



Colon Cancer with Mediastinal Metastasis

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Authors' contributions

This work was carried out in collaboration among all authors. Author IT confirm sole responsibility for the study conception and design, data collection, analysis and interpretation of results, and manuscript preparation. All authors read and approved the final manuscript.

Article Information

DOI: 10.9734/JAMMR/2024/v36i35388

Open Peer Review History:

This journal follows the Advanced Open Peer Review policy. Identity of the Reviewers, Editor(s) and additional Reviewers, peer review comments, different versions of the manuscript, comments of the editors, etc are available here: <https://www.sdiarticle5.com/review-history/112607>

Case Study

Received: 18/12/2023

Accepted: 23/02/2024

Published: 04/03/2024

ABSTRACT

Background: The patient had a CAF (complete atrial fibrillation) as a comorbidity.

Objective: The most common sites of colon cancer metastasis are the regional lymph nodes, liver, lung, bone and brain.

The patient was 65 years old and had CAF as a comorbidity. She was consulted for a recent dyspnea evolving in a context of altered general state without any digestive sign. A thoracic scan showed a medial mass measuring 53*56*60mm. The lung biopsy revealed a muscular adenocarcinoma of colorectal origin with immunohistochemical expression of cytokeratin 7 (CK7), 20 and cytokeratin (CK) AE1/AE3, CDX2. The Pet Scan confirmed the existence of a hypermetabolic left anterosuperior medial mass in addition to a focal digestive hypermetabolism of the right colonic wall.

A colonoscopy was performed and showed a tumor process in the right colon with a histological and immunohistochemical profile compatible with that of the mediastinal metastasis. The tumor was MSS (microsatellite stable), RAS (rat sarcoma) and BRAF(v-raf murine sarcoma viral oncogene

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homolog B1) wild type. The patient received a 3-month folfox-panitumumab combination with good tolerance and a partial response of about 50% on the metastasis.

Conclusions: This case report provides a highly unusual instance of colon adenocarcinoma with extensive mediastinal lymph nodes metastasis.

Keywords: Colon cancer; chemotherapy; mediastinal metastasis; colon adenocarcinoma; mediastinal mass; thoracic scan.

ABREVIATIONS

CAF : Complete atrial fibrillation

MSS : Microsatellite stable

RAS : Rat sarcoma

BRAF : v-raf murine sarcoma viral oncogene homolog B1

CEA : carcinoembryonic antigen

1. INTRODUCTION

“Colorectal cancer is a common cancer 2nd leading cause of cancer death after lung cancer in the world with 935,000 deaths in 2020” [1].

“The most likely sites of metastasis are regional lymph nodes, liver, lung, bone and brain” [2]. “Colorectal carcinoma is the second biggest cancer responsible for mortality. Lung metastasis is the commonest, following the liver. It is not uncommon to perform pulmonary metastasectomy and identify mediastinal metastasis” [3].

In this study, an extremely rare case of colon adenocarcinoma with extensive metastasis to the mediastinal lymph nodes without any other organ involvement is presented.

2. CASE PRESENTATION

“Colorectal cancer (CRC) is the second most common type of cancer in women and the third most common in men worldwide” [4]

“It is also the second leading cause of cancer-related death in the United States” [5]. “About one-third of patients who develop CRC succumb to the disease” [5]. “CRC is diagnosed in the majority of patients after the onset of symptoms such as rectal bleeding, change in bowel habits, bowel obstruction, and weight loss, or after the identification of occult bleeding” [6,7]. “However, implementation of CRC screening guidelines has improved detection of premalignant polyps and asymptomatic CRC at an early stage, and thus improved disease outcomes” [6,7]. “The most common sites of metastasis are regional lymph nodes, liver, lung, bone, and brain” [8]. This

study presents an extremely rare case of colonic adenocarcinoma with extensive metastasis to multiple mediastinal lymph nodes without any other organ involvement.

The patient was 65 years old and had ACFA as a comorbidity. She was consulted for a recent dyspnea evolving in a context of altered general state without any digestive sign. A thoracic scan showed a medial mass measuring 53*56*60mm. Figs. 1,2,3.

The lung biopsy revealed a muscular adenocarcinoma of colorectal origin with immunohistochemical expression of cytokeratin 7 (CK7), 20 and cytokeratin (CK) AE1/AE3, CDX2 Figs. 5,6,7.



Fig. 1. Mediastinal mass (53*56*60mm)

The patient did not have undergone colonoscopy previously. The Pet Scan confirmed the existence of a hypermetabolic left anterosuperior medial mass in addition to a focal digestive hypermetabolism of the right colonic wall. Figs. 3,4.

A colonoscopy was performed and showed a tumor process in the right colon with a histological and immunohistochemical profile compatible with that of the mediastinal metastasis. The tumor was MSS, RAS and BRAF wild type. The patient received a 3-month folfox-panitumumab combination with good tolerance and a partial response of about 50% on the metastasis.

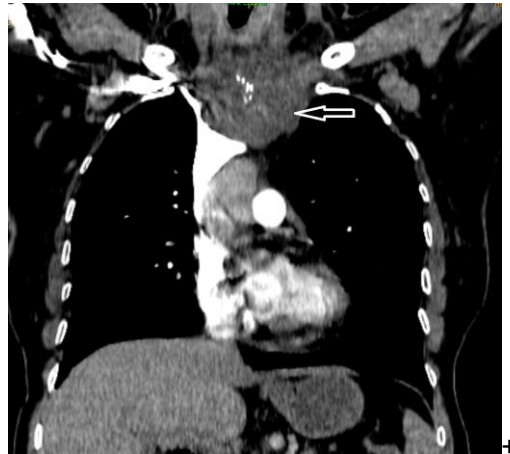


Fig. 2. Mediastinal mass (53*56*60mm)

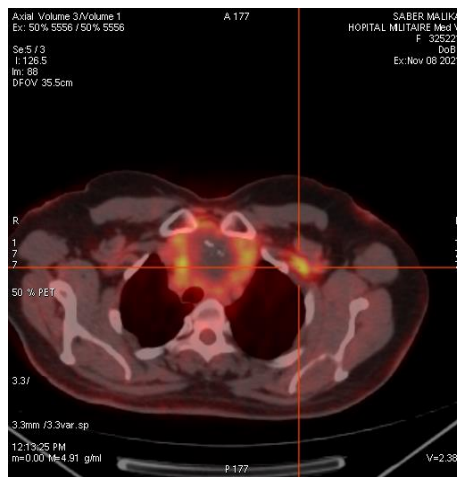


Fig. 3. A left anterosuperior mediastinal mass of heterogeneous fixation marked at its periphery measuring 66*64mm of transverse axis and extending over a height of 67 mm without apparent invasion of the regional mediastinal structures

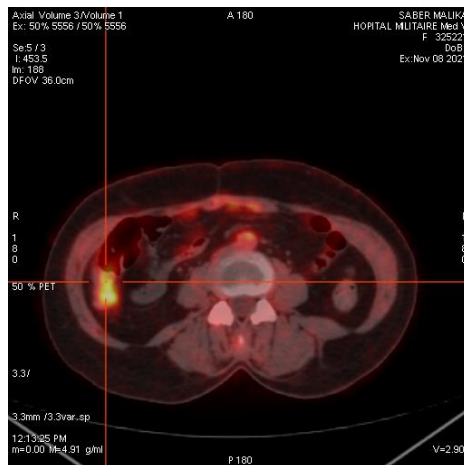


Fig. 4 Focal digestive hypermetabolic of the right colonic wall

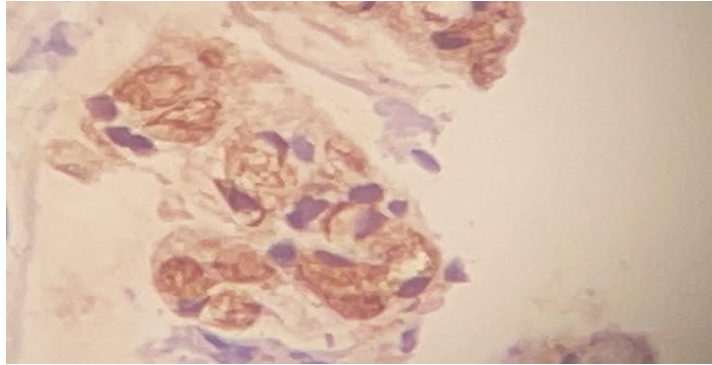


Fig. 5. Mucosecreting independent cell proliferation in (Chestnut ring) CK 20 +(cytokeratine)

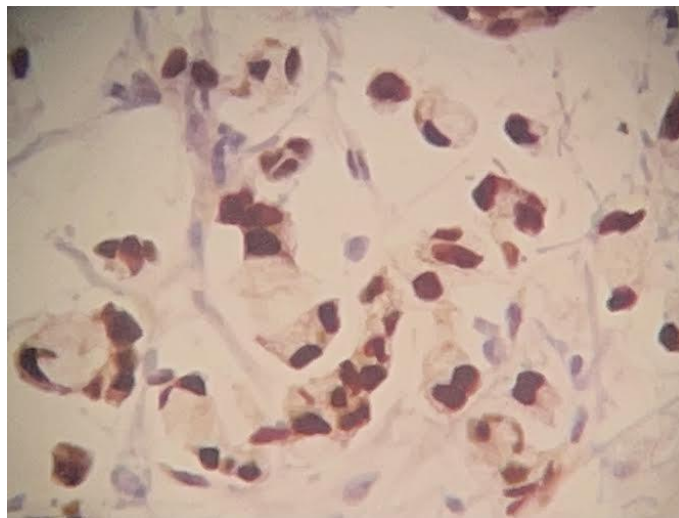


Fig. 6. Mucosecreting independent cell proliferation in (Chestnut ring) CDX2+

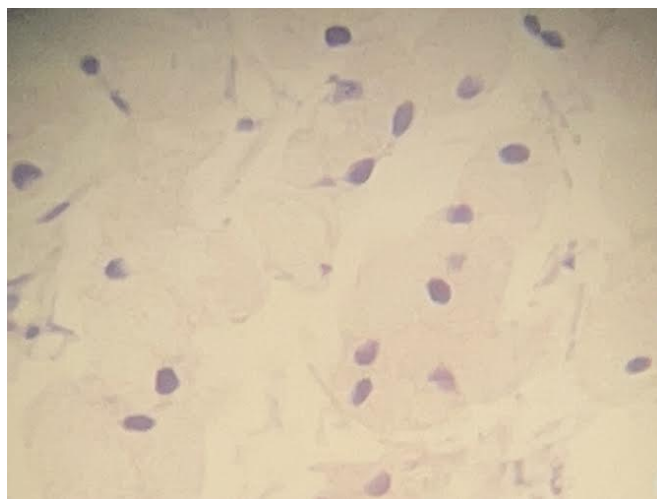


Fig. 7. Mucosecreting independent cell proliferation in (Chestnut ring) CK7 (cytokeratine)– RE –TTF1 –(thyroid transcription factor 1)

Table 1. Comparative overview of 12 cases of mediastinal metastasis

Case number	Reference	Year published	Age	Sex	Primary location	Primary stage	Adjuvant chemotherapy	Time after Primary resection(months)	Metastasis location
1	Vetto et al. [3]	1991	60	M	Hepatic flexure	IIIb	Not listed	12	Right lobe liver, mediastinum
2	Kuba et al. [4]	1999	60	F	Sigmoid	IIIb	Not listed	33	Left ovary, mediastinum
3	Musullam et al. [5]	2008	67	M	Rectosigmoid	IIIb	Yes	26	Mediastinum
4	Yavaş et al. [6]	2009	57	M	Ascending	IIIa	5-Fluorouracil	Not listed	Mediastinum
5	Sano et al. [7]	2011	29	M	Ascending	IVa	5-Fluorouracil	24	Liver, mediastinum
6	Iwata et al. [8]	2012	75	M	Ascending and transverse Sigmoid	IIIa	Capecitabine	42	Liver, mediastinum
7	Matsuda et al. [9]	2014	65	M	Rectum	IIIc	Tegafur-uracil	101	Mediastinum
8	Matsuda et al. [9]	2014	50	M	Rectum	IIIc	No	96	Mediastinum
9	Halabi et al. [10]	2014	44	M	Ascending	IIIa	Folinic acid, fluorouracil, oxaliplatin, bevacizumab	22	Mediastinum
10	Shirakawa et al. [11]	2015	65	M	Rectum	IIIa	Tegafur-uracil, 5-fluorouracil, leucovorin and oxaliplatin	55	Liver, mediastinum
11	Rodríguez-López et al. [12]	2016	45	M	Rectum	IVa	Folinic acid fluorouracil and oxaliplatin, bevacizumab	–	Mediastinum
12	Toda et al. [10]	2017	59	M	Ascending	IIIb	Yes	32	Mediastinum

Biological exams were normal

LDH 179ui/l

hemoglobin 12g/dl

Thyroglobulin:48.12 ng/ml

Ca 15-3:15.8 iu/l

Ca 125 6.3 ui/l

Ca 19-9 <2.060ui/ml CEA:12.65 ng/ml

3. DISCUSSION

Our case presented a mediastinal process that the biopsy revealed a mucinous adenocarcinoma of digestive origin. Mediastinal metastasis of colorectal origin without hepatic metastasis is extremely rare. "Only 12 cases of mediastinal metastasis from colorectal cancer have been reported in the English literature table 1" [9,10]

Re-metastasis of colon cancer to mediastinal lymph nodes from a lung metastasis is rare; however, it has been reported in a small number of studies" [11] "Re-metastasis from the liver to lymph nodes draining the liver is even rarer, but has also been reported in the literature" [12].

However, in the present case, due to the large mediastinal mass, these were not surgically resected and chemotherapy+ targeted therapy was administered instead with net clinical benefit.

4. CONCLUSIONS

This case report provide a highly unusual instance of colon adenocarcinoma with extensive mediastinal lymph nodes metastasis.treatment involving a three months folfox panitumumab combination yielded a favorable partial response of approximately 50% on the metastasis, demonstrating a promising therapeutic outcome in this atypical presentation.

ETHICS APPROVAL AND CONSENT TO PARTICIPATE

UNIVERSITY Mohammed V souissi RABAT Morocco faculty of medecine approved the study

CONSENT FOR PUBLICATION

The patient consent the publication of the personal data

AVAILABILITY OF DATA AND MATERIAL

Medical oncology departement of the Military Hospital RABAT Morocco

COMPETING INTERESTS

Authors have declared that no competing interests exist.

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