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Case Report

Gastric Polyps as a Rare Presentation of Metastatic Renal Cell Carcinoma

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Abstract

Metastatic renal cell carcinoma is notorious for metastasizing to unusual sites, but gastric involvement is exceedingly rare. We report here a case of metastatic renal cancer presenting as suspicious looking gastric polyps to emphasize the importance of considering metastatic disease in the differentials of gastric lesions, especially where there is a background of malignant disease. A lady in her sixties presented with non-specific gastrointestinal symptoms on a background of radical nephrectomy for renal cell carcinoma which was carried out many years ago. Computed Tomography imaging demonstrated bilateral pulmonary nodules, pancreatic lesions, a gastric hyper density, and an enlarged thyroid gland with multiple enhancing nodules. Differentials included metastatic disease. An urgent upper gastrointestinal endoscopy was performed which showed few gastric polyps. These were biopsied. Pancreatic lesions were also biopsied using endoscopic ultrasound. Histopathological analysis confirmed all the lesions as metastatic deposits from the previously treated renal cell carcinoma. Immunohistochemical staining was positive for PAX-8 and CD10 markers, supporting renal origin. This case highlights the importance of comprehensive histological evaluation including the crucial role of immunohistochemical staining in work-up for malignancy and metastasis. This is especially true when there is a history of an oncological issue. Although rare, renal cell carcinoma can metastasize to the stomach and present as polyps. Timely recognition with a low threshold of suspicion can lead to timely appropriate management which can positively impact patient outcome.

Keywords: *Renal Cell Carcinoma, Gastric Metastasis, Immunohistochemical Staining, Metachronous Metastasis*

Introduction

Renal cell carcinoma stands seventh in the list of most common cancers within the UK [1], constituting about 3% of all adult cancers. Unfortunately, renal cell carcinoma comes with a poor prognosis. Even after curative treatment, metachronous relapse can manifest [1]. Most commonly, renal cell carcinoma metastasises to the lungs, liver, bones, and lymph nodes, and the interval between primary diagnosis and appearance of metastasis can vary. Metastasis to the stomach is very uncommon from any primary cancer and stand at an incidence of 0.2-0.7% of all cancers. While usually stomach metastasis presents as masses or ulcers, they can present as benign-looking polyps and are mostly in the body of the stomach [1].

Symptomatically, these usually cause anaemia, abdominal pain, gastrointestinal bleeding, and heartburn-like symptoms [2]. Therefore, presentation of these symptoms in patients with a malignant background should immediately prompt further work-up including endoscopy, imaging, and histopathological analysis. Histopathological analysis should not be limited to light microscopy. Immunohistochemical staining should be applied for precise identification of any cancer and its origin. Timely diagnostic work-up and subsequent treatment planning, if deemed appropriate based on clinical rationale through multidisciplinary input, can be significantly positive from a prognostic perspective.

Case Presentation

A middle age female with an unremarkable family history was initially diagnosed with left renal cell carcinoma (G2 pT3a Nx) in 2010. She underwent an elective left laparoscopic radical nephrectomy the same year and had regular follow-up appointments with urology, including serial CT scans which showed no evidence of recurrence. Thence, she was discharged from follow-up care in 2013. In 2024, the patient was referred by her general practitioner to endocrine surgery for evaluation of a multinodular goiter with normal thyroid function. A CT scan performed at that time revealed multiple bilateral pulmonary nodules (suggestive of metastasis), multiple pancreatic lesions (the largest measuring 4.2 cm), and a small hyperdensity in the stomach measuring 8.5 mm. She did not have any gastrointestinal symptoms such abdominal pain, per rectal bleeding, dyspepsia, or vomiting. These findings were discussed at a multidisciplinary team (MDT) meeting in urology, which recommended consideration of a stomach or pancreatic biopsy due to the suspicion of metastatic renal cell carcinoma. Within one month, the patient underwent an endoscopy, which revealed two small polyps in the fundus of the stomach. [Figures 1 A&B]

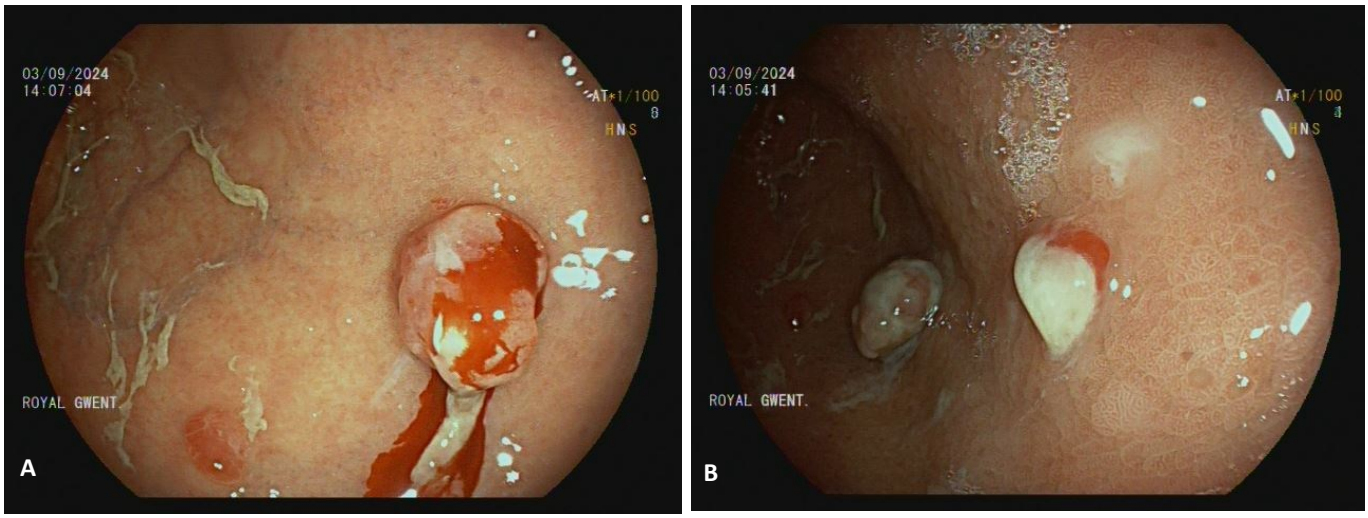

Figure 1. A & B *Gastroscopy showing gastric polyp in the stomach-Fundus.*

The largest polyp, approximately 5 mm in size, displayed distorted, friable mucosa. Three biopsies were taken, and the polyp began to continuously ooze blood, requiring the application of two clips and the spraying of Purastat, a haemostatic agent, to secure hemostasis. The remainder of the stomach, esophagus, and duodenum (D1, D2) appeared normal. Subsequent endoscopic ultrasound (EUS) revealed multiple predominantly hypoechoic pancreatic lesions, and a successful fine-needle biopsy (FNB) was performed. Histopathological examination of the biopsied specimen showed ulcerated tissue infiltrated by individual cells and cohesive nests of cells with clear cytoplasm, which were positive for PAX8 and CD10, and negative for CK7 and CK20. These findings were consistent with metastatic clear cell renal cell carcinoma, although no background gastric mucosa was present for assessment. The patient was referred to oncology for further management. She initiated treatment with Nivolumab and Ipilimumab. Unfortunately, she developed immunotherapy toxicity after the first cycle and soon thereafter, passed away. [Figures 2&3]

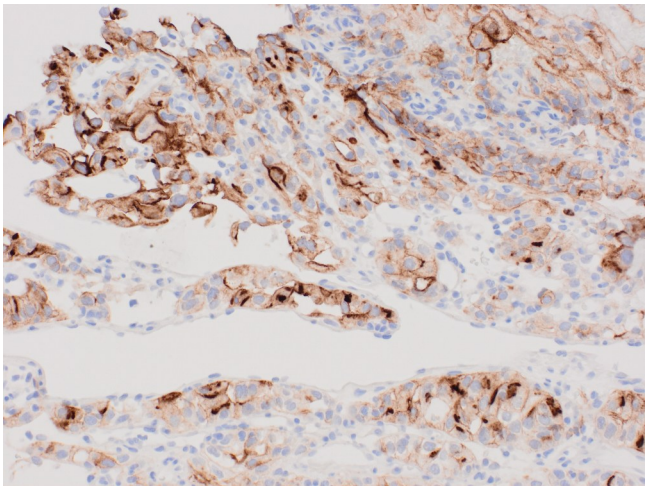

Figure 2. *Histopathology showing CD10 positive strain.*

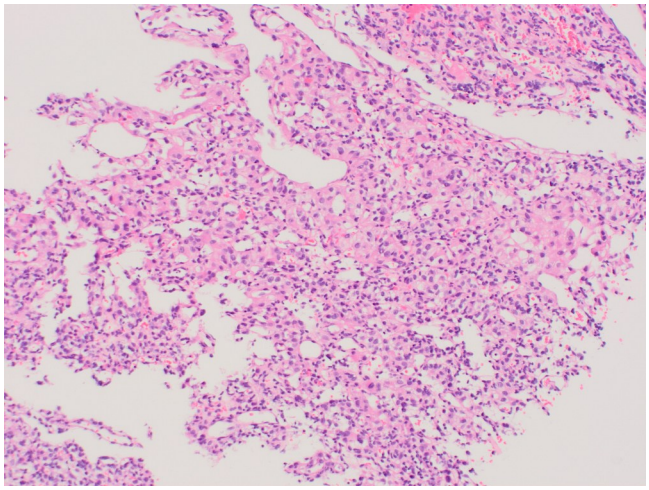

Figure 3. *H & E stain positive for PAX-8.*

Discussion

Gastric metastasis is not common with an incidence of only 0.2-0.7% in all primary cancer cases. Moreover, those from renal origin are even rarer, with only 6.2% of renal cell carcinomas spreading to the stomach [1], and most present in a metachronous manner. In fact, gastric metastasis twenty years after nephrectomy for renal cell carcinoma has been reported [3]. But this is variable, and earlier occurrence is possible as well. Generally, the interval between gastric recurrence and the primary diagnosis can depend on the primary cancer. It is long for renal cancers [5]. For instance, it is shorter at two years for primary lung cancer than an average of seven years for renal cancer. In our patient, the diagnosis of renal cell cancer which was radically treated with surgery dated fourteen years back. Gastric metastasis in renal cell carcinomas happens more commonly in males in ages ranging from 54 to 77 years and are usually single lesions. While our patient was also in the same age range, in contrast, our patient was a female and had more than one metastatic lesion in the stomach.

In addition to the stomach, any other part of the alimentary canal and hepatobiliary system can be involved [5] including, most rarely, the colon, and most commonly, the ileum. In fact, the most common metastatic lesions found in the pancreas are from renal cell carcinomas. Metastasis from renal cell cancers is usually through hematogenous spread. The presentation can accordingly vary depending on the site. For instance, large colonic lesions can present with rectal bleeding or constipation and duodenal / ampullary lesions can present with jaundice. Most gastric metastasis present with upper gastrointestinal bleeding and subsequent anaemia but abdominal pains and heartburn like symptoms may also be reported [2]. Uniquely, our patient had not displayed any gastrointestinal symptoms.

On computed tomography imaging, intraluminal polypoid masses in 63.2% of the cases, with hyperenhancement in 78.9% of the cases and heterogeneous enhancement in 63.2% of the cases were reported in a medical record review study of renal cell carcinoma cases which had metastasized to the alimentary tract, with a mean lesion size of 34.1 ± 15.0 mm. Our patient's CT-Scan showed a small hyperdensity within the stomach that measured 8.5mm.

Endoscopic examination in gastric metastasis usually demonstrates mass or ulcer lesions in the body of the stomach, however, they can also resemble benign polypoid growths. In our Case, two small polyps in the fundus of the stomach were discovered. The larger of the two was approximately 5mm with a distorted and friable surface mucosa. When benign looking growths are encountered, it is imperative that the history of the patient regarding any past or current malignancy is considered [2]. They will prompt further investigation of benign looking lesions to confidently rule out recurrent malignancy. With the same concept, given the history of previously cured renal cell cancer in our patient, biopsy specimens were sent for immunohistochemical staining. These demonstrated infiltration by individual cells and cohesive nests of cells with clear cytoplasm, which expressed PAX8 and CD10, and were negative for CK7 and CK20. These characteristics were consistent with metastatic clear cell renal cell carcinoma.

Treatment of stomach metastasis requires a multidisciplinary approach with specialist input from gastroenterology, oncology, upper gastrointestinal surgery, and interventional radiology. The extent of metastasis is an important determining factor of the treatment approach with isolated gastric lesions warranting surgical resection whereas more diffuse disease may require systemic anti-cancer treatments such as chemotherapy and immunotherapy.

Outcomes are usually poor with metastatic disease with a variable median survival of one year from discovery of gastric metastasis . In our case, the patient was commenced on Ipilimumab and Nivolumab, but unfortunately developed immunotherapy toxicity after only one treatment cycle.

Advances in treatment modalities has led to an improved survival period of renal cancer patients. Consequently, gastric metastasis and other rare sites of metastasis are more likely to be encountered [4]. This also means that with most current follow-up guidelines encompassing only a few initial years when most secondary metastases develop, there is potential for very late metastases to be missed, creating reason for long term follow-up. Follow-up of our patient was for only three years following her surgery with no evidence of recurrence.

Conclusion

This case, with a previously cured renal cancer but now presenting with metastatic disease including benign looking gastric polyps, advocates for a high index of suspicion for recurrent malignant disease in patients presenting with concerning features where there is a background of malignancy, be it several years ago or be it cured initially. Once suspected, imaging and histopathological analysis including immunohistochemical staining can be crucial in confirming malignancy and determining its likely origin through assessment of markers, as was done here by assessing for PAX-8 and CD10 markers. Furthermore, the case highlights the relevance and significance of thorough history taking in impacting appropriate work-up for patients. There is room for work on guidelines regarding determining long-term follow-up investigations for patients declared free from renal cancer, given how metastatic disease can present in a metachronous pattern at later times. This may help pick up gastrointestinal metastasis prior to them becoming symptomatic and extensive with potentially greater chance of cure and improved patient outcomes.

Conflict of Interest

The authors declare no conflict of interest.

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