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Case Report Open Access

Gastric Synchronous Stromal Tumor and Adenocarcinoma: A Fortuitous Association?

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Abstract

The association of an adenocarcinoma with a stromal tumor in the stomach is rarely observed. We report the observation of a patient operated for a synchronous tumor associating subcardial adenocarcinoma with a stromal tumor of the gastric body. It is a 74 year-old patient, diabetic, who was admitted, in December 2016, for epigastralgia associated with vomiting evolving for 2 months. Physical examination was strictly normal. An oesogastroduodenal fibroscopy was performed showing a subcardial ulcerative budding formation with a 3 cm diameter and the presence, in the gastric body, of a second sub mucosal nodular formation with a 4 cm diameter. The anatomopathological examination of the biopsies concluded to an infiltrating and slightly differentiated adenocarcinoma at the subcardial level associated with chronic HP+ gastritis without signs of malignancy. The computed tomography, performed as part of the extension study, revealed a macro-lobulated tissue mass, posterior, pre-pyloric, with submucosal development, prolapsed in the peritoneum whose enhancement characteristics evoke a stromal tumor but also an irregular gastric cardio-tuberosal thickening predominant on the small gastric curvature and associated with necrotic pre-gastric centimetric satellite ganglia. The patient had a total gastrectomy with lymph node dissection type D1, 5 and oesojejunal anastomosis on a Y-shaped loop. The anatomo-pathological examination of the surgical specimen concluded to a slightly differentiated adenocarcinoma of the cardia classified as pT3N2 associated with a stromal tumor of the gastric body Synchronous development of gastric adenocarcinoma and GIST is rare. During this association, the stromal tumor is often characterized by low risk of recidivism.

Keywords: Adenocarcinoma; Interstitial cells of cajal; Gastrectomy

Introduction

Stromal tumors (GIST) are the most frequent mesenchymal tumors of the digestive tract [1,2] with an incidence of 10 to 20 cases per 10 million people. They sit mainly in the stomach and represent 1 to 2.2% of malignant digestive tumors. 95% of malignant tumors of the digestive tract are adenocarcinomas.

The association of two types of tumors in the stomach is possible. These are mainly adenocarcinomas associated with lymphoma or a carcinoid tumor. The association of an adenocarcinoma with a stromal tumor in the stomach is rarely observed.

We report the observation of a patient operated for a synchronous tumor associating subcardial adenocarcinoma with a stromal tumor of the gastric body.

Case Report

It is a 74 year-old patient, diabetic, who was admitted in December 2016 with epigastralgia associated with vomiting evolving for 2 months. Physical examination was strictly normal.

An oesogastroduodenal fibroscopy was performed showing a subcardial ulcerative-budding formation with a 3 cm diameter (Figure 1) and the presence, in the gastric body, of a second submucosal nodular formation with a 4 cm diameter (Figure 2).

The anatomopathological examination of the biopsies showed an infiltrating and slightly differentiated adenocarcinoma at the subcardial level associated with chronic HP+ gastritis without signs of malignancy in the gastric body.

The computed tomography, performed as part of the extension study, revealed a macro-lobulated tissue mass, posterior, pre-pyloric, with submucosal development, prolapsed in the peritoneum, measuring 50 × 48 × 45 mm and whose enhancement characteristics evoked a stromal tumor (Figure 3A and 3B) but also an irregular gastric cardio-tuberosal thickening predominant on the small gastric curvature (Figure 4) and associated with necrotic pre-gastric centimetric satellite ganglia (Figure 5).

The patient had a total gastrectomy with lymph node dissection type D1, 5 and oeso-jejunal anastomosis on a Y-shaped loop.

The anatomo-pathological examination of the surgical specimen showed a slightly differenciated adenocarcinoma of the cardia classified as pT3N2, 3N+/8N (Figure 6A-D) associated with a stromal tumor of the gastric body CD34-, CD117-, DOG1+, with rare mitoses, a mitotic index <5 and without nuclear atypia (Figure 7A and 7B) considered to be at low risk of recidivism (Figures 8 and 9).

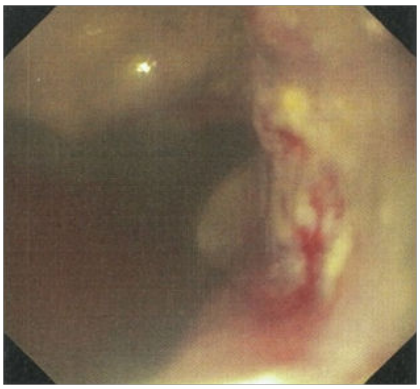

Figure 1: Sub-cardial region.

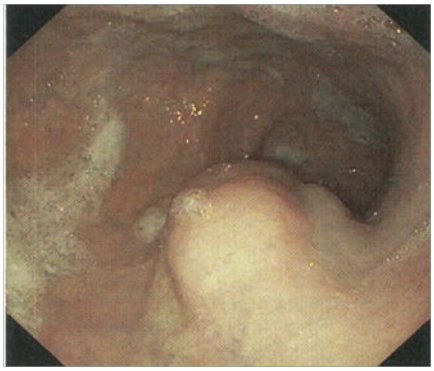

Figure 2: Gastric body.

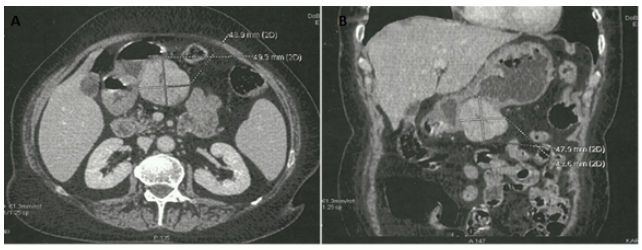

Figure 3: Gastric mass suggestive of stromal tumor.

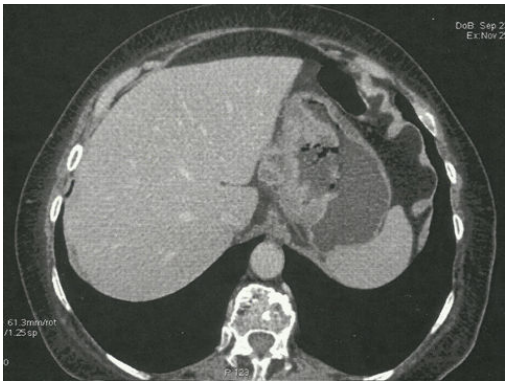

Figure 4: Cardio-tuberosal thickening.

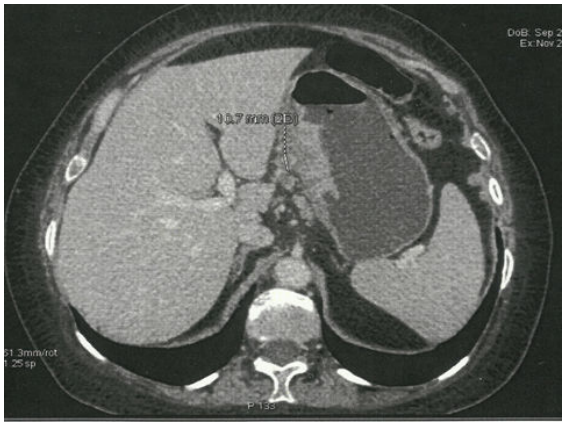

Figure 5: Necrotic pre-gastric ganglia.

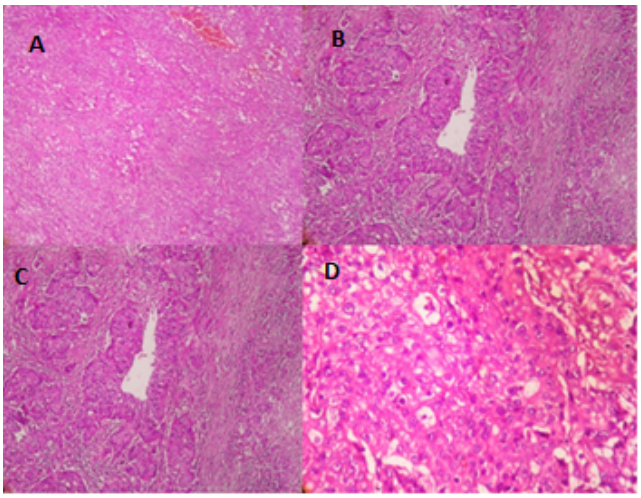

Figure 6: Slightly differentiated adenocarcinoma of the cardia.

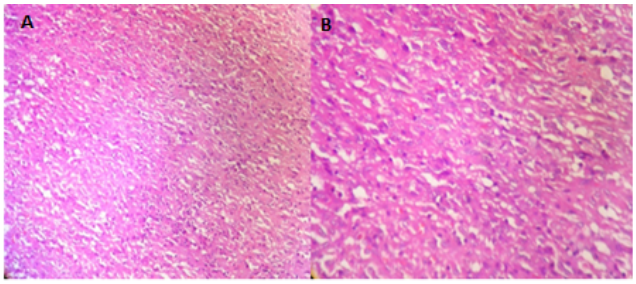

Figure 7: Stromal tumor.

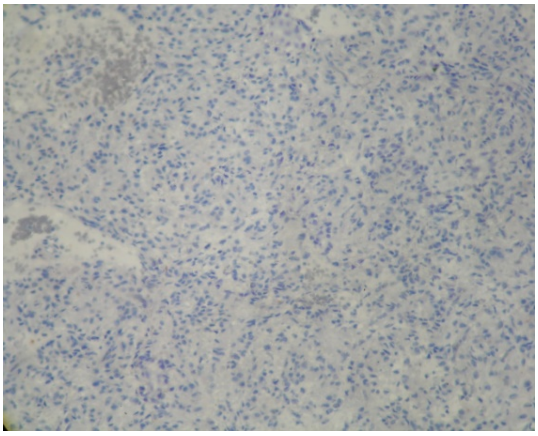

Figure 8: Stromal tumor CD117-.

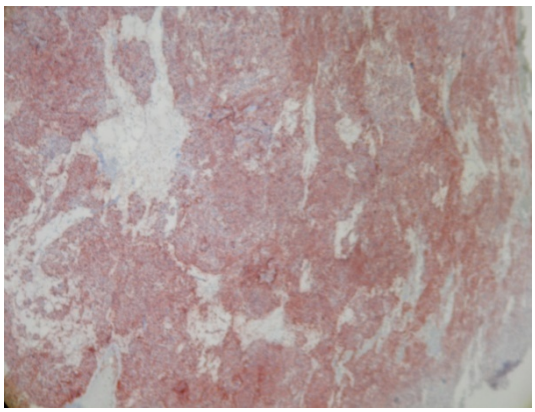

Figure 9: Stromal tumor DOG1+.

Discussion

Stromal tumors (GIST) are mesenchymal tumors developed from the interstitial cells of Cajal. They, therefore, express a specific marker to these cells, the c-Kit (CD117), and this in 95% of cases, which makes it possible to differentiate them from the other digestive mesenchymal tumors [3]. They may also express other markers such as the BCL-2 (80%), the CD34 (70%), the SMA (35%), the DOG-1, the S100 protein (10%) and the desmine (5%) [3,4].

The preferred location of these tumors is the stomach (60 to 70%) followed by the small intestine (20 to 30%), the colon and rectum (5 to 10%) and finally the oesophagus (5%) [2].

The most common clinical signs of GIST are abdominal pain, digestive haemorrhage and abdominal mass. The symptomatology depends on the location and size of the tumor.

Preoperative diagnosis of the stromal tumor, if associated with adenocarcinoma, is difficult and rarely done. Generally, adenocarcinoma masks clinically and endoscopically the stromal tumor but also at imaging, in which it is confused with adenopathies [5].

In addition, the tumor is often submucosally developed, making in most cases endoscopic biopsies negative. Thus, in the case of an association of adenocarcinoma and a stromal tumor, the diagnosis of the GIST is usually performed peroperatively and/or by the anatomopathological examination of the surgical specimen [5]. Lin et al. estimated the preoperative diagnosis rate of such an association to be only 2.4%.

The association of a stromal tumor with another malignant tumor is estimated from 4.5% to 35% depending on the series [4]. Generally, they are gastrointestinal adenocarcinoma (47%), prostatic adenocarcinoma (9%), lymphoma and leucemia (7%) and breast cancer (7%) [4]. A few cases of association of gastric stromal tumors and gastric adenocarcinomas have been reported in the literature.

Liszka et al. [6] reported that during this association, the stromal tumor is generally small in size, often less than 2 cm and presents a low risk of invasion and recidivism compared to isolated GIST, with a mitotic index often less than 5 and a Ki-67 less than 5% [4], suggesting a probable inhibition of the malignancy of the stromal tumor by adenocarcinoma.

An immuno-histo-chemical feature of stromal tumors associated with adenocarcinoma is the low expression of CD117 and CD34 [7] with often an intense expression of the DOG-1 [8].

In the presence of such an association, an R0 resection of the adenocarcinoma and the stromal tumor is necessary. Postoperative chemotherapy may be proposed for one or both tumors according to indications.

Conclusion

Synchronous development of gastric adenocarcinoma and GIST is rare. During this association, the stromal tumor is often characterized by a small size, a low mitotic index, minimal or absent nuclear atypies, a low malignant potential but also a weak expression of CD117 and CD34 with significant expression of DOG-1.

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