Double Trouble – Synchronous Primary Malignant Neoplasms: A Case Report

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Summary

Synchronous primary malignancy (SPM) is rare. We herein present a case of gastric carcinoma (GC) and renal cell carcinoma (RCC) to highlight the fact that the occurrence of RCC as a synchronous tumor along with GC is rare and that a high index of suspicion of SPM should be considered before declaring it as a metastasis. A 60-year-old male presented with abdominal pain and vomiting for 4 months, and a mass was incidentally found in the lumbar region. The patient was diagnosed with SPM of the GC and RCC. Chemotherapy was given, followed by total gastrectomy; radical nephrectomy was performed. The patient is currently on follow-up. Complete history taking and thorough physical examination of patients with malignancy is instrumental in ruling out metastasis and other synchronous lesions, especially in GC. Synchronous malignancies should be treated with the multidisciplinary team, as there is no consensus in the treatment protocol.

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Background

Multiple primary malignancy (MPM) is the presence of two or more tumors that are not metastases of each other in a patient (1). They can be either synchronous or metachronous. Synchronous primary malignancies (SPMs) are malignancies that occur either simultaneously or within 6 months of diagnosis of the primary cancer, whereas metachronous malignancies are those that occur with a gap of at least 6 months and with the second malignancy usually appearing after the treatment of the first. The prevalence of MPM was reported to be between 0.734% and 11.4% in a review of 1,104,269 patients, with the synchronous type having a much lower proportion (2). The huge difference in the incidence of MPM can be attributed to variations in availability of facilities for diagnosis as well as the varied long-term survival of patients with cancer (3).

The various risk factors for the development of MPM are immunological defects, genetic defects such as Li-Fraumeni syndrome, environmental exposure to carcinogens such as cigarette smoke, and previous chemotherapy (4). Increasing clinical knowledge and the development of newer diagnostic techniques have led to increased diagnosis of MPM. This case report emphasizes that MPM poses diagnostic and therapeutic challenges to clinicians. Notably, 0.7% to 11% of gastric carcinoma (GC) has been found to be associated with synchronous malignancies (2, 5). SPMs are usually found in the colon, breast, and lung in descending order of frequency. Renal cell carcinoma (RCC) as SPM is rare (5-7). The incidence of synchronous stomach–kidney tumors worldwide is approximately 0.13–0.42% (5). As the incidence of GC with SPM is higher in Asian population, the possibility of second malignancy should be kept in mind (5, 6, 8). Once diagnosed, a meticulous search for genetic and familial risk factors should be done in the patient and the patient's family. Thus, we herein present a patient with SPM of the stomach and kidney.

Case presentation

A 60-year-old male patient, non-alcoholic and non-smoker, with diabetes for 4 years and on regular medications, presented with pain in the upper abdomen for 4 months. The pain was dull aching, continuous, localized to the epigastric region and increased in severity over time. It was associated with vomiting immediately after food for the past 2 months. The vomiting was non-bilious, non-projectile, and contained food particles. The patient had a history of anorexia and 20-kg weight loss in the past 4 months. There was no significant family history. There was no history suggestive of metastasis.

The general examination revealed a poorly built patient with pallor. Abdominal examination revealed a ballotable mass in the left lumbar region. The abdomen had no other palpable mass or clinically detectable free fluid.

Upper gastrointestinal endoscopy revealed growth in the antro-pyloric region of the stomach. Biopsy of the growth showed moderately differentiated diffuse-type adenocarcinoma of the stomach. Biopsy of the mass in the left kidney revealed RCC (Figure 1).

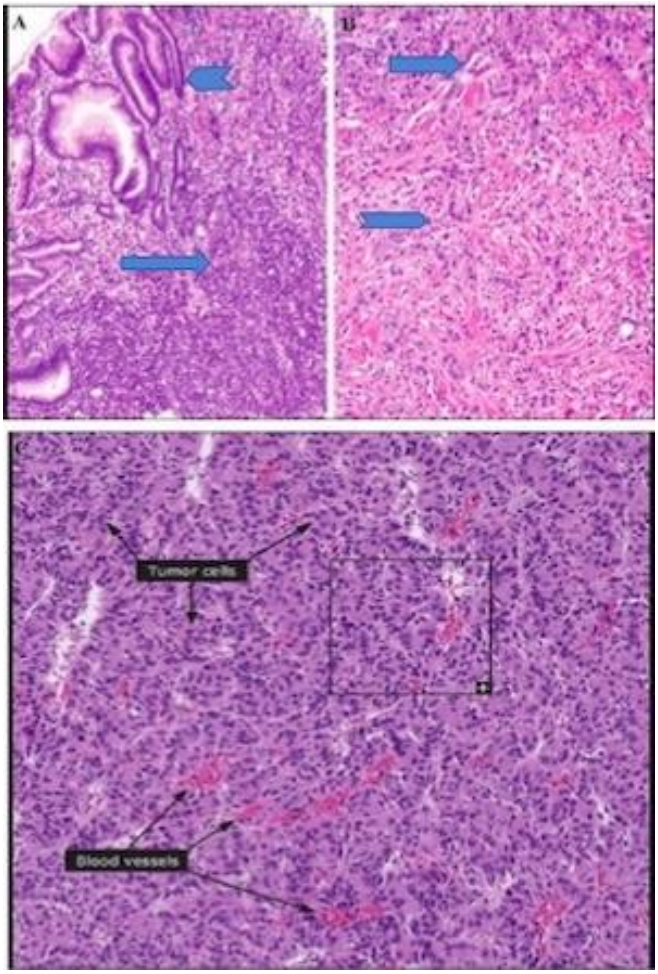

Figure 1. Histopathological sections showing (A) sheets of tumor cells (arrow) along with adjacent normal gastric mucosa (arrow head) (hematoxylin and eosin, original magnification ×100) and (B) tumor cells arranged in glands (arrow) and singly scattered signet ring cells (arrow head) (hematoxylin and eosin, original magnification ×200). Photomicrograph of the biopsy of the left kidney showing tumor with adjacent normal mucosa (hematoxylin and eosin, original magnification ×200).

Urine cytology was negative for urothelial carcinoma. Contrast-enhanced computed tomography abdomen revealed a circumferential heterogeneously enhancing wall thickening in the antro-pyloric region for a length of approximately 5.7 cm and maximum thickness of 1.7 cm. This lesion was transmural with peri-serosal fat stranding. Multiple large homogenously enhancing peri-gastric, peri-portal, retro-pancreatic, celiac, and aorto-

caval lymph nodes were observed, with the largest measuring 2.3 cm in the peri-portal region. A well-defined lobulated, enhancing, iso-dense lesion was observed involving the mid-pole of left kidney, measuring approximately 5×4.4 cm (Figure 2).

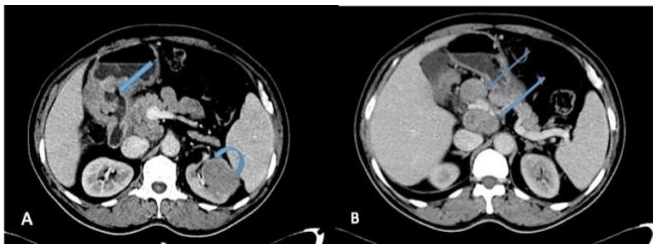

Figure 2. Contrast-enhanced computer tomography of the abdomen. (A) Axial image showing irregular nodular gastric wall thickening in the antro-pyloric region (straight arrow) suggestive of malignancy. A well-defined hypo-enhancing lesion (curved arrow) can be seen in the same image involving the lateral aspect of the mid-pole of the left kidney. (B) Multiple large enhancing lymph nodes (straight arrows) around the common hepatic artery.

The patient's details were discussed in the institute's tumor board meeting, and the patient was given neoadjuvant chemotherapy, including docetaxel, 5-fluorouracil, and cisplatin as recommended for GC. This was followed by radical total gastrectomy and total nephrectomy. Radical total gastrectomy was carried out because, intra-operatively, the growth was extending proximally along the lesser curvature. The TNM stage of the GC was T3aN3M0 (stage 3C), and that of the RCC was T1N0M0 (stage 1). The post-operative period was uneventful, and the patient is being followed up for the past 18 months, with complete history taking and physical examination every 3 months showing no evidence of local recurrence or distant metastasis. The patient's family members were screened and educated about the follow-up.

The patient gave written informed consent to publish his case and the images. Ethics approval was obtained from the Institute Ethics Committee of Jawaharlal Institute of Postgraduate Medical Education and Research.

Discussion

GC has a high incidence in Southeast Asian countries such as Japan, China, and South Korea; however, its incidence in India is low (3.0–13.2) (9). Although the incidence of SPM with GC varies widely from 0.7 to 11%, the incidence of RCC as an SPM with GC is very rare (0.11–0.37%) (2, 5). We herein presented a rare case of GC with RCC as SPM in a 60-year-old patient who did have any identifiable risk factors. During the physical examination, a mass was identified in the left lumbar region, which, on further investigations, was confirmed to be RCC. The patient underwent radical total gastrectomy and total nephrectomy.

Our patient presented with non-specific symptoms such as vague abdominal pain and weight loss, which is the scenario in 40% of patients with GC (5). This mandates a thorough physical examination and workup. Furthermore, our patient did not have any identifiable risk factors such as smoking and very old age (>60 years), as found in the literature (3, 10, 11).

The stomach is the most common site of a primary tumor in the gastrointestinal tract that is associated with synchronous lesions; the most frequent ones being colorectal, lung, and liver cancer (10, 12). There are very few reports that describe synchronous GC and RCC (5). The treatment protocol and outcome depend on the disease per se as well as the stage of each primary carcinoma at presentation (5). The standard peri-operative chemotherapy protocol for locally advanced GC includes 5-flourouracil and cisplatin. This is followed by partial or total gastrectomy (13). We have started our patient on neoadjuvant regimen for GC. The survival is dictated by the tumor with higher stage. Therefore, the surveillance was based on GC. Early RCC is treated with upfront surgery, either partial or radical nephrectomy depending on the size of the lesion (14).

Hu et al. reported a case of synchronous GC and RCC, wherein the patient was successfully treated with partial gastrectomy and radical nephrectomy (15). The patient remained disease-free at the 20-month follow-up. The patient in the present case report underwent neoadjuvant chemotherapy and surgery and was followed up according to standard protocol, with history taking and physical examination every 3 months. The follow-up will continue every 3 months for 2 years and then every 6 months thereafter (16). The patient had no recurrence

after 18 months of follow-up, suggesting that patients with two primary tumors can be treated with the aim of potential cure. It also highlights the importance of keeping a high index of suspicion for multiple primaries for early diagnosis and favorable outcomes.

Conclusion

SPM is rare, and awareness of the increasing incidence of a second primary malignancy, especially in GC, can prevent inappropriate staging with a possibility of injudicious therapy. The presence of MPMs should arouse the suspicion of genetic involvement, and family members should be screened for similar malignancies. Once diagnosed, the plan of management should include a multidisciplinary team planning for the treatment of both the malignancies individually for the loco-regional aspect and collectively for the systemic component of the disease.

Declaration of interests

The authors declare no conflict of interest.

Author contributions

All authors contributed equally in writing and editing the manuscript.

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