

# Mucinous Gastric Adenocarcinoma Presenting with Mediastinal Lymphadenopathy Diagnosed by Endoscopic Ultrasonographic Fine Needle Aspiration Biopsy in a Patient with Chronic Cough

## Endoskopik Ultrasonografik İnce İğne Aspirasyon Biyopsisi ile Mediastinal Lenf Nodundan Mide Kanseri Tanısı Konulan Bir Kronik Öksürük Vakası

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**ABSTRACT** A 57-year-old woman presented with the complaint of chronic cough. She had no history of hemoptysis, night sweats, anorexia, dysphagia, vomiting or epigastric pain. Computed tomography showed multiple mediastinal lymph nodes (LNs). The bronchoscopic examination showed no endobronchial lesions. Endoscopic ultrasonography easily visualized the mediastinal LNs, and endoscopic ultrasonography-guided fine needle aspiration of subcarinal lymph node provided tissue diagnosis of a mucinous adenocarcinoma consistent with gastrointestinal origin. Although the patient denied any stomach complaints, subsequent gastroscopy revealed a primary gastric malignancy. The current case is unique in that a pulmonary symptom was the presenting sign of an unknown primary carcinoma. In contrast to previously reported cases, the patient had no gastrointestinal or systemic symptoms. Manifestation of metastatic disease process as mediastinal LNs was also unusual. Endoscopic ultrasonography-guided fine needle aspiration enabled the diagnosis of mucinous adenocarcinoma, leading to discovery of the primary gastric malignancy.

**Key Words:** Endosonography; stomach neoplasms; lymph nodes; neoplasm metastasis

**ÖZET** Elli yedi yaşında bir kadın hasta kronik öksürük şikayetiyle Göğüs Hastalıkları polikliniğine başvurdu. Gece terlemesi, iştahsızlık, yutma güçlüğü, epigastrik ağrı ve hemoptizi yakınması yoktu. Akciğer bilgisayarlı tomografide multipl mediastinal lenfadenopati saptandı. Bronkoskopi-de endobronşiyal lezyon yoktu. Endoskopik ultrasonografik inceleme ile multipl mediastinal lenf nodları ortaya konarak, subkarinal lenf nodundan endosonografi eşliğinde ince iğne biyopsisi yapıldı. Biopsi incelemesi sonucunda gastrointestinal kaynaklı müsinöz adenokarsinoma düşünüldü. Hasta mideyle ilgili hiçbir şikayeti olmadığını ifade etmesine rağmen yapılan gastroskopide primer gastrik kanser saptandı. Olgumuz, kronik öksürük yakınması ile prezante olan ilk primer gastrik tümördür. Bu literatürde bildirilen ilk vakadır. Önceki bildirilerin aksine, eşlik eden gastrointestinal veya sistemik semptomlar yoktu. Gastrointestinal tümörlerin mediastinal lenf nodu metastazı ile prezantasyonu da oldukça nadirdir. Daha ileri invaziv tetkiklere gerek kalmaksızın, endosonografi eşliğinde ince iğne biyopsisi ile mediastinal lenf nodunda müsinöz adenokarsinom metastazı tanısı konarak primer odak belirlenmiştir.

**Anahtar Kelimeler:** Endoskopik ultrasonografi; mide kanserleri; lenf nodu; tümör metastazı

Endoscopic ultrasonography (EUS) is a fairly new tool for chest physicians as a diagnostic approach for mediastinal lymphadenopathy.<sup>1</sup> EUS combined with fine-needle aspiration (EUS-FNA) for tissue sampling can identify positive lymph nodes (LNs) in the mediastinum.<sup>2</sup> The mediastinum is a rare site for the metastasis of gastric carcinoma except for the ones at the esophagogastric junction.<sup>3-7</sup> Gastric carcinoma presents with digestive tract symptoms as well as systemic symptoms.

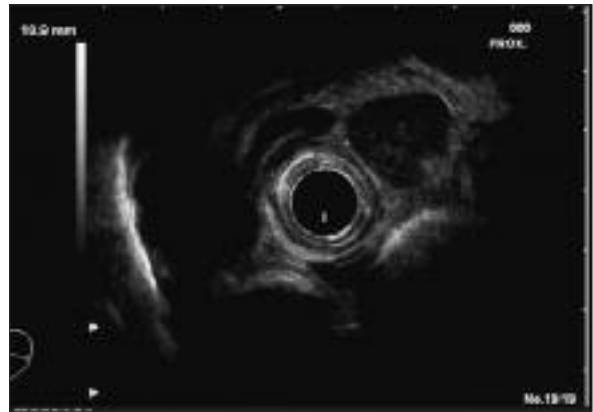
Herein, we report an unusual case of metastatic gastric carcinoma identified by EUS-FNA of mediastinal LNs in an otherwise healthy patient, whose initial presentation was only chronic cough.

## CASE REPORT

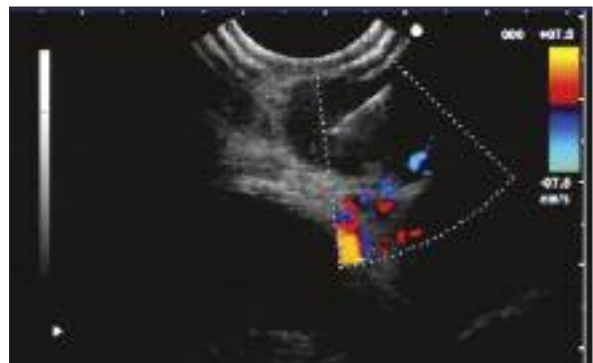
A 57-year-old woman admitted to the Chest Diseases ward of our hospital the complaint of chronic cough that had started four months before. She had no history of hemoptysis, night sweats, anorexia, dysphagia, vomiting or epigastric pain. The patient underwent investigation for dry chronic cough.

On physical examination, there was no organomegaly or palpated lymphadenopathies. Physical examination of the abdomen and thorax was unremarkable with no mass or pain during palpation. The chest X-ray demonstrated bilateral hilar enlargement in addition to mild mediastinal widening. A computed tomography scan of the thorax showed normal lung parenchyma, multiple LNs in the aorticopulmonary window, subcarinal, paratracheal, precarinal, and hilar areas. These findings were indicative of possible lung cancer, lymphoma, tuberculosis or sarcoidosis. A bronchoscopic examination showed no endobronchial lesion.

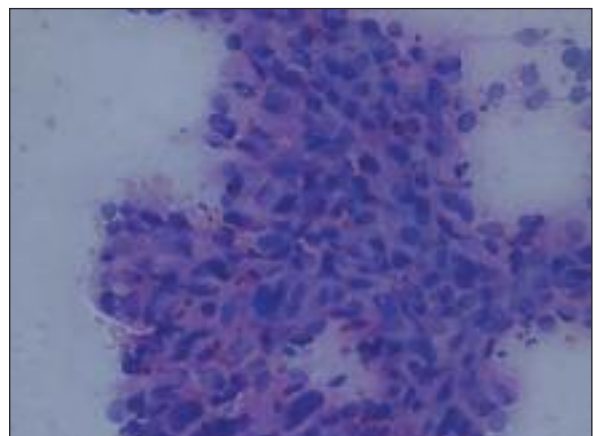
EUS examination using linear probe showed enlarged LNs, the largest one being 18.9 mm in diameter, located in subcarinal, aorticopulmonary window and hilar areas (Figure 1a). The enlarged lymph nodes were hypoechoic and round shaped with sharply demarcated border. The subcarinal mediastinal LN was sampled by FNA using a 22-gauge needle (Echotip, Cook Endoscopy, Winston-Salem, NC, USA) (Figure 1b). After the biopsy, the



**FIGURE 1a:** Radial EUS image demonstrating a 18.9 mm subcarinal lymph node.



**FIGURE 1b:** Linear EUS image of the same lymph node showing the needle lying within the node.



**FIGURE 2:** Fine-needle aspirate cytology specimen of the lymph node showing atypical columnar cells with hyperchromatic nuclei next to mucoid material (x 200, hematoxylin and eosin).

scope was advanced into the cardia to examine for any celiac adenopathies. Two celiac LNs were noted, the larger one being 12 mm in diameter. By



**FIGURE 3:** Endoscopic image of the depressed gastric area located in the midcorpus of the stomach (arrow). The lesion contains no ulceration.

using a different 22 gauge needle, EUS-FNA was performed. Cytology of the material obtained from both mediastinal and celiac LNs revealed mucinous adenocarcinoma metastasis with an origin in the gastrointestinal tract (Figure 2). The patient denied any complaints related to the stomach. However, an upper GI endoscopy revealed an irregular, depressed area located in the posterior wall of midcorpus of the stomach (Figure 3). Although the area contained no ulceration, gastric rugae appeared converged which suggested a submucosal involvement. The histopathological examination of the biopsy specimen confirmed it to be a mucinous adenocarcinoma of the stomach. EUS examination using radial probe performed for staging of the tumor demonstrated an hypoechoic thickening of the stomach wall invading mucosa, submucosa and muscularis propria, but not serosa.

## DISCUSSION

This case demonstrated the importance of EUS in detecting mediastinal metastasis of gastric carcinoma which is not suspected first because the patient was asymptomatic and dry cough was her sole presenting symptom. Since the development of a mediastinal metastasis is more often secondary to cancers other than gastric carcinoma, and the patient had no complaint or symptoms related to digestive system, she was initially diagnosed as

having lung cancer, lymphoma, tuberculosis or sarcoidosis when the mediastinal LNs were taken into consideration. EUS-FNA provided tissue diagnosis of mediastinal and celiac LN metastasis of gastric carcinoma.

The initial symptoms attributable to a gastric cancer depend on the location of the tumor. Symptoms include epigastric pain, early satiety, bloating, nausea, vomiting, and weight loss.<sup>8</sup> The diagnosis of gastric adenocarcinoma is often delayed until an advanced stage, when systemic symptoms become prominent, and the likelihood of metastases increases. Gastric cancer metastasizes principally by way of the lymphatics, along the celiac axis and to a minor degree along the splenic, suprapancreatic, porta hepatis, and gastroduodenal nodal groups.<sup>3,4</sup> Metastases to mediastinal LNs, as shown in our case with gastric cancer involving the midcorpus of the stomach, are rare, seen more commonly in tumors located in esophagogastric junction and cardia.<sup>6,7</sup>

Mucinous gastric carcinoma (MGC) is a rare subtype of gastric carcinoma that represents approximately 3-5% of all gastric epithelial cancers.<sup>8,9</sup> It is clinically useful to be able to distinguish between mucinous and nonmucinous gastric carcinomas in patients who have this cancer using EUS, as shown in our previous report.<sup>10</sup> Because, MGC may have distinctive properties, and tumors are often found to be highly invasive at the initial diagnosis. Kunisaki et al reported that MGC patients had significantly more metastatic lymph nodes as well as lymphatic and venous invasion.<sup>11</sup> However, MGC may be considered clinically more aggressive than nonmucinous gastric carcinoma because MGC tumors are frequently diagnosed in the advanced stage.<sup>12</sup>

The current case is unique in that a pulmonary symptom was the presenting sign of an unknown primary carcinoma. In contrast to previously reported cases, the patient had no gastrointestinal or systemic symptoms. Manifestation of the metastatic disease process as mediastinal LNs was also unusual. EUS-FNA enabled the diagnosis of mucinous adenocarcinoma, leading to discovery of the primary gastric malignancy.

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