



## Acute Perforated Appendicitis from Metastatic Small Cell Lung Cancer

Dimitrios Keramidaris<sup>1</sup>, Christianna Oikonomou<sup>1</sup>, Kyriaki Theodorolea<sup>1</sup>, Tahira Mohamed<sup>2</sup>, Andreas Karameris<sup>3</sup> and Stavros Gourgiotis<sup>2\*</sup>

<sup>1</sup>Department of Surgery, 417 NIMTS Veterans' Fund Hospital of Athens, Greece

<sup>2</sup>Department of Surgery, Addenbrooke's Cambridge University Hospitals, UK

<sup>3</sup>Department of Pathology, 417 NIMTS Veterans' Fund Hospital of Athens, Greece

### Abstract

Appendiceal metastasis from lung cancer is a rare entity. However, sometimes could be the cause of acute appendicitis. We here in report a case of appendiceal metastasis from small cell lung cancer caused acute perforated appendicitis. A 68-year-old male, with a history of small cell lung cancer who completed chemotherapy course few weeks ago submitted with symptoms of acute perforated appendicitis. Histology examination indicated that metastasis of lung carcinoma to appendix was present.

**Keywords:** Appendix; Small cell lung cancer; Metastasis; Laparoscopic appendectomy

### Introduction

Lung cancer is one of the most common cancers worldwide and a leading cause of death. The most common sites of lung cancer metastases are the lymph nodes, adrenal glands, liver, bone, and brain [1]. Although unusual, the small intestine and appendix have also been documented as metastatic sites [2-4]. Only a few cases of appendiceal metastases have been previously reported [1]. We here in report a case of appendiceal metastasis from small cell lung cancer presented as acute perforated appendicitis.

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### Case Presentation

A 68-year-old male presented to the emergency department with severe right iliac fossa pain for 2 days. Past medical history was notable for small cell lung cancer. He had received chemotherapy with carboplatin, paclitaxel and bevacizumab finished one month ago. His physical examination was notable for positive McBurney and Rovsing signs as well as rebound tenderness. His temperature was 39.2°C while laboratory investigations showed white blood count of 22 K/uL with 94% neutrophils and CRP 39.5 mg/dL. Abdominal ultrasound revealed free fluid in the pelvis and thickened appendix with surrounding fat stranding suggestive of acute appendicitis (Figure 1). A laparoscopic appendectomy was promptly performed. A perforated appendix and pus collection were observed during surgery. The patient had an uneventful recovery and discharged 3 days later. Pathologic examination of the excised specimen revealed extensive metastatic infiltration in all

#### \*Correspondence:

Stavros Gourgiotis, Department of Surgery, Addenbrooke's Cambridge University Hospitals, Addenbrooke's CUH NHS Trust, Hills Road, CB2 0QQ, Cambridge, UK, Tel: +44 01223217473;

E-mail: drgourgiotis@yahoo.gr

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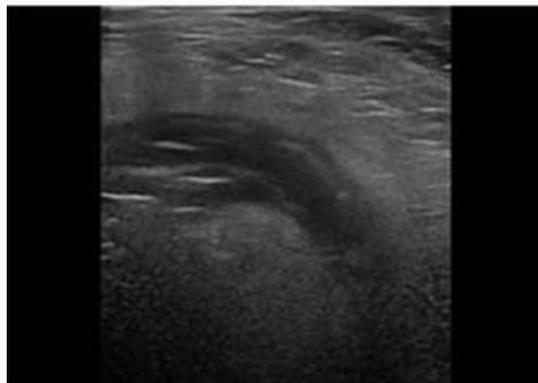
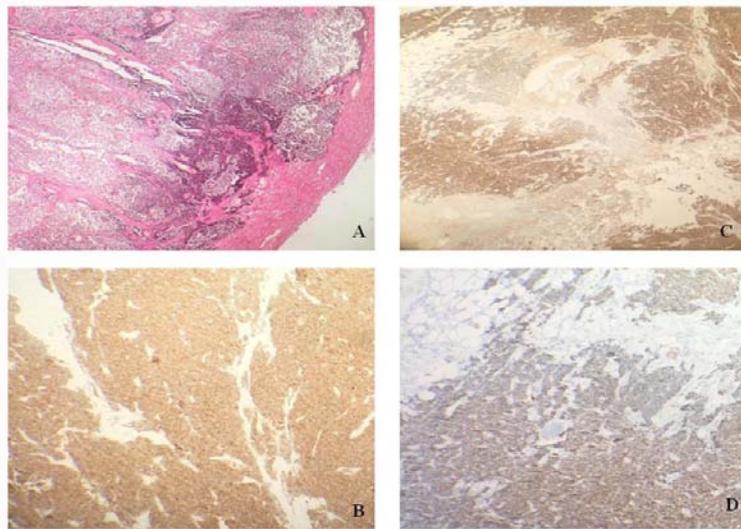


Figure 1: US findings of acute appendicitis.



**Figure 2:** Pathological findings of a hematoxylin, B synaptophysin, C chromogranin and D CD 56.

the length of the appendix by highly differentiated adenocarcinoma, leading to extensive mucosal ulceration; surgical margins were disease free. Histological analysis revealed morphological and immunohistochemical characters of neuroendocrine tumor infiltrating the surrounding appendiceal fat. The ki67 was 80%. Positive immunostaining of chromogranin, synaptophysin, CD 56, and haematoxylin indicated that it was a metastatic appendiceal tumor from small cell lung cancer (Figure 2).

## Discussion

Acute appendicitis due to metastasis from small cell lung cancer is an extremely rare entity. To the best of our knowledge, only seven cases of small cell lung carcinoma and four cases of adenocarcinoma have been reportedly caused appendiceal metastasis [3,5]. The mechanism of metastasis remains unclear, but it has been hypothesized that the appendix is infiltrated through peritoneal dissemination, or even represent a solitary peritoneal lesion [6]. Differential diagnosis of the metastasis includes primary adenocarcinoma and carcinoid tumor of the appendix. In our case, the lesion did show immunohistologic characteristics of a neuroendocrine tumor during pathologic examination. Positive immunostaining of chromogranin, synaptophysin, CD 56, and haematoxylin indicated that it was a metastatic appendiceal tumor from small cell lung cancer. Enhanced Computed Tomography (CT) has an advantage in detecting metastatic masses in the appendix [7]. Interestingly, other case reports have described screening PET CT incidentally diagnosing acute appendicitis [8]. In our case, we did not perform pre operative abdominal CT because we based on specific clinical examination and US findings which both established the diagnosis of acute appendicitis with possible perforation. Patients with metastatic tumors of the appendix are considered to present a poor prognosis. Our patient died six months later despite the followed further chemotherapy treatment.

## Conclusion

Metastases remain uncommon cause of appendiceal obstruction, inflammation or perforation. However, they should be considered as part of the differential diagnosis when a patient with known malignancy presents with symptoms consistent with appendicitis.

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