



(CASE REPORT)



Small bowel obstruction due to lung Sarcomatoid carcinoma: A case study

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Abstract

Small bowel metastases due to lung cancer are extremely rare and predominantly cause intestinal obstruction, perforation and gastrointestinal bleeding. We report the case of a 51-year-old man diagnosed with pulmonary sarcomatoid carcinoma to which an ileal mass was subsequently removed which was found to be compatible with intestinal localization of pulmonary carcinoma.

Keywords: Lung; Metastases; Sarcomatoid carcinoma; Obstruction; Small bowel

1. Introduction

Generally, lung cancer metastases are found in liver, bone, brain, kidney, and adrenal glands; gastrointestinal metastases are very rare; in particular, these metastatic lesions are found more frequently in the advanced stages of the disease and, consequently, are associated with a poor prognosis of the disease.

If the metastases affect the upper gastrointestinal tract, bleeding occurs, while if they affect the small intestine, intestinal obstruction occurs [1].

Here we describe the case of a 51-year-old man with intestinal obstruction due to lung cancer metastases.

2. Case report

A 51-year-old man was found to have poorly differentiated lung carcinoma that should have been treated with courses of chemotherapy but, in less than a month from diagnosis, the patient was operated for an intestinal block. During surgical intervention, a mass was identified at the level of the ileum. The tumor was removed and sent to the surgical pathology laboratory to carry out further investigations and establish the nature of the lesion.

The surgical sample was represented by a segment of small intestine 10 cm long with a whitish, hard and trans-parietal mass of 8 cm in largest dimension.

Hematoxylin and eosin slides taken from formalin fixed and paraffin embedded samples were stained with in order to observe the morphology of the cells that were found to be compatible with metastatic neoplasia (figure 1).

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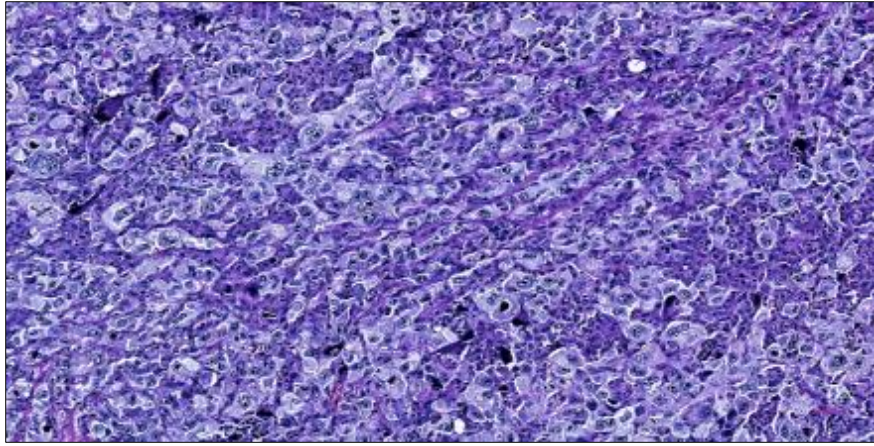
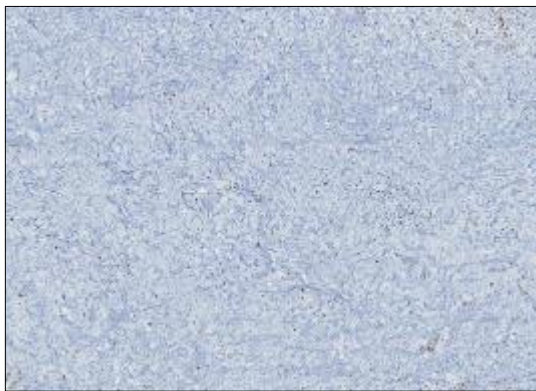


Figure 1 Hematoxylin and eosin images of the intestinal cancer



A



B



C



D



E



F



Figure 2 These sections were stained with immunohistochemical techniques A) CEA negative. B) CK20 negative. C) CDX2 negative. D) Synaptophysin negative. E) Vimentin positive. F) TTF1 positive. G) CKPAN positive. H) CK7 positive

Immunohistochemistry was also performed using different tumor markers in order to understand whether the immunophenotype could be compatible with the previous diagnosis of lung cancer, or whether it was a primary intestinal tumor. Immunohistochemical profile of the tumor cells was detected through Roche monoclonal antibodies CK20, CDX2, Synaptophysin, Vimentin, TTF1 and CK7 (figure 2). Tumor expressed positivity for CK7, Vimentin and TTF1, while it was negative for CK20, CDX2 and neuroendocrine markers, confirming its metastatic nature from lung primitivity and sarcomatoid histotype.

3. Discussion

Sarcomatoid lung cancer (PSC) is a rare, poorly differentiated and small metastatic subgroup of non-small cell lung cancer characterized by the coexistence of elements of epithelial and sarcomatoid undifferentiated carcinoma, with an incidence rate of approximately 0.4% of all lung cancer [1].

Studies in Italy [2] and Taiwan [3] have suggested that 0.5-1.7% of patients with primary lung cancer develop metastases of the gastrointestinal tract. The cell type in Taiwan was squamous cell carcinoma (3/6) in most cases, while large cell carcinoma (10/18) was the dominant type in Italy. Therefore, the histological type predominantly associated with gastrointestinal metastases remains unclear.

Metastases to the gastrointestinal tract resulting from lung cancer are rare, with an incidence of between 0.3% and 1.7% [4] and their spread up to this localization can occur via the hematogenous or lymphatic route. In the gastrointestinal tract, this tumor can cause perforation, intestinal obstruction, and rarely bleeding [5]. When lung cancer presented with symptomatic intestinal metastases, Di and colleagues reported that the rates of gastrointestinal perforation, obstruction and bleeding were 46%, 35%, and 14%, respectively [6].

The pathological investigation is carried out using immunohistochemical staining which makes it possible to distinguish a primary tumor of the small intestine from a secondary origin from lung cancer [7]. A typical intestinal tumor would have a CK7 and TTF-1 negative immunophenotype, CK20 and CDX2 positive immunophenotype [8]; Furthermore, TTF-1 is highly specific for lung and thyroid carcinomas for which its use is essential for identifying the origin of the neoplasm [2].

Metastases originating from lung cancer develop mainly in the ileocecal area and are usually isolated, as opposed to small bowel metastases originating from intestinal tumors [9].

Initially, patients with metastases in the small intestine do not have symptoms such as abdominal pain and diarrhea, while in the more advanced stages of the disease they may have small bowel obstruction and perforation [8]. For this reason, early diagnosis is difficult and often a diagnosis is made only when the disease is already in an advanced stage.

To date, surgical resection of the portion of the small intestine that presents the metastatic lesion is the best strategy, especially when obstruction occurs and when the tumor is localized [10,11]; after this resection, patients have a survival of more than one year.

4. Conclusion

Intestinal primitive tumors are the most representative ones in international oncological reports. Nevertheless, neoplastic localization at gastrointestinal region in patients with a previous history of lung cancer could be predictive of metastatic nature of the tumor, above all in cases where tumor antigenic profile correspond to that of primitive neoplasia.

Compliance with ethical standards

Disclosure of conflict of interest

All authors have contributed in the manuscript, and they declare no conflict of interests.

Statement of informed consent

Informed consent was obtained from the subject included in the study.

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