

## Atypical multiple gastric adenocarcinoma metastases: a case report

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### Abstract

We present the clinical observation of a 48-year-old male, with no family history of malignancies, diagnosed in our department with a poorly differentiated gastric adenocarcinoma in an upper location -in the cardial and corporeal region- with multiple atypical metastasis (liver, spleen, pancreas, suprarenal, abdominal lymph nodes, retroperitoneal fat tissue, lungs, pleura, mediastinum, soft tissue, brain, eyes).

The particularity of the presented case consists of the relative early age of occurrence and the fulminant evolution of the disease, as well as the atypical character of the metastases.

**Keywords:** poorly differentiated gastric adenocarcinoma, atypical metastasis, soft tissue metastasis

### Introduction

Gastric cancer remains one of the main causes of cancer mortality, despite the decreasing tendency of the incidence of gastric cancer throughout many western countries. In terms of mortality, gastric cancer is the next most frequent malignancy, after pulmonary cancer; 90% of the cases are adenocarcinomas [1,2]. The decreasing trend of its incidence is counterbalanced by the finding of more poorly differentiated histological forms, with an upper location (esogastric junction, corporeal region of the stomach), and lower occurrence age [3,4].

### Presentation of case

A 48-year-old man was admitted to this hospital in July 2008 with a 3-4 month history of ulcer-like symptoms (epigastric pain that occurred immediately after meals, nausea and vomiting) and weight loss, early satiation and jaundice. On examination the patient had intense jaundice, and also numerous subcutaneous mobile, non-tender nodules located on the thorax, upper limbs and in the latero-cervical region.

The laboratory workup showed a moderate microcytic

anemia, moderate anemia due to iron deficiency, mild elevation of serum aminotransferases and severe cholestasis.

Abdominal ultrasound showed biliary obstruction in the distal portion of the bile duct –obstruction due to tumoral proliferation or tumoral infiltration of the head of the pancreas, massive gastric corporeal proliferation, splenic vein and superior mesenteric vein thrombosis and congestive splenomegaly. There were also multiple images of retroperitoneal and subcutaneous metastatic lesions (fig.1-5).



**Fig. 1.** Abdominal ultrasound. Gallbladder hydrosis with sludge and dilated main bile duct.

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**Fig. 2.** Tumoral proliferation of the head of the pancreas.



**Fig. 3.** Abdominal ultrasound. Dilated intrahepatic biliary duct.



**Fig. 4.** Abdominal ultrasound. Metastatic lesions in the retroperitoneal fatty tissue.



**Fig. 5.** Soft tissue ultrasound. Subcutaneous metastases

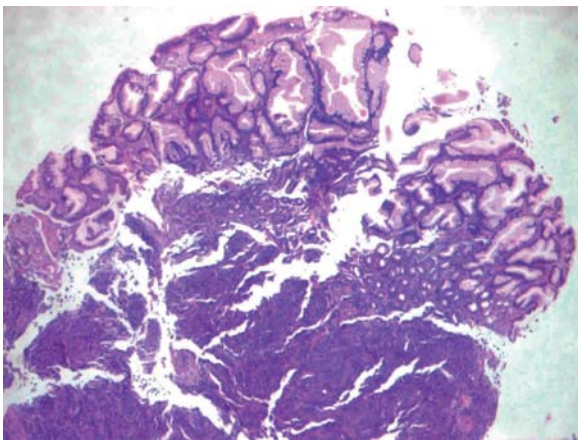
Upper endoscopy confirmed the presence of a voluminous ulcero-vegetant gastric tumor, located just below the cardia and in the fornix; the ulcer's crater was covered by a clot (fig. 6-7). The histopathological examination of the gastric tumor biopsy samples obtained through upper endoscopy revealed a poorly differentiated adenocarcinoma (G3), which was H. Pylori negative (fig. 8).



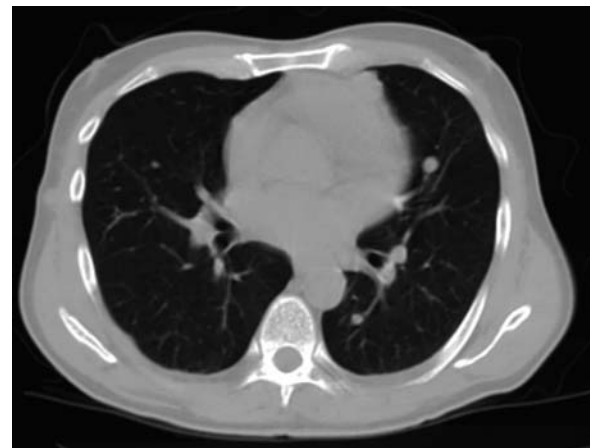
**Fig. 6.** Upper endoscopy. Infra-cardial exulcerated vegetant tumor.



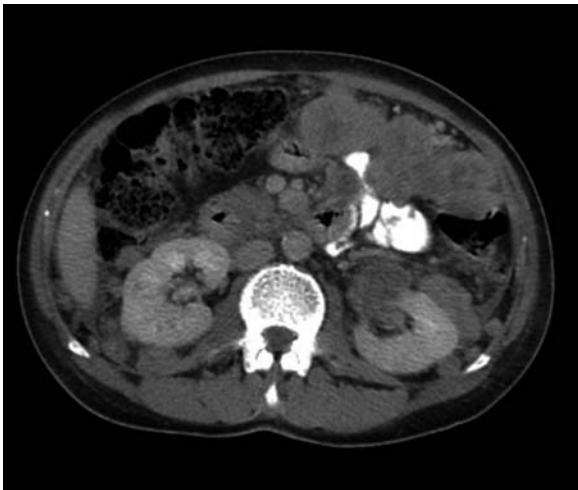
**Fig. 7.** Upper endoscopy. Infra-cardial exulcerated vegetant tumor, with a clot in the crater of the ulcer.



**Fig. 8.** Hematoxylin-eosin staining: Gastric mucosa with sheets of tumoral cells in the crypts



**Fig. 11.** Chest computed tomography. Pulmonary metastases.



**Fig. 9.** Abdominal computed tomography. Abdominal metastases.



**Fig. 10.** Abdominal computed tomography. Hepatic metastases.

In order to establish the extension of the malignant tumor, additional diagnostic tests were performed – a chest radiograph, computed tomography (CT) of the chest and abdomen. These investigations completed the particular imagistic mosaic of the present clinical observation, as they revealed the presence of additional hepatic, splenic, adrenal glands, pulmonary, pleural, mediastinal metastases and also of thoracic and abdominal lymph nodes metastases (fig. 9-11).

Faced with a case of generalized metastatic disease, originating in an aggressive gastric adenocarcinoma, we opted for palliative treatment consisting of endoscopic biliary drainage through ERCP (sfincterotomy followed by placement of a stent in the bile duct) and oral chemotherapy initiation. The hospital course of this patient was unfavorable, as he continued to experience upper gastrointestinal bleeding, manifesting in the form of melanic stools, and worsening of the anemia. As a result of repetitive upper GI bleeding episodes (which occurred as a complication of the primary tumor) the patient required transfusions; the opportunity of a palliation gastrectomy was taken into consideration, but this intervention was postponed due to the precarious physical and biological status of the patient. He also developed a high fever (39 degrees), which we – in the absence of obvious infectious processes- interpreted as a paraneoplastic syndrome.

The patient received only 2 cycles of chemotherapy and was then recommended by the oncologist to stop chemotherapy in light of the deterioration of his physical status, severe anemia and the presence of objective witness of the rapid cancerous progression: the extension of the subcutaneous metastases on his entire body surface.

Two months after the initial diagnosis, the patient was readmitted in our department, presenting with the features of a cerebral stroke with left facial hemiparesis and dysarthria. Emergency computed tomography showed multiple brain metastases, with infratentorial and supratentorial location, and also a right ocular metastases (fig. 12-13).

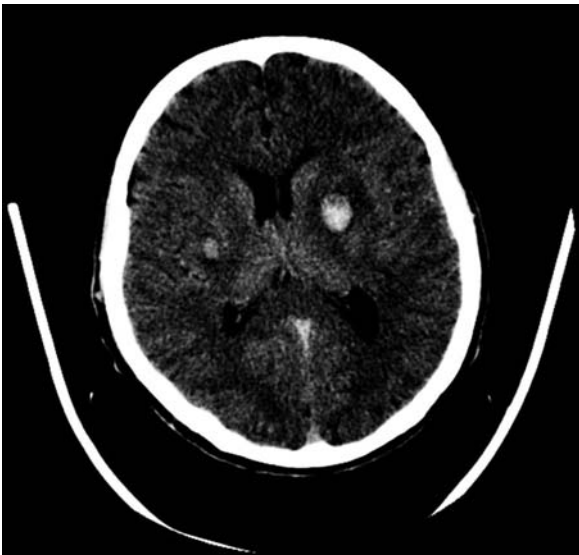


Fig. 12. Cerebral computed tomography. Brain metastases.

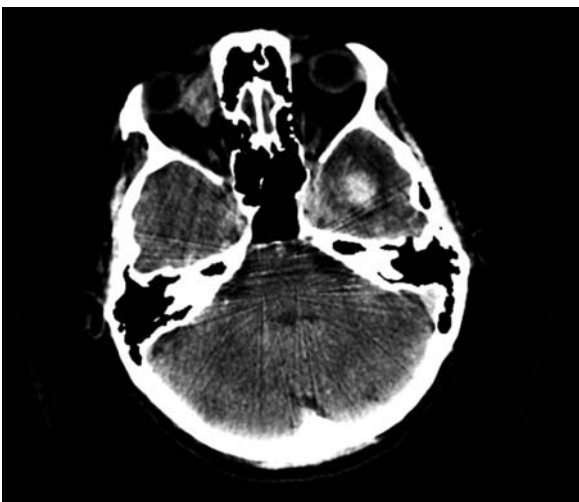


Fig.13. Cerebral computed tomography. Right ocular metastases

### Discussion

Poorly differentiated gastric adenocarcinoma (OMS classification) the diffuse type (Lauren classification) represents approximately 50% of gastric cancer cases, and occurs mainly in the areas in which *H. pylori* gastritis is not affected by atrophy or intestinal metaplasia. This type of cancer is typically characterized by growth and tumoral invasion of isolated, poorly differentiated or undifferentiated cells [5,6]. In this case we have no anamnestic arguments for a history of gastritis, and the histopathology exam was negative for *H. Pylori*. Recently, Tahara hypothesized that *c-met* gene mutation is involved

in the pathogenesis of diffuse type gastric cancer. *c-met* gene encodes *c-met* protein, a hepatic cell growth receptor (HGF), and overexpression of the *c-met* gene could in theory lead to cancer formation and progression [7].

Our patient's case follows the general trend of increasing incidence for this particular form of gastric cancer: poorly differentiated, located in the upper portion, and with a low age of occurrence, knowing the fact that this cancer typically arises in the seventh or eighth decade of life.

We were not able to identify any risk factors in this case: the patient denied any cancers in his family history and there were no evidence of nutritional factors incriminated in gastric carcinogenesis of *H. pylori* infection. Several studies confirm the increase in cardiac adenocarcinoma incidence (from 2.1/100.000 in 1975 to 3.3/100.000 in 1995) in North America and Western Europe [8]. Accordingly, a study conducted in Cluj-Napoca [9] over a period of 10 years (1985-1995) revealed a higher frequency of diffuse type gastric cancer, an increase of cases with esogastric location and with an age of occurrence below 40 years.

The presence of subcutaneous metastases and their impressive number constitutes a distinct feature in our patient's case. Cutaneous metastases are rare in gastrointestinal adenocarcinomas; they can have any location on the skin and are often non-specific, firm, non-tender subcutaneous or dermic nodules. Metastatic umbilical cancer occurred in 20% of gastric cancer cases in a histological study conducted by Powell [10]. Anagnostoulis S et al reported the case of 69 year old woman with synchronous subcutaneous paraumbilical metastasis that had a malignant gastrointestinal stromal tumor (GIST) as the primary cancer [11]. A Spanish oncological team stated in their case-report that cutaneous metastases occur seldom in solid tumors, especially those located in the gastrointestinal tract; thus, skin metastases from gastric adenocarcinomas are extremely rare, numbering 6% of the total in males and 1% in females [12]. An interesting study conducted by Plaza analyzed 118 cases of metastases to soft tissue (lesions involving skeletal muscle or skeletal muscle and subcutaneous tissue of limbs, trunk, shoulders, and buttocks) over a period of 30 years (1971-2000). The primary location of the tumors were: skin, lungs, breast, kidney, colorectal, uterus (12% to 16% of the patients); only 2 patients had a gastric cancer as the primary tumor. In 16.5% of the total cases the researchers were unable to identify the primary tumor. Histologically, 70% of all cases were carcinoma, 17% malignant melanoma and 8% sarcoma [13].

The multitude of the metastases and the variety of their location, and also the clinical manifestation they generate must be noted: left facial hemiparesis and dysarthria due to brain metastases, jaundice due to the obstruction of the



main bile duct through metastases located in the head of the pancreas.

Finally, we want to point out the advanced stage of the disease at the moment of diagnosis and the very limited therapeutic options, that consisted of palliative treatment without a real advantage regarding the patient's life quality or improved survival.

### Conclusions

The clinical observations presented here are unusual due to the rarity of cutaneous metastases in a gastric adenocarcinoma, the multitude and atypical location of the metastases, the young age of occurrence of a diffuse type adenocarcinoma and because of the aggressive and rapid progression. We find the delayed appearance of the symptoms and the non-specific character of the clinical manifestations also noteworthy.

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