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## Colonic metastases from small cell carcinoma of the lung presenting with an acute abdomen: A case report



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## ABSTRACT

**INTRODUCTION:** Colonic metastases are rare, and usually secondary from malignant tumours of the stomach, breast, ovarian, cervix, kidney, lung, prostate, or skin. Around one third are asymptomatic or found only at autopsy.

**CASE REPORT:** A middle-aged male smoker, who had a small cell carcinoma of the lung diagnosed two years previously and treated with radiotherapy and chemotherapy, was admitted to the emergency room with intense abdominal pain and constipation. With the suspicion of an acute appendicitis he was submitted to surgery. At laparotomy he was found to have a normal appendix but two hard colonic lesions: a mobile one in the right colon and the other fixing the sigmoid colon to the sacrum. A right hemicolectomy and a sigmoid loop colostomy were performed. Pathology showed those lesions to be colonic metastases from small cell carcinoma of the lung.

**DISCUSSION:** Colonic secondaries are most frequently diagnosed in patients who have had a known primary tumour, and may present with bowel obstruction, lower gastrointestinal haemorrhage, gastrointestinal fistula, or intestinal perforation. Presentation with acute abdomen is rare, and survival is usually limited.

**CONCLUSION:** Colonic metastatic disease should be considered in any patient presenting with an acute abdomen and past history of lung malignancy.

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## 1. Introduction

Colonic metastases are rare and pose problems of management. Several malignant tumours can metastasize to the colon, including those of the stomach, breast, ovary, cervix, kidney, lung, prostate and skin [10,2]. Clinical symptoms and signs may suggest the diagnosis, but one third of such patients are asymptomatic and the diagnosis may be an incidental finding at autopsy [3]. Lung cancer with colonic metastases has a very poor prognosis. Therapeutic options include resection with intent to cure (primary and secondary tumours resection), palliative interventions (colonic resection or colostomy), or non-surgical treatment. If all metastases can be resected, the prognosis is reportedly the same as that of the primary tumour.

## 2. Clinical case presentation

Two years previously, a 49-year-old male Caucasian patient, a chronic smoker, was diagnosed with small cell carcinoma of the lung. A CT scan of the thorax revealed mediastinal lymphadenopathy, and CT scans of the abdomen, pelvis and brain were essentially normal. The patient received chemotherapy for 3 months, with a partial response in the thoracic changes on CT, followed by three months of radiotherapy, including prophylactic radiotherapy to the brain. One year later there was no residual tumour on a CT scan of the thorax or at bronchoscopy.

Follow-up by the chest department a further year later showed significant progression of the lung cancer, with lung and lymphatic metastases on a follow-up chest CT scan (the abdomen was not scanned). Further chemotherapy was given but the patient's health deteriorated; he received several blood transfusions for normochromic normocytic anaemia.

Six months later he attended the emergency department with anorexia, asthenia and generalized abdominal pain for 3 days, with obstipation for 8 days, without nausea or vomiting. He looked pale and was tender in the right lower abdomen with rebound tenderness over McBurney's point (Blumberg's sign); he had normal

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bowel sounds. Abdominal ultrasound (US) revealed an area of liquid in the right lower quadrant containing an elongated structure suggestive of acute appendicitis.

Through a McBurney incision surgical exploration revealed a mass in the right colon. A midline incision was then made, and two tumours were identified: the one in the right colon was mobile, and a second one in the sigmoid colon was fixed to the sacrum and deemed irresectable. A right hemicolectomy with an ileocolic side-to-side stapled anastomosis was performed together with a sigmoid loop colostomy. The appendix was normal macroscopically and also on histology of the resected bowel which confirmed that the right colonic tumour was a secondary from small cell carcinoma of the lung (immunohistochemistry showed immunoreactivity of tumour cells for cytokeratin CAM 5,2 dot-like, for chromogranin, for synaptophysin and CD56) with secondary cancer confirmed by intense and diffuse immunoreactivity for Thyroid Transcription Factor-1 (TTF-1) consistent with metastatic lung cancer.

The patient made a slow recovery and poor health precluded further chemotherapy. He was discharged on the 11th post-operative day, and died 12 weeks after surgery.

### 3. Discussion

Colonic metastases are rare, and usually secondary to malignant tumours of the stomach, breast, ovary, cervix, kidney, lung, prostate, or skin [10,2]. Usually there are multiple lesions but clinical manifestations may suggest only one. The few published reports suggest that colon metastases from lung cancer tend to be from giant cell carcinoma and squamous cell carcinoma [4].

Although a third of such colonic metastases are asymptomatic or found only at autopsy, more often they present clinically. Ochsner and DeBakey found gastrointestinal involvement in 4.3% of 3047 autopsies [5]. Usually colonic metastases are diagnosed later than the primary tumour; however there are cases of synchronous or prior diagnosis. Exuberant symptoms are rare [6], but there can be signs and symptoms of bowel obstruction, lower gastrointestinal haemorrhage (macroscopic or occult), intestinal perforation, gastrointestinal fistula, anaemia, and weight loss. Our patient had no chronic gastrointestinal symptoms. Acute abdomen is rare and has a high mortality [10,2,4,7]. Transfusion-dependent anaemia has been described in the literature, and normochromic/normocytic anaemia is frequent in chronic oncologic diseases [8]. With the current availability of positron emission tomography (PET scanning), colonic metastases may be diagnosed more frequently than previously, even in patients without mediastinal lymph node involvement [9]. PET scans may come to have a major role in the evaluation of lung cancer.

A pathological diagnosis is crucial. In our case confirmation that the right colonic lesion was metastatic from the lung cancer came from the intense diffuse immunoreactivity for TTF-1, which is not expressed by primary colonic cancer [10], and there was immunoreactivity of tumour cells for cytokeratin CAM 5,2 dot-like, for chromogranin, for synaptophysin and CD56.

The prognosis of lung cancer with intestinal metastases is poor, with a mean survival of 4 to 8 weeks and a maximum of 16 weeks [1], as we found in our patient (who survived 12 weeks post-operatively). If resection of the colonic metastases is possible, the prognosis is that of the primary tumour [6]. Cases complicated by bowel obstruction, haemorrhage or intestinal perforation managed by emergency laparotomy with resection of metastases have a reported mean survival of 6 months, with a maximum of 13 months [11]. Chemotherapy in patients with both primary and secondary non-resectable lesions may prolong survival (23 weeks has been reported) but chemotherapy can induce intestinal perforation in patients with known intestinal metastases [4].

Therapy must be individualized, and there are three surgical options: resection with curative intent (of both primary and secondary lesions), palliative therapy (colon resection or colostomy), or no intervention at all. In selected cases, resection with curative intent may have survival benefit [10,2,9]. Given the poor general health of our patient and the non-resectability of both the primary and secondary lesions, the management decisions appear to have been appropriate.

### 4. Conclusion

Metastatic lesions of the colon are rare, and may raise difficult problems of management. PET scanning can be useful in diagnosis. Survival reports and treatment options vary. The dilemma as to which lesion to treat first (primary or secondary) needs to be considered case-by-case [3]. Gastrointestinal metastatic disease should be considered in the differential diagnosis of patients with lung cancer presenting with an acute abdomen [11]. Aggressive surgical management provides the best chance of palliation, can decrease the duration of hospitalization, and improves quality of life [3,7,11][20,3,7,11]. Resecting both the secondary colonic and lung primary tumours may increase survival [11], as can chemotherapy though treatment must be individualised. Immunohistochemistry is crucial for diagnosis.

### Conflict of interest

No conflict of interest.

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### Consent

Written informed consent was obtained from the patient for publication of this case report. A copy of the written consent is available for review by the Editor-in-Chief of this journal on request.

### Author contribution

CECA – data collection, manuscript writing, manuscript review, LSR – data collection, CMCA – manuscript review.

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