Pseudoachalasia as the first manifestation of signet-ring cell duodenal carcinoma

Pseudoachalasie révélatrice d'un carcinome duodénal à cellules en bague à chaton

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Abstract

Background: Pseudoachalasia is a rare clinical condition, often caused by malignancy. Rarely, this entity can reveal the underlying neoplasia. To the best of our knowledge, we report the first case of pseudoachalasia revealing a metastatic signet-ring cell carcinoma of the non-ampullary duodenum.

Case Report: A previously healthy 67-year-old patient presented with a 3-month history of rapidly progressive intermittent dysphagia with 20kg weight loss. An upper endoscopy showed multiple duodenal ulcerations on congestive mucosa. Duodenal biopsies revealed tumor proliferation formed by independent cells with atypical nuclei. In immunohistochemistry, tumor cells expressed pan-cytokeratin. Esophageal manometry revealed an aspect in favor of achalasia type II. The CT scan showed ascites and pleural effusion. Their punctures confirmed the presence of neoplastic cells. The diagnosis of metastatic signet-ring cell duodenal carcinoma revealed by pseudoachalasia was retained.

Conclusion: In the presence of rapidly progressive symptoms with significant weight loss, especially in the elderly patients, malignancy-associated pseudoachalasia should be suspected.

Keywords: Esophageal achalasia; Signet ring cell carcinoma; Duodenum

Résumé

Introduction : La pseudoachalasie est une affection clinique rare, souvent causée par une tumeur maligne. Rarement, cette entité peut révéler la néoplasie sous-jacente. A notre connaissance, nous rapportons le premier cas de pseudoachalasie révélant un carcinome à cellules en bague à chaton métastatique du duodénum non ampullaire.

Présentation du cas : Un patient âgé de 67 ans, sans antécédents pathologiques notables, s'est présenté pour une dysphagie intermittente rapidement progressive avec une perte de poids de 20 kg évoluant depuis 3 mois. La fibroscopie œsogastroduodénale a montré de multiples ulcérations duodénales sur une muqueuse congestive. Les biopsies duodénales ont révélé une prolifération tumorale formée de cellules indépendantes aux noyaux atypiques. En immunohistochimie, les cellules tumorales exprimaient la pan-cytokératine. La manométrie œsophagienne a révélé un aspect en faveur de l'achalasie de type II. Le scanner a montré une ascite et un épanchement pleural. Leurs ponctions ont confirmé la présence de cellules néoplasiques. Le diagnostic de carcinome duodénal à cellules en bague à chaton métastatique révélé par une pseudoachalasie a été retenu.

Conclusion : En présence de symptômes rapidement progressifs avec une perte de poids significative, en particulier chez les sujets âgés, une pseudoachalasie associée à une tumeur maligne doit être suspectée.

Mots clés : achalasie œsophagienne ; carcinome à cellules en bague à chaton ; Duodénum

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INTRODUCTION

Achalasia is a motility disorder characterized by the absence of peristalsis in the esophagus and incomplete relaxation of the lower esophageal sphincter (LES) in response to swallowing(1). Achalasia can be primary or secondary. Primary achalasia is an idiopathic motility disorder. However, pseudoachalasia, or secondary achalasia, is caused by an underlying condition(1). Malignancies, especially malignant gastroesophageal junction tumors, are the most common cause of secondary achalasia(2,3). In rare cases, this pseudoachalasia may be the first manifestation of the underlying neoplasia(3). To the best of our knowledge, we report the first case of pseudoachalasia revealing a metastatic signet-ring cell carcinoma of non-ampullary duodenum in an elderly patient.

CASE REPORT

A 67-year-old, previously healthy, smoker, patient presented to our department with a 3-month history of rapidly progressive intermittent dysphagia for both liquids and solids. These symptoms were associated with fatigue and a 20 kg weight loss. Furthermore, there was no abdominal pain, upper gastrointestinal stenosis syndrome, or jaundice. His body mass index was 19.03 kg / m². The physical examination was otherwise unremarkable. His routine blood investigations were normal. An upper gastrointestinal endoscopy was performed and showed an undilated esophagus without evident mucosal lesion but a difficult passage through the cardia. The retroflexion was normal. Multiple duodenal ulcerations on congestive and petechial mucosa have been noted. Esophageal biopsies were normal. Pathological examination of the duodenal biopsies showed a duodenal mucosa infiltrated by a tumor proliferation made up of independent, large cells with large and very atypical nuclei. There were also images of vascular emboli. On immunohistochemistry, tumor cells expressed pan-cytokeratin (Figures 1 and 2). Thus, the diagnosis of poorly differentiated signet-ring cell carcinoma of non-ampullary duodenal was made. Esophageal manometry revealed the absence of esophageal contractions, the absence of relaxation in 100% of swallows, hypertonic lower esophageal sphincter, and the presence of pan-esophageal pressure (achalasia type II according to the Chicago classification v4.0). The chest x-ray showed a low abundance of right pleural effusion. Abdominal ultrasound revealed moderate ascites. The thoracic-abdominal-pelvic CT scan confirmed the presence of ascites of moderate abundance, with bilateral pleural effusion, of great abundance on the right, and medium abundance on the left. Pleural and ascites fluid punctures were performed showing exudative fluid with the presence of neoplastic cells. Thus, the diagnosis of metastatic signet-ring cell carcinoma of the non-ampullary duodenum revealed by pseudoachalasia was retained. Nutritional care has been implemented. The patient was referred to the oncology department for palliative chemotherapy. But he passed away two weeks later.

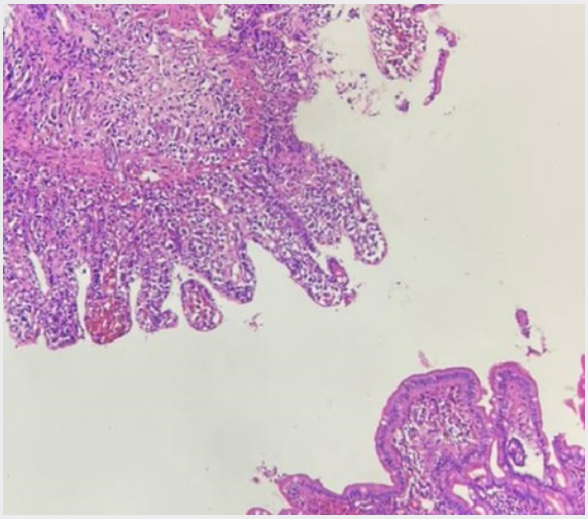

Figure 1. Duodenal mucosa biopsy (H&E stain, ×100): Presence of independent large tumor cells with large and atypical hyperchromatic nuclei.

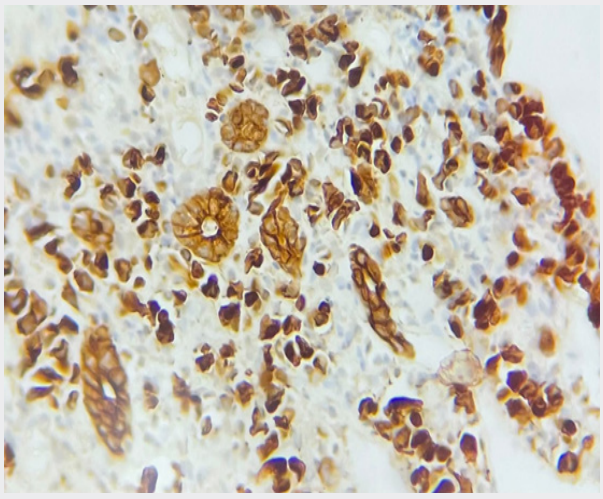

Figure 2. Duodenal mucosa biopsy on immunohistochemistry (×400): Positive immunostaining of Tumors cells for the anti-pan-cytokeratin antibody

DISCUSSION

We report the case of pseudoachalasia revealing a metastatic signet-ring cell carcinoma of non-ampullary duodenum in an elderly patient. Pseudoachalasia, also known as secondary achalasia, is an uncommon clinical condition mimicking idiopathic achalasia(2,3). This condition accounts for 2.4 to 4% of patients with symptoms of achalasia(3).

In the majority of cases, pseudoachalasia is caused by a primary or secondary malignancy (in about 70% of cases)(3,4). It may be the first manifestation of a malignancy(3,4). Benign causes of pseudoachalasia have been also reported. It can be seen after gastroesophageal junction surgery such as the fundoplication or gastric band(1). The main causes of secondary achalasia, according to a review, were: a primary malignant tumor of the esophagus or gastroesophageal junction (50%); metastases from lung or breast cancer (18%); benign disorders such as mesenchymal tumors, secondary amyloidosis, or peripheral neuropathy (14%); achalasia secondary to antireflux surgery (12%), central nervous system diseases (3.5%) or paraneoplastic syndromes associated with small cell lung carcinomas, bronchial carcinoids and/or mesothelioma (2.5%)(5). Other causes, much rarer, such as lymphoma, pancreas or duodenal carcinoma may also present in this manner(6). Indeed, Anderson et al reported a case of achalasia secondary to metastatic duodenal adenocarcinoma. Nevertheless, this pseudoachalasia appeared during the evolution of the disease (9 months after the cancer diagnosis)(6). Signet-ring cell carcinoma of the non-ampullary duodenum is a rare entity. To the best of our knowledge, pseudoachalasia as the first manifestation of this histological type has not been previously reported in the literature(7,8).

Several mechanisms have been proposed to explain how neoplasms can cause secondary achalasia. First, direct tumor invasion of the esophageal wall causes malignant strictures in the LES with secondary involvement of inhibitory neurons in the myenteric plexus of the esophagus. In addition, tumors can also interfere with esophageal peristalsis by damaging the vagus nerve. More rarely, achalasia may be the result of a paraneoplastic syndrome with nuclear antineuronal antibodies. This mechanism is based on the interaction of tumor factors with the esophageal neuronal plexus without direct tumor infiltration from the esophagogastric junction(5). Given the absence of tumor cells on the esophageal biopsies, the paraneoplastic syndrome with nuclear antineuronal antibodies represented the most probable mechanism of pseudoachalasia in our patient.

The clinical presentations of primary and secondary achalasia are similar. However, the recent onset of dysphagia in an often-elderly subject (> 60 years), short duration of symptoms (<6 months) and considerable weight loss strongly suggest pseudoachalasia. The presence of two or more of these risk factors prompts a search for pseudoachalasia associated with neoplasia(1,3).

Our patient presented several risk factors: advanced age, short duration of symptoms (3 months) and 20 kg weight loss. A barium swallow can provide clues to differentiate between idiopathic and secondary achalasia. Indeed, as opposed to those with achalasia, the length of the narrowed esophageal segment was found to be longer than 3.5 cm in 80% of the patients with pseudoachalsia, yet the degree of dilation above the narrowed segment is less than 4 cm. However, the predictive value of this criterion was not high. Esophageal manometry and upper gastrointestinal endoscopy cannot formally distinguish between primary and secondary achalasia. Endoscopic ultrasound may be helpful to search for submucosal tumors or lymph nodes. The CT scan is necessary to look for a primary or secondary malignant lesion(3,9).

In our case, the diagnosis of the primary malignant lesion was based on endoscopic findings and duodenal biopsies. The scanner assessed the extension of the remote tumor.

Given the variety of these etiologies, the treatment of pseudoachalsia depends essentially on the underlying pathology. In malignancy, radiotherapy and chemotherapy have been shown to improve esophageal obstruction. In the case of pseudoachalasia secondary to amyloidosis or sarcoidosis, Botulinum injection may relieve symptoms. In some cases of refractory achalasia, surgical treatment with Heller's myotomy may be offered(3). Currently, treatment with self-expanding metal stents (SEMS) is becoming a therapeutic option of choice for rapid symptom relief. Although it has been associated with complications such as bleeding perforation, pain, and fistula formation, it has better long-term results than pneumatic dilation(10).

In our patient, the pseudo achalasia was secondary to a metastatic duodenal carcinoma, thus chemotherapy was indicated.

In conclusion, secondary achalasia should be suspected in the presence of rapidly progressive symptoms with significant weight loss, especially in elderly patients. The early identification of malignancy-associated pseudoachalasia is of immense importance in preventing disease progression and avoiding delaying adequate treatment.

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