenocarcinoma. Adenocarcinoma is the most common cancer seen. It usually arises in association with Barrett's esophagus and is localised in the distal third of the esophagus while squamous cell carcinoma predominates in the middle third. Carcinoma arising in the proximal third (cervical) of the esophagus is almost always squamous in origin. We report a case of adenocarcinoma arising in the cervical esophagus.

D. Sundriyal (✉)
Department of Medical Oncology, Dharamshila Hospital & Research
Centre, Vasundhara Enclave, New Delhi 110096, India
e-mail: drdeepaksundriyal@gmail.com

D. Sundriyal
79, Sector 12, Dwarka New Delhi 110078, India

N. Shirsi
Department of Medical Oncology, Dharamshila Hospital & Research
Centre, New Delhi, India
e-mail: snikhil15@gmail.com

S. Kotwal
Department of Pathology, Dharamshila Hospital & Research Centre,
New Delhi, India
e-mail: sumedhaahal@gmail.com

S. Kumar
Department of Surgical Oncology, Dharamshila Hospital & Research
Centre, New Delhi, India
e-mail: drsushiljain@gmail.com

K. Mithran Parthasarathy
Department of Medical Oncology, Dharamshila Hospital & Research
Centre, New Delhi, India
e-mail: mithranp@gmail.com

M. Gupta
Gastroenterology, Dharamshila Hospital & Research Centre, New
Delhi, India
e-mail: maheshguptadm@gmail.com

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Introduction

Adenocarcinoma of the cervical esophagus is a rare malignancy and less than 35 cases have been reported till date [1, 2]. Most of these cases have been described in context with a heterotopic gastric mucosa (HGM) or Barrett's esophagus. The exact pathogenesis for the development of adenocarcinoma in cervical esophagus is not well understood and it has been suggested that adenocarcinoma developing in the HGM and Barrett's mucosa may share common etiopathogenesis [3]. A case of adenocarcinoma of cervical esophagus arising in the Barrett's mucosa is presented here.

Case Report

A 61-year-old male presented to us with a 1 month history of progressively increasing dysphagia to solids. He was a heavy smoker with a history of 35 pack years. His past history included hypertension well controlled on medication. Physical examination was unremarkable. An upper gastrointestinal endoscopy was done which revealed circumferential growth in the upper esophagus starting from 18 to 21 cm from incisors on a background of Barrett's mucosa (Fig. 1). Multiple biopsies were obtained. Histopathological examination of the specimen showed presence of multiple goblet cells and high grade dysplastic epithelium suggestive of Barrett's mucosa along with moderately differentiated adenocarcinoma (Fig. 2). Tumour cells were positive for Pan CK and CK-7 on immunohistochemistry. A PETCT scan was performed for staging workup which was suggestive of metabolically active lesion in the esophagus at the level of 2nd dorsal vertebrae

Fig. 1 (Left panel) Upper GI endoscopic image of cervical esophagus showing normal mucosa (white arrow) and Barrett's mucosa (green arrow). Right panel shows circumferential growth

Fig. 2 Histopathology image. Left panel showing Barrett's mucosa (arrow shows goblet cell). Right panel shows adenocarcinoma. H&E: 40x10

along with metastatic disease in the mediastinal lymph nodes (Fig. 3). He was planned for radiochemotherapy.

Fig. 3 PET-CT image showing FDG avid growth in cervical esophagus

Discussion

Adenocarcinomas in the cervical part of esophagus arise from HGM which is rare. More rarely, adenocarcinomas arise from Barrett's esophagus. HGM is a benign pathology which has also been described as cervical inlet patch as it is located just distal to upper esophageal sphincter. The prevalence of HGM has been variable reported in patients presenting with upper gastrointestinal symptoms from 1.67 to 3.6 % [4, 5, 6]. HGM has been regarded as a congenital anomaly by many authors, while some consider it to be related to gastroesophageal reflux disease (GERD) and hence associated with Barrett's esophagus [7, 8].

The presence of Barrett's mucosa in cervical esophagus is extremely rare with only isolated cases being reported [9]. The association between Barrett's esophagus and HGM has been

suggested by many studies. Barrett's mucosa has been described in as many as 20 % of the patients having a HGM [3, 8, 10]. GERD has been shown as a common feature associated with both of these conditions [11]. Many studies have failed to demonstrate the malignant potential of HGM and thus it should not be considered as a precancerous condition [1, 8]. In contrast, Barrett's esophagus is considered as a strong risk factor and the only known precursor lesion for adenocarcinoma [12, 13]. More studies are required to define the precise relationship between HGM and Barrett's esophagus as a continuum of pathogenetic evolution if exists, any.

Learning Point

1. Adenocarcinoma of the cervical esophagus arising in the Barrett's mucosa is extremely rare.
2. Heterotopic gastric mucosa and Barrett's esophagus may lie on the same evolutionary pathway leading to the development of adenocarcinoma.

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