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Case Report

A Rare Case of Isolated Jejunal Metastasis Arising from Non-small Cell Lung Cancer: A Case Report and Literature Review

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Abstract

Introduction: Carcinoma of the lung is a common and highly aggressive malignancy, with dissemination at presentation in approximately half of all cases.

Presentation of the case: Herein, we report a rare case of a single jejunal metastasis arising from a primary non-small cell lung carcinoma (NSCLC), who presented with a history of abdominal discomfort and bleeding per rectum with associated anorexia and unintentional weight loss, one year after a successful lobectomy.

Conclusion: Isolated jejunal metastasis in the absence of widespread dissemination is certainly a rare presentation and as a result, there should always be an index of suspicion regarding possible small bowel metastasis in those lung cancer patients presenting with bowel related symptoms.

Keywords: Lung; cancer; small bowel; metastasis; non small cell

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Introduction

Carcinoma of the lung is a common and highly aggressive malignancy, with dissemination at presentation in approximately half of all cases. Metastatic locations are multiple and varied; commonest sites are lung, bone, brain and adrenals. Spread to the gastrointestinal tract is rare, often associated with additional synchronous metastases and carries a poor prognosis. In this report, we describe a rare case of a single jejunal metastasis presenting one year after a successful lobectomy for non-small cell lung carcinoma (NSCLC). We have included a literature review surrounding gastrointestinal metastases from a lung primary.

Presentation of the case

A 53-year-old female patient of mixed Asian and Caucasian descent was referred by her general practitioner with a history of abdominal discomfort and bleeding per rectum; there was also associated anorexia and unintentional weight loss. Of note, she underwent a curative right lobectomy a year earlier (2012), for a poorly differentiated adenocarcinoma of the right lung (T2a N0 M0). Her past history also included alcohol dependence and laparotomy for a perforated duodenal ulcer. She had no significant family history for any malignancy.

Clinically she looked well and her general physical examination was unremarkable. She had a soft, non-tender abdomen with no organomegaly or palpable masses and digital examination of the rectum was normal. Haematological and biochemical indices were unremarkable except for a mildly elevated erythrocyte sedimentation rate (ESR). Colonoscopy was normal and computerised tomography (CT) of the abdomen and pelvis showed proximal jejunal dilatation with associated focal thickening and enhancement (Figure 1a and 1b). Upper GI endoscopy was within normal limits and subsequent push enteroscopy revealed the presence of an ulcerated luminal lesion of the jejunum (Figure 2a and 2b). A full body positron emission tomography (PET) scan demonstrated a fludeoxyglucose (FDG) avid lesion in the lower abdomen that correlated with the findings from CT and push enteroscopy (Figure 3). A single non-FDG-avid lesion was also noted in the liver but was subsequently confirmed on magnetic resonance imaging (MRI) to be a simple haemangioma; no other FDG avid lesions were seen.

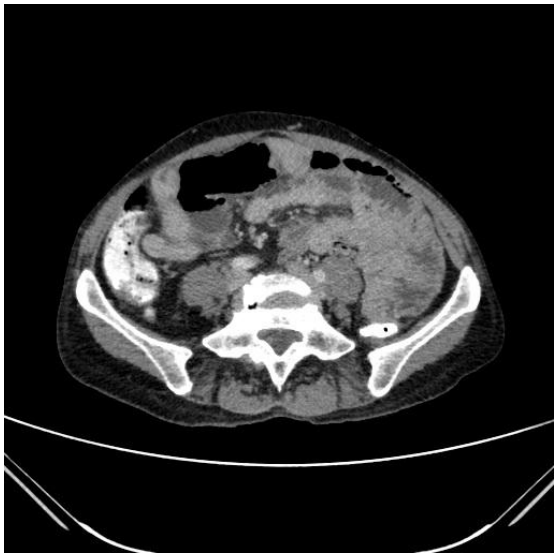

Figure 1A - CT scan of abdomen image showing dilatation of the proximal small jejunum and some focal thickening and enhancement of the bowel wall in the jejunum.

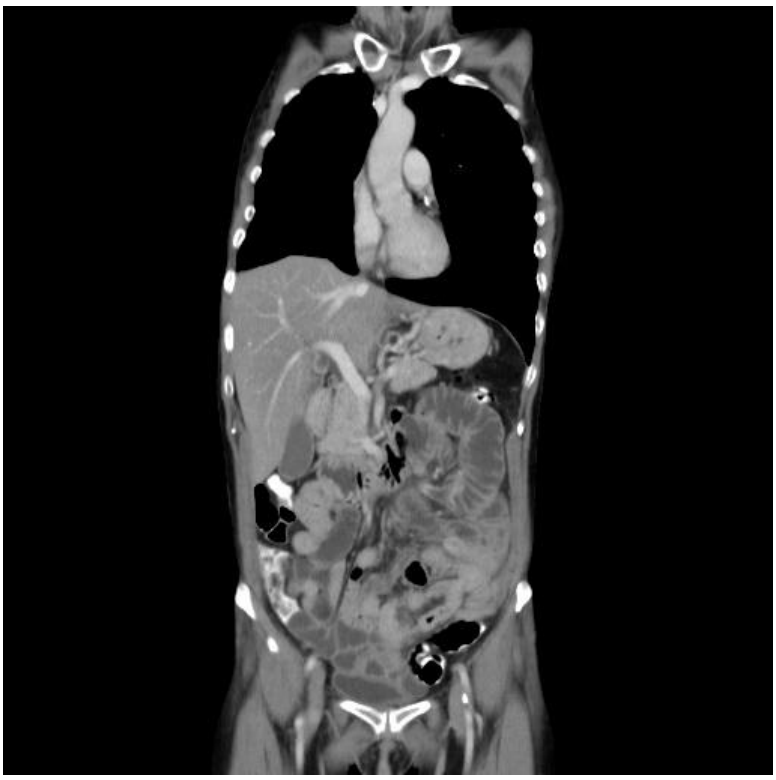

Figure 1B - CT scan of abdomen image showing coronal view of the above mentioned pathology.

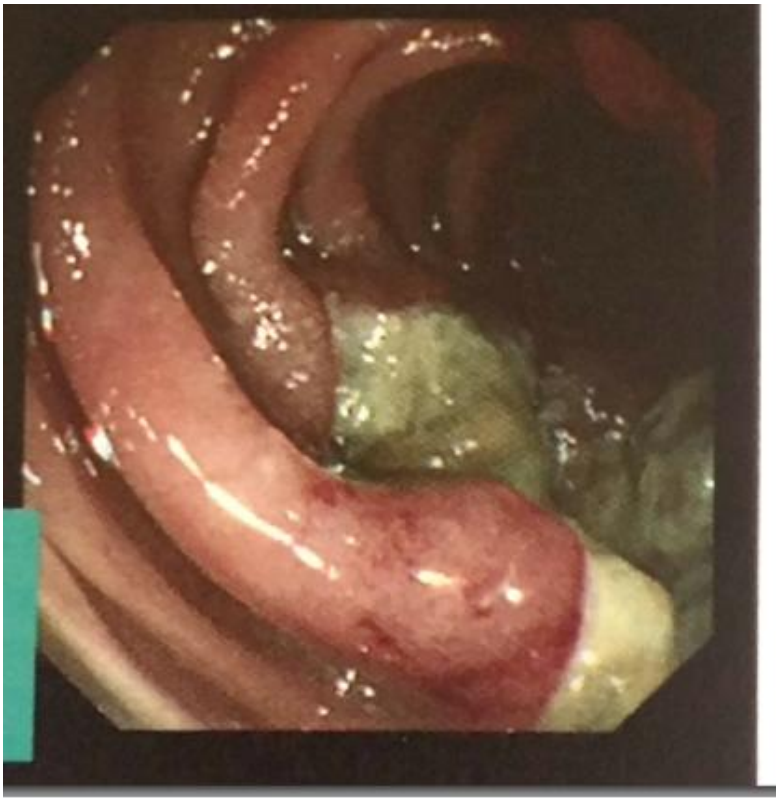

Figure 2A - Push enteroscopy pictures showing an ulcerated lesion occupying 50 % of the circumference.

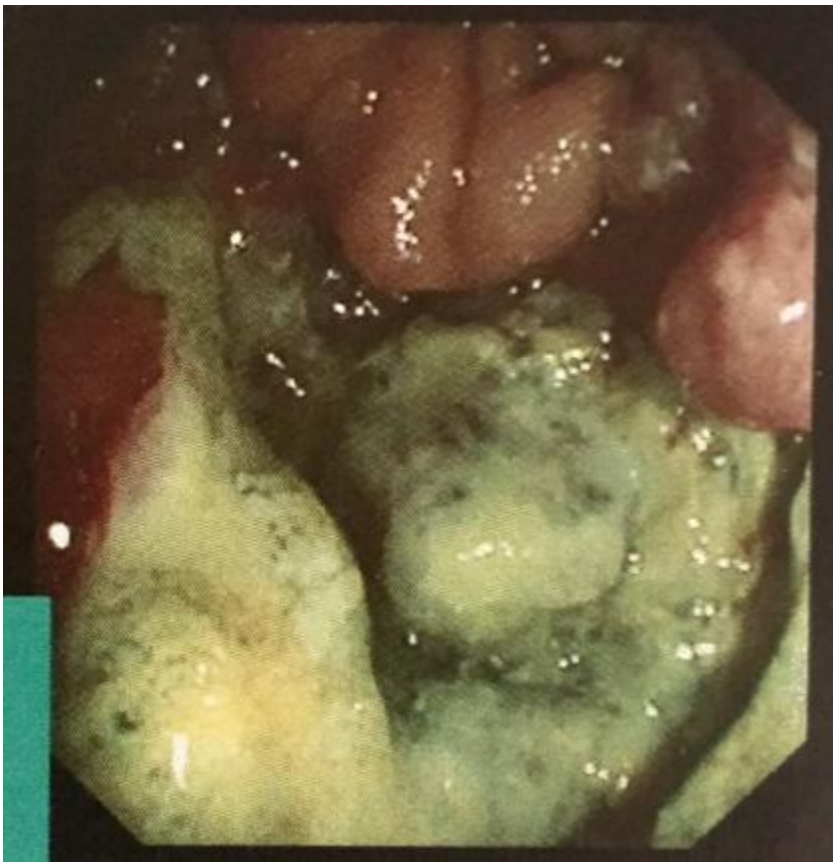

Figure 2B - Push enteroscopy pictures – Another view of the ulcerated lesion in mid-jejunum

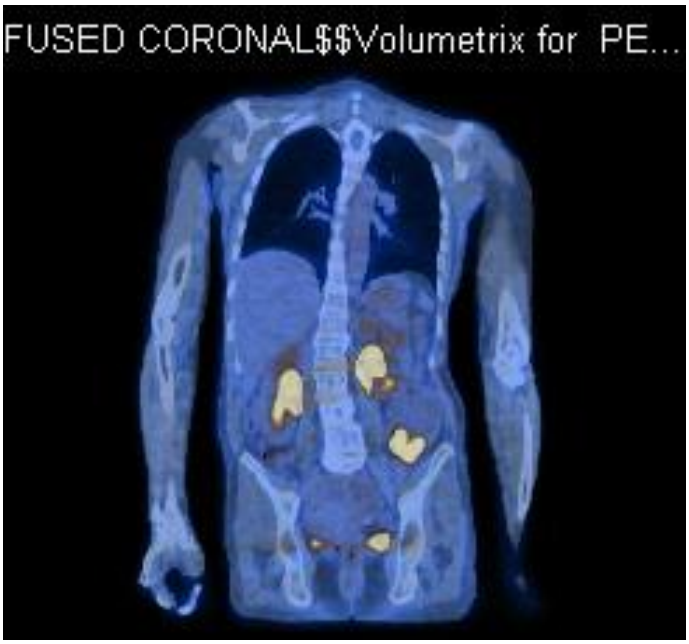

Figure 3 - FDG PET images showing an intensely FDG positive gastrointestinal tract related mass in the left flank at iliac crest level

Histology of the biopsies taken from the lesion seen at enteroscopy confirmed a poorly differentiated sarcomatoid carcinoma consisting of pleomorphic epithelial cells with moderate eosinophilic cytoplasm, no gland formation or overlying dysplasia of the intestinal mucosa in keeping with a metastatic deposit from the lung primary. Immunohistochemical staining was positive for pancytokeratin, vimentin and CD10 expression, but not for CK7, CK20, TTF-1, BerEp4, Cytokeratin S16, CA125, CEA, progesterone or oestrogen receptors. There was no expression of LCA, S100, Calrelining, D2405, CDX2, WT1m, SMA, Desmin, H Caldesmon, RCC or racemlace. When compared to the histology of the previous lung lesion, it was reported to be of similar morphology and immunohistochemical profile of the poorly differentiated component of the NSCLC.

Her case was fully discussed at the GI multidisciplinary team meeting, and the consensus was to proceed with laparotomy. At laparotomy, there was no evidence of ascites or peritoneal deposits and the segment of jejunum containing the metastatic deposit was identified and removed; intestinal continuity was restored by means of a side-to-side jejuno-jejunal anastomosis. The rest of the small bowel, large bowel and other viscera were within normal limits. Patient had an uneventful post-operative recovery and was discharged home a week later. At six-month follow up review, she is well and asymptomatic.

Histopathology of the resected jejunal lesion showed a confluent mass with extensive necrosis infiltrating mucosa and muscularis propria but not infiltrating serosa (Figure 4a and 4b). Immunohistochemistry showed expression of Pan-cytokeratin and cytokeratin 7 (see Figure 4c) but the tumour was negative for Cytokeratin 20, TTF1, CDX2, melanocytic markers (HMB45, S100), lymphoid markers (Leucocyte Common Antigen and L26) and high molecular weight cytokeratin. The morphology and immunohistochemistry of the resected specimen were compared to the patient`s lung carcinoma and found to show similarity to the poorly differentiated adenocarcinoma component.

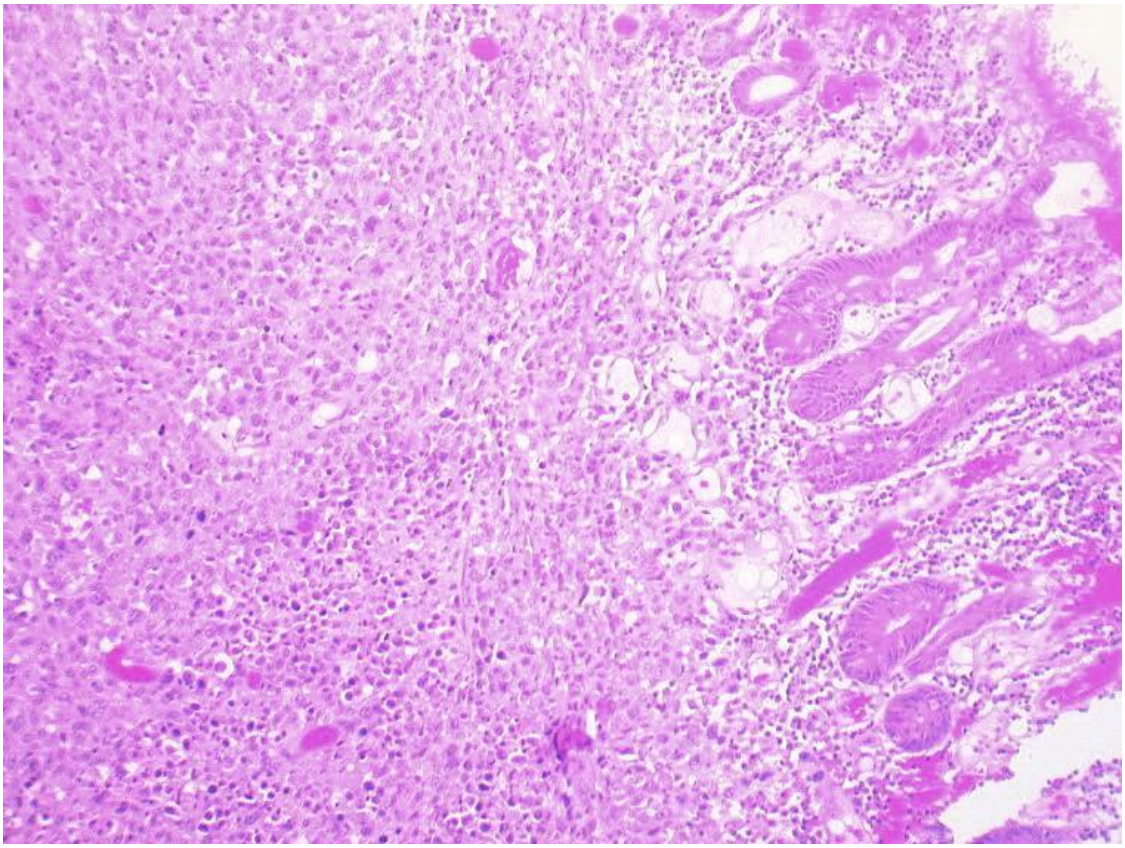

Figure 4A - Tumour and mucosa: medium power

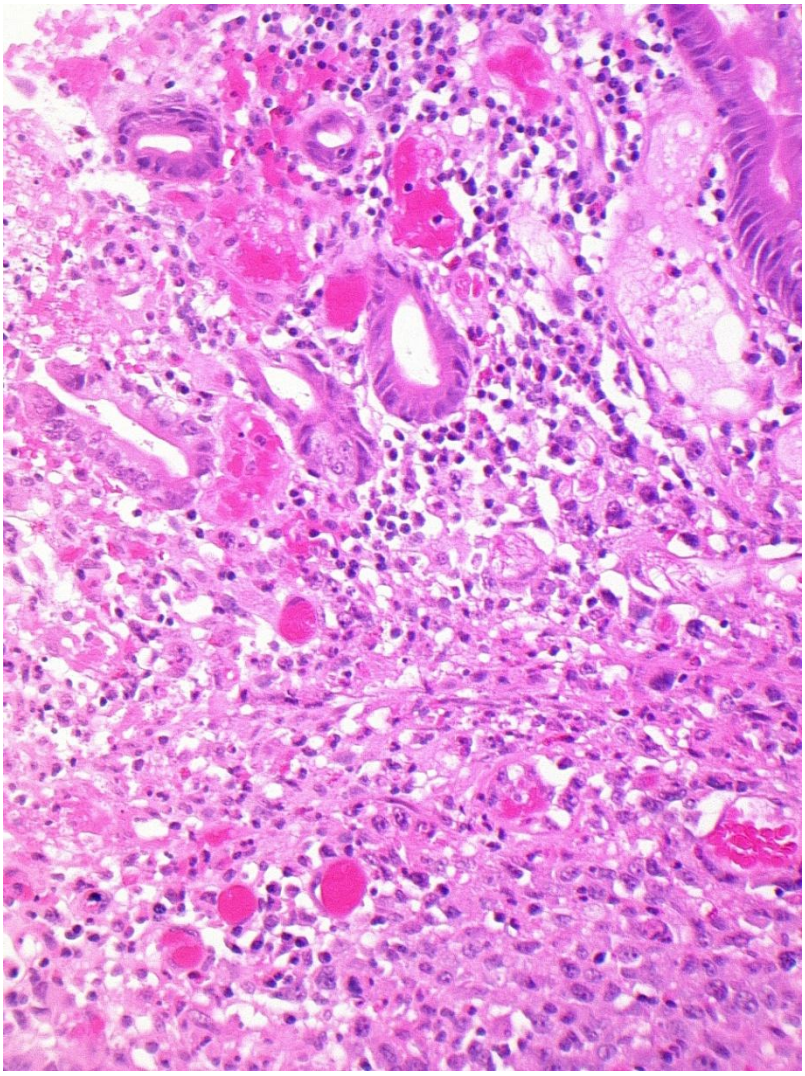

Figure 4B - High power view- malignant cells (bottom of image) infiltrating gland crypt bases (mid/ upper image)

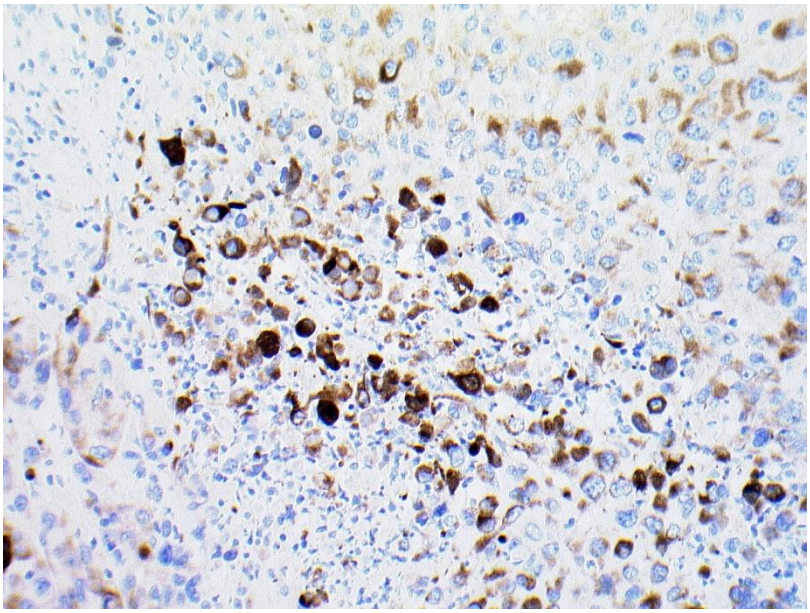

Figure 4C - Immunohistochemistry: cytokeratin stain (MNF116): a proportion of the malignant cells express cytokeratins

Discussion

Up to 90% of all lung cancers are NSCLC and there are 3 main subtypes of which adenocarcinomas account for about 40%. Non-small cell lung cancer has a predilection to metastasise to the lungs, mediastinal group of lymph nodes, liver, pleura, adrenals, brain, and bones. In the autopsy study of patients with non-resectable adenocarcinomas of the lung, Stenbygaard and co-workers identified metastatic sites in up to 40% of cases [1]; the frequency of small bowel involvement was found to be only 4.6% (95%, confidence interval, 2.2-8.3%). NSCLC patients with small bowel involvement also have other concurrent metastatic sites with the following sites being frequently involved: adrenals, mediastinal lymph nodes, liver, pleura, contralateral lung, bones and brain [2]. From our literature review, there are only a few reports of bowel metastasis from primary lung cancer [3-6]; the majority were NSCLC and all the cases also had metastases elsewhere at the time of diagnosis.

This case of isolated jejunal metastasis in the absence of widespread dissemination is certainly a rare presentation and as a result, there should always be an index of suspicion regarding possible small bowel metastasis in those lung cancer patients presenting with bowel related symptoms.

Conflict of interest

The authors certify that is no potential or actual conflict of interest related to this research.

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