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Letter to Editor

Concurrent Squamous-Cell Carcinoma Esophagus and Atypical Carcinoid Tumor: A Rare Case Report and Review of Literature

Sir,

Carcinoma esophagus is very common malignancy which is usually managed with chemoradiation or chemoradiation plus surgery and squamous cell and adenocarcinoma are the two most common types. Very rarely, we can have neuroendocrine carcinoma or tumor of the esophagus. Here, we are presenting a very rare, probably first such case of concurrent squamous-cell carcinoma of the esophagus along with atypical carcinoid tumor which was incidentally detected in residual node postchemoradiation and surgery.

A 52 year-old nonsmoker, alcoholic male patient with spinocerebellar ataxia as comorbidity, presented in November 2016, with a complaint of progressive dysphagia of 2 months duration. Upper gastrointestinal endoscopy showed circumferential growth in lower-third of the esophagus with luminal narrowing. Computed tomography (CT) of thorax showed 13-mm thick circumferential mural thickening involving long segment of the lower esophagus causing marked luminal narrowing [Figure 1]. There was 3.5 cm × 2.5 cm mass in the subcarinal region, compressing esophageal lumen along with the few perigastric nodes [Figure 2]. Positron-emission tomography (PET)-CT showed intense fluoro-deoxy-glucose (FDG) avid thickening in the lower third of esophagus with FDG avid lower paratracheal, subcarinal, and perigastric nodes. Biopsy from the esophagus was done which was suggestive of moderately differentiated squamous-cell carcinoma [Figure 3]. The patient received neoadjuvant chemoradiation with 41.4Gy/23#/5 weeks by 3D-conformal radiation therapy technique along with five cycles of chemotherapy with injection paclitaxel 60 mg/m^2 and injection carboplatin area under the curve 2 weekly. There was significant response to the treatment. Subsequently, the patient underwent thoracoscopic esophagectomy with gastric pull with feeding jejunostomy in February 2017. Histopathology showed minimal residual squamous-cell carcinoma of the esophagus with subcarinal node showing features of neuroendocrine tumor [Figure 4]. Subsequently, immunohistochemistry (IHC) was done to confirm the histopathological findings. IHC in esophageal blocks showed strong positivity for CK 5/6 [Figure 5], P63 [Figure 6], and epithelial membrane antigen [Figure 7] in tumor and surface epithelium with Ki67-30% [Figure 8], suggestive of residual small focus of squamous-cell carcinoma. IHC on subcarinal node was negative for CK5/6 and P63, strongly positive for synaptophysin [Figure 9] plus chromogranin [Figure 10], and weekly positive for CK7 [Figure 11], CK20 [Figure 12], and CDX2 [Figure 13]. Ki67 index was 4% [Figure 14], overall suggestive of atypical carcinoid tumor. There was no symptom related to endocrine overactivity or carcinoid syndrome. Follow-up PET-CT was normal, and hence the patient was kept on close follow-up, but at the time of writing the paper, the patient was untraceable.

Carcinoma esophagus with neuroendocrine carcinoma is a very rare entity. There are two types of mixed tumors, namely, collision and composite. Collision tumor is composed of two independent tumors growing very closely, which subsequently collide with each other, ultimately forming a single mass. The cells of origin are different, and histopathology too shows clear demarcation between the two tumors.[1] The second type is composite tumors in which one neoplastic clone diverges into different cell lineages. The origin is from one single pluripotent stem cell.[2] Histopathology, IHC analysis, microsatellite instability testing, and electron microscopy can help distinguish between these two tumor types.[2] Although some degree of focal neuroendocrine differentiation is common in squamous-cell carcinomas, its clinical relevance is not very clear. The neuroendocrine tumors are graded from Grade 1-3. Grade 1 is <2 mitosis/10 high-power fields (HPF) or Ki67 ≤2%. Grade 2 is 2–20 mitosis/10 HPF or Ki67 3-20%. Grade 3 is >20 mitosis/HPF or Ki 67 >20%. Grade 1 and 2 are called neuroendocrine tumors (Grade 1-typical carcinoid and Grade 2-atypical carcinoid). Grade 3 is called neuroendocrine carcinoma, which is further divided into small cell and large cell types.[3] There are no definite guidelines for the treatment of these colliding/composite tumors. But, whenever there is a high-grade neuroendocrine carcinoma then usually small-cell lung cancer guideline is followed. The outcome is generally poor.

Till now, only two cases of colliding tumor of the esophagus are reported. The first case by Dias *et al*. showed squamous cell and neuroendocrine carcinoma collision.[4] The second case by Wilson *et al*. showed the collision of large-cell neuroendocrine carcinoma with papillary carcinoma arising in Barrett's esophagus.[5] Till now, only seven cases of composite tumor of the esophagus are reported, and out of seven cases, five are in the squamous cell and neuroendocrine carcinoma combination.[6-12] Our case is different because we could not find any neuroendocrine component in the primary, that is, in esophageal biopsy as well as surgical specimen. We could find atypical carcinoid in subcarinal nodes only. The possible explanation could be because of neoadjuvant chemoradiation, which resolved carcinoid part along with minimal residual squamous component only left. Another explanation could be neuroendocrine primary from pancreato-biliary or colonic origin, in view of week positivity for CK7, CK20, and

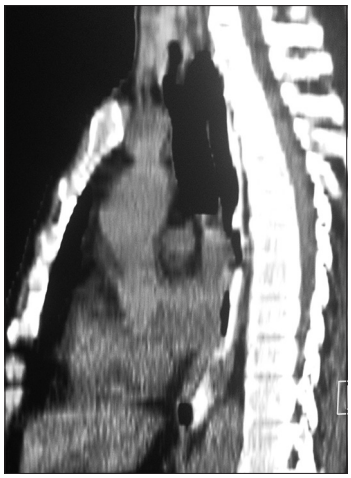

Figure 1: Computed tomography of thorax sagittal view showing lower esophageal thickening with luminal compromise

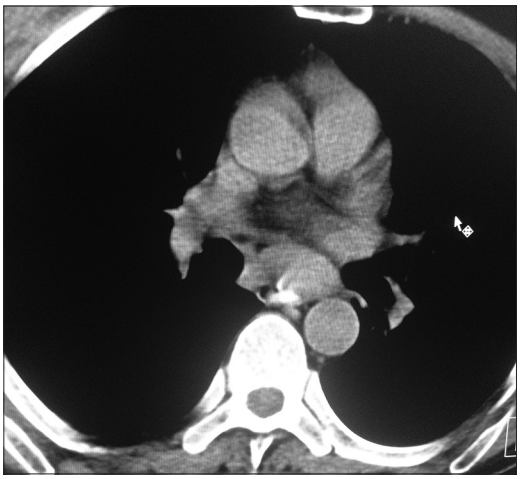

Figure 2: Computed tomography of thorax coronal view showing large subcarinal node

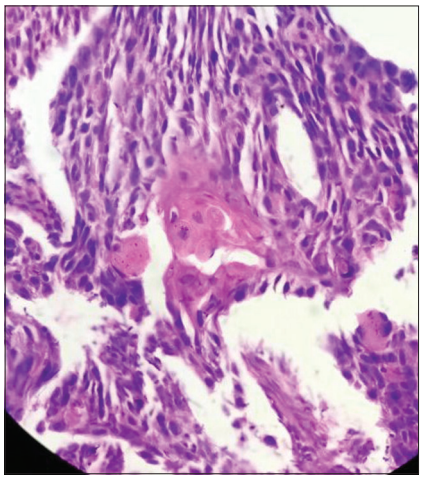

Figure 3: Esophageal biopsy showing invasive tumor with features of squamoid differentiation (H and E, ×40)

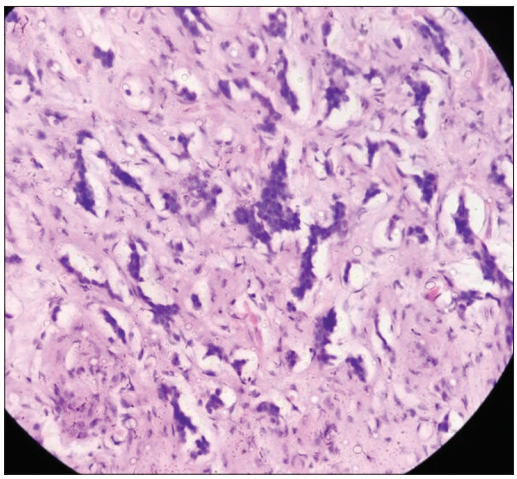

Figure 4: Lymph node showing metastatic tumor with cells arranged in sheets, nests, and trabeculae in desmoplastic stroma (H and E, ×40)

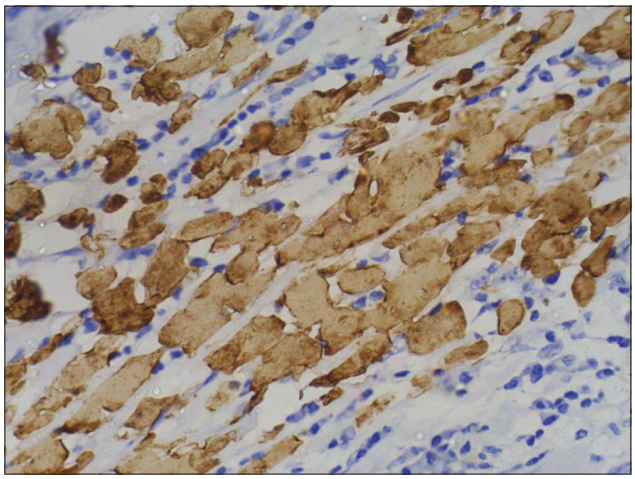

Figure 5: Immunohistochemistry on esophageal specimen showing strong positivity for CK5/6

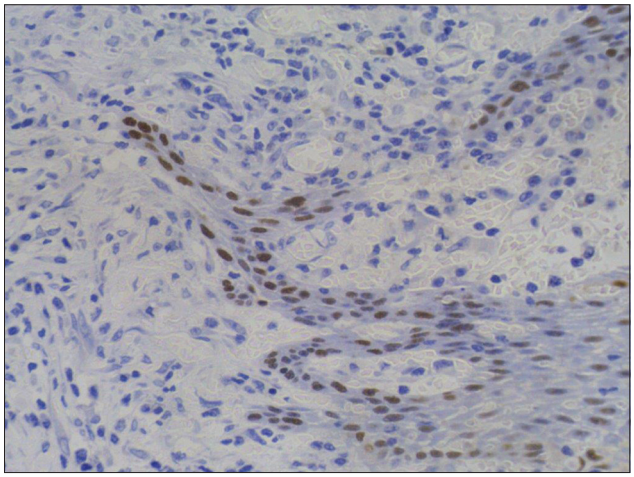

Figure 6: Immunohistochemistry on esophageal specimen showing strong positivity for P63

CDX2. However, distant metastasis from atypical carcinoid is very rare phenomenon, especially in the absence of obvious primary. Subsequent scans as well as colonoscopy could not find anything in the abdomen. Moreover, all cases

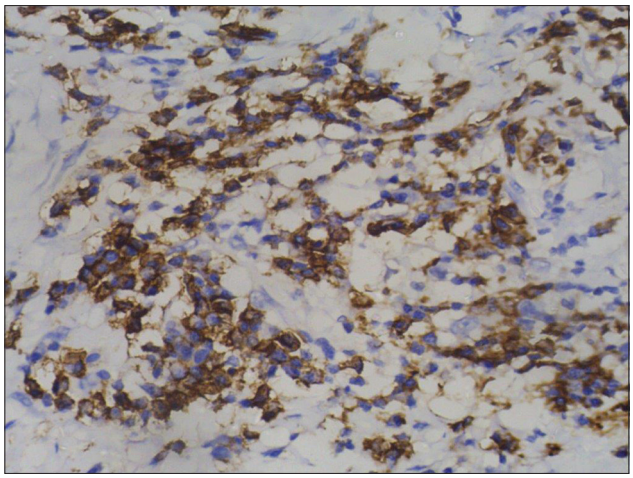

Figure 7: Immunohistochemistry on esophageal specimen showing strong positivity for epithelial membrane antigen

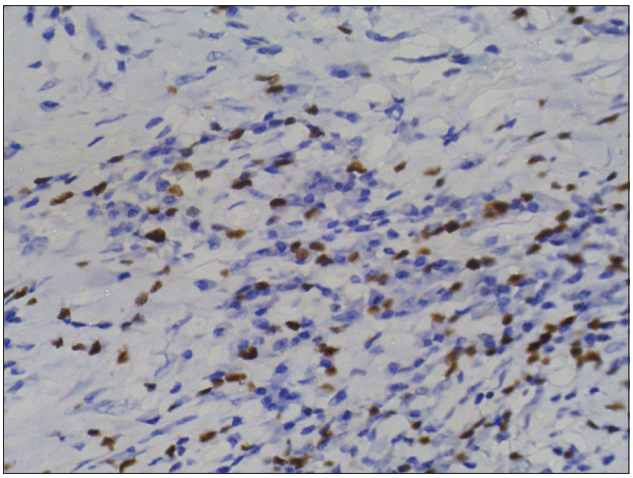

Figure 8: Immunohistochemistry on esophageal specimen showing strong positivity for Ki-67

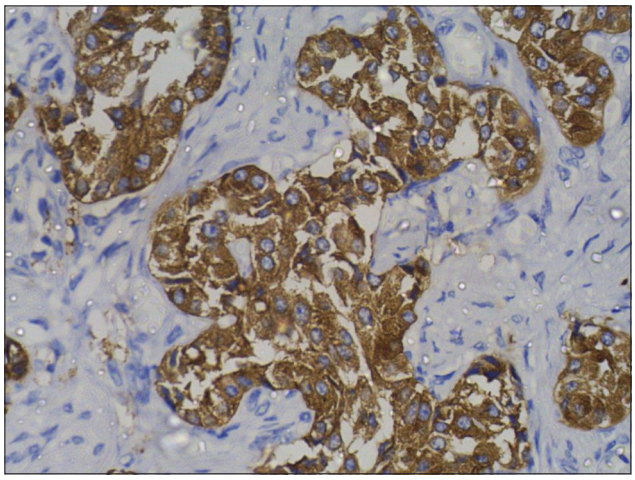

Figure 9: Immunohistochemistry on subcarinal node showing strong positivity for synaptophysin

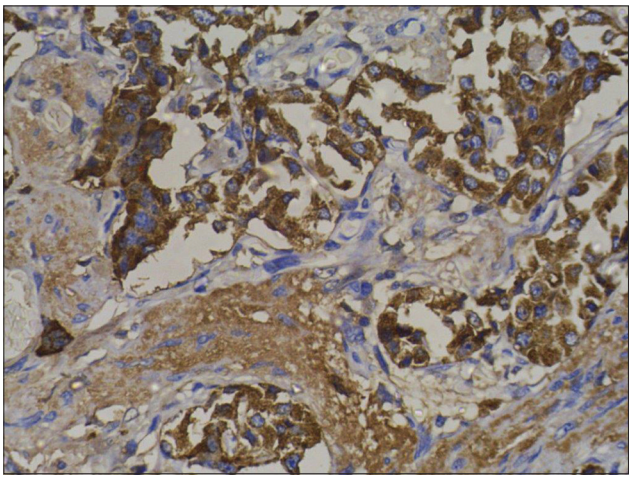

Figure 10: Immunohistochemistry on subcarinal node showing strong positivity for chromogranin

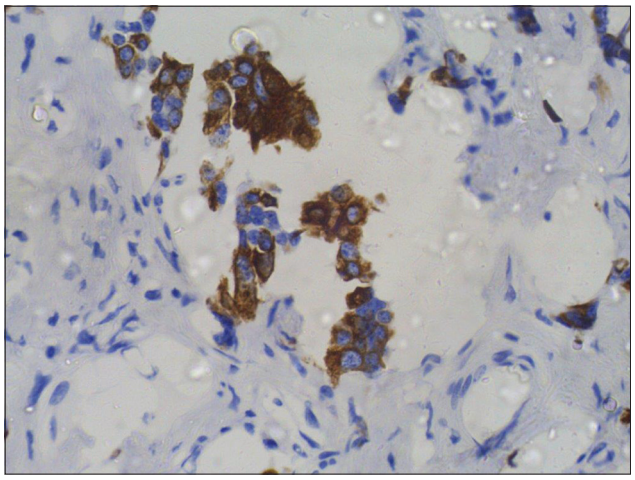

Figure 11: Immunohistochemistry on subcarinal node showing weak positivity for CK7

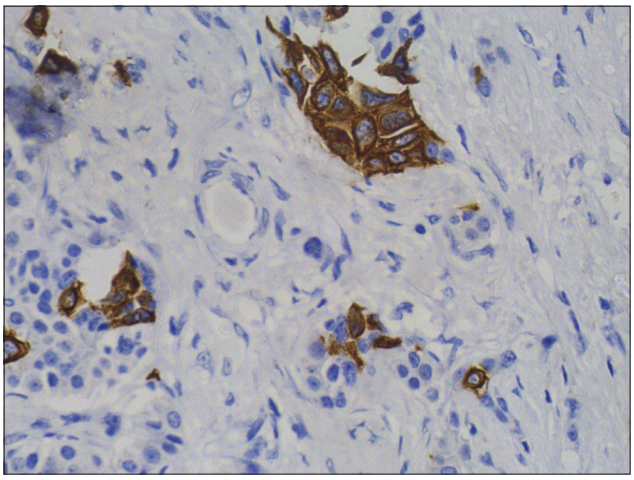

Figure 12: Immunohistochemistry on subcarinal node showing weak positivity for CK20

reported so far are of high-grade neuroendocrine carcinoma with other histological types. However, our case showed morphologically as well as by IHC, features of atypical carcinoid (Ki67-4%) along with squamous-cell carcinoma.

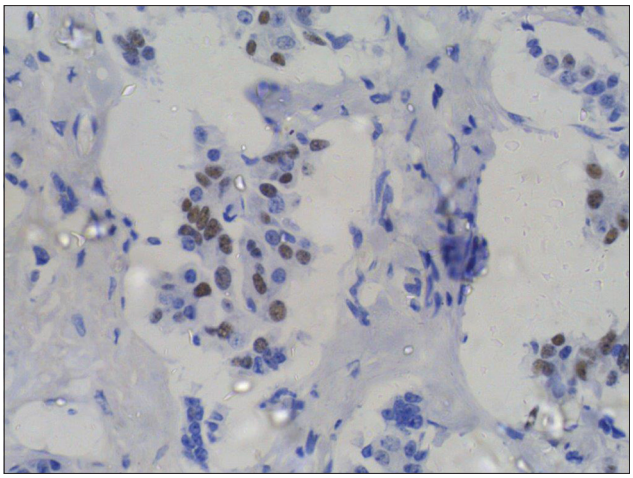

Figure 13: Immunohistochemistry on subcarinal node showing weak positivity for CDX2

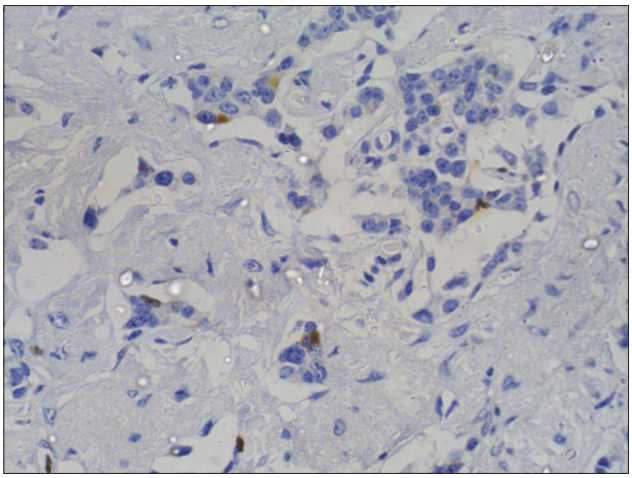

Figure 14: Immunohistochemistry on subcarinal node showing weak positivity for Ki-67

There is one-case report showing squamous-cell carcinoma converting to neuroendocrine carcinoma, on relapse after chemoradiation.[13] The combination of squamous-cell carcinoma and atypical carcinoid has been reported in the floor of the mouth by Yamagata *et al*.,[14] in the larynx by Davies-Husband *et al*.,[15] and in the lung by Okazaki *et al*.[16] Hence, to the best of our knowledge, this is the first such case of a combination of squamous-cell carcinoma esophagus with Grade 2 neuroendocrine tumor (atypical carcinoid).

Declaration of patient consent

The authors certify that they have obtained all appropriate patient consent forms. In the form the patient(s) has/have given his/her/their consent for his/her/their images and other clinical information to be reported in the journal. The patients understand that their names and initials will not be published and due efforts will be made to conceal their identity, but anonymity cannot be guaranteed.

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Nil.

Conflicts of interest

There are no conflicts of interest.

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