Esophageal metastasis of kidney cancer. A challenging diagnostic problem

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KEY WORDS

kidney cancer ◗ metastasis ◗ esophageal malignancy ◗ paraesophageal hernia ◗ metastatic renal cell carcinoma

ABSTRACT

Kidney cancer is known for its potential to produce metastases to virtually all organs. We present a 54-year-old male patient who suffered from esophageal metastasis during initially successful sunitinib treatment. The lesion manifested initially as a sliding esophageal hiatal hernia. The challenging diagnosis with limited radiological investigations and treatment are described.

CASE REPORT

A 54-year-old male patient was referred for further treatment of metastatic renal carcinoma. He had undergone right radical nephrectomy two years earlier (pT3aN0Mx, clear-cell renal carcinoma, Fuhrman G3). Five months postoperatively, metastatic lesions in the lungs manifested. Interferon alpha-2a treatment was attempted, but was abandoned after six weeks because of noncompliance due to major side effects. The patient's significant medical history consisted of a 20-year history of signs of gastroesophageal reflux disease (GERD) with periodic symptom intensification. This ailment had never been thoroughly investigated and was treated empirically only during exacerbations with oral antacids, H_2-histamine receptor antagonists, and proton pump inhibiters. During the course of oncological treatment, hypersensitivity to intravenous computed tomography (CT) and magnetic resonance (MR) contrast agents developed. This severely limited the diagnostic power of radiological procedures.

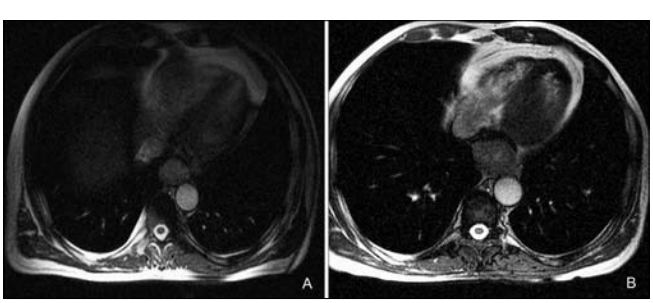

Fig. 1. Non-contrast-enhanced T2-weighted transverse magnetic resonance images of the: A) sliding esophageal hiatal hernia taken in April 2007. Note the concentric thickening of the supradiaphragmatic esophageal wall, indicating a type 1 (sliding) esophageal hiatal hernia. The walls are in fact gastric walls; B) esophageal tumor taken in November 2007. The lesion clearly adheres to the aorta, but no evidence of its invasion is present.

In January 2006, sunitinib was introduced in the classical dosing regimen, i.e. cycles of 50 mg daily for four weeks with two weeks off treatment. Initially, only pulmonary metastases were diagnosed and no other pathologies were seen. After four cycles, partial remission according to RECIST criteria (all lesions diminished to less than 3 mm) was evident. After 10 cycles the dose was reduced to 37.5 mg/d because of hand-foot syndrome, painful muscle contractions, crural ulceration, general weakness, and loss of taste.

At the end of March 2007, dysphagic symptoms were reported, i.e. difficulties in swallowing especially solid, poorly chewed meals, with an accompanying sensation of burning and distension behind the sternum and occasional retrosternal pain. These were ascribed to the previously known reflux disease aggravated by sunitinib's side effects and oral pantoprazole 20 mg/d was prescribed. CT and MR performed two weeks thereafter showed a new pathology, i.e. a type 1 (sliding) esophageal hiatal hernia (Fig. 1A). The symptoms significantly lessened. Subsequent CT and MR scans performed after two and five months were nearly identical to the previous ones and additional diagnostics were abandoned.

In September 2007, dysphagia recurred and omeprazole was prescribed, but because of an aggravation of symptoms (only liquid meals were ingestible), the patient was referred for gastroscopy. The performing gastroenterologist described a healing linear fissure just above the cardia suggesting esophagus mucositis and prescribed further omeprazole 20 mg/d for 28 days. Repeat gastroscopy four weeks later revealed two small whitish tubercles covered by mucosa partly obliterating the esophagus and the first suspicion of an esophageal tumor was raised. A 5.8 x 4.2 cm tumor of the distal end of the esophagus was visible on MR performed at the end of November, but features of a sliding esophageal hernia were still present (Figs. 1B and 2). The patient continued sunitinib as the pulmonary metastases were still in remission. Two gastroscopies with tumor biopsy were performed in December 2007 and January 2008, but non-diagnostic tissue was obtained (thermal injury to the specimens). CT-guided fine-needle biopsy followed, but nonmalignant tissue was retrieved.

From March 2007, when the first dysphagic symptoms manifested, to the end of January 2008 the patient lost 5.5 kg in weight. At the end of March 2008, sunitinib treatment was discontinued because of clinical progression, although the pulmonary metastases had not grown, and an inability to swallow the drug. By then he had lost a further 7 kg, as even liquid was hardly ingestible. Although no histological diagnosis was present, the lesion was deemed unresectable. Repeated endoscopic argon vaporization of obliterating tumor masses was carried out with moderate effect (liquid could be swallowed). At the end

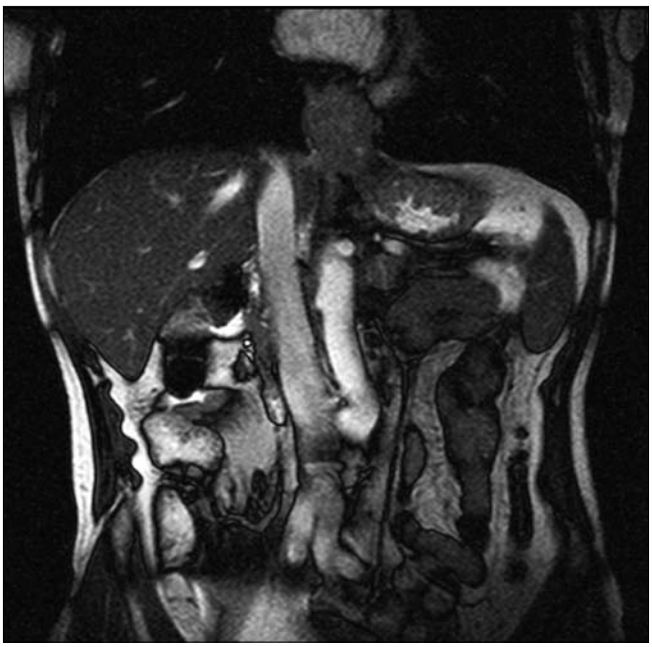

Fig. 2. Non-contrast-enhanced T2-weighted frontal magnetic resonance image of the esophageal tumor taken in November 2007. The lesion retains features of an esophageal hiatal hernia.

of May the esophagus was stented with a self-extracting stent (Hanarostent™, M.I. Tech Co. Ltd.). This allowed for renewed oral food intake and weight gain. It also ceased occasional bleeding from the tumor. During the procedure, deep specimens were taken and histological confirmation of the metastatic nature of the esophageal tumor was finally possible. Our patient passed away 4 months after stenting during gastroscopy for tumor hemorrhage.

DISCUSSION

The patient presents the first case of esophageal kidney cancer metastasis imitating a sliding esophageal hiatal hernia, which retrospectively was the first sign of sunitinib treatment failure. As in a few previously described cases, the first sign of esophageal kidney cancer metastasis was dysphagia [1-4]. The differential diagnosis in dysphagic patients encompasses a very broad spectrum of functional and anatomical disorders, including primary and secondary esophageal tumors, GERD, and esophageal hiatal hernia. The symptoms presented by our patient were initially ascribed to a previously known reflux disease aggravated by sunitinib's side effects. GERD and esophageal hernia often coincide and overlap in etiology and symptoms and esophageal hernia can be a complication of long-lasting GERD [5, 6].

The occurrence of synchronic kidney and esophageal cancer is rare [7]. As a risk factor of primary esophageal malignancy we considered the long-lasting gastroesophageal reflux disease, which may lead to Barret's esophagus, a precancerous lesion. Esophagogastroscopy, even when performed by an experienced endoscopist, is not always sensitive enough to help in the differential diagnosis of ambiguous esophageal tumors, especially when they are of metastatic origin. In contrast to primary tumors, metastases grow submucosally and diagnostic specimens are difficult to retrieve [8]. An additional pitfall in the management of our patient was his hypersensitivity to intravenous contrast agents. This severely limited CT and MR sensitivity as the alterations in contrast inflow and washing out might have altered the radiological picture and change the course of treatment.

The simultaneous appearance of esophageal and renal cancer as esophageal metastasis of kidney cancer is rare. In patients with metastatic kidney cancer, both possibilities should be taken into account as the treatment protocols for the two malignancies differ. New nonmalignant lesions and side effects of treatment that appear during systemic therapy should be thoroughly investigated and closely watched as they can be of cancerous origin in the end. CT and MR do not always allow for reliable diagnosis especially when not contrast enhanced.

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