

# Synchronous papillary urothelial carcinoma of urinary bladder and adenocarcinoma of stomach in a middle-aged man: An extremely rare association with therapeutic dilemma

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## ABSTRACT

Synchronous occurrence of urinary bladder carcinoma and gastric carcinoma is very rare. A middle-aged Asian man presented with complaints of hematuria which was diagnosed due to muscle invasive papillary urothelial carcinoma of urinary bladder. Metastatic work-up revealed simultaneous presence of locally advanced gastric adenocarcinoma. He was treated with TURBT for the bladder cancer and was planned for radical gastric resection followed by radiation to urinary bladder and stomach with concurrent chemotherapy. However, due to very advanced nature of the gastric tumor patient was treated only with palliative gastric resection followed by palliative radiation to both urinary bladder and stomach due to his poor performance status. Lack of published English literature and evidence related to such clinical entity made this an extremely rare clinical entity and treatment decision difficult.

**Key words:** Adenocarcinoma of stomach, papillary urothelial carcinoma of bladder, radiotherapy

## INTRODUCTION

Urinary bladder cancer is the second most common genitourinary malignancy in the United States,<sup>[1]</sup> and adenocarcinoma of stomach is a very common cancer worldwide causing high mortality and morbidity.<sup>[2]</sup> Whereas the individual cancers are very common, synchronous occurrence of these two entities is extremely rare. We report a rare case of synchronous urinary bladder and stomach cancer in a middle-aged Asian man, who was managed with surgical resection and radiotherapy. To the best of our knowledge, this is the fifth reported case of synchronous urinary bladder and gastric cancer, and the second reported case of synchronous dual malignancies involving urinary

bladder and stomach, as all other previously reported cases were also associated with some other malignancy,<sup>[3-5]</sup> except for one case.<sup>[6]</sup>

## CASE REPORT

A 57-year-old male farmer, without any significant medical comorbidities, addiction, or family history of malignancy presented with 3 months history of hematuria associated with burning micturition without any other significant symptom. Initial pelvic ultrasonography showed 50 × 22-mm solid mass in left posterolateral wall of urinary bladder with left-sided moderate uretero-hydronephrosis. Cystoscopy showed a large friable papillary mass at the posterolateral aspect of bladder reaching up to the left ureteric orifice. Contrast-enhanced CT (CECT) scan of abdomen with CT urography showed 58 × 25 mm heterogeneously enhancing mass arising from left posterolateral wall of bladder protruding into the lumen with minimal perivesical fat stranding and maintained fat plane with other structures. The mass has involved the bilateral vesicoureteric junction (VUJ) causing left-sided moderate proximal hydroureteronephrosis [Figure 1].

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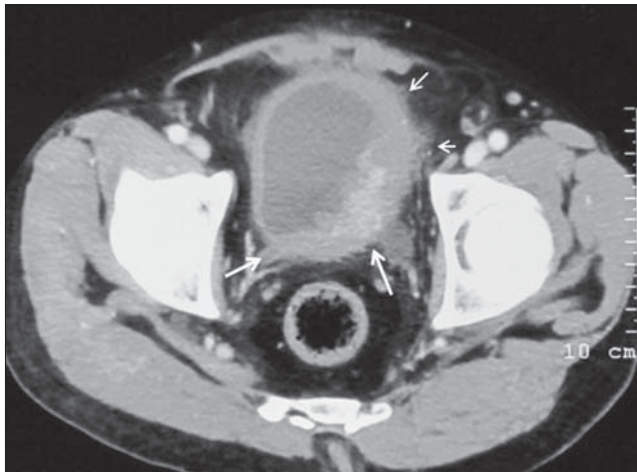
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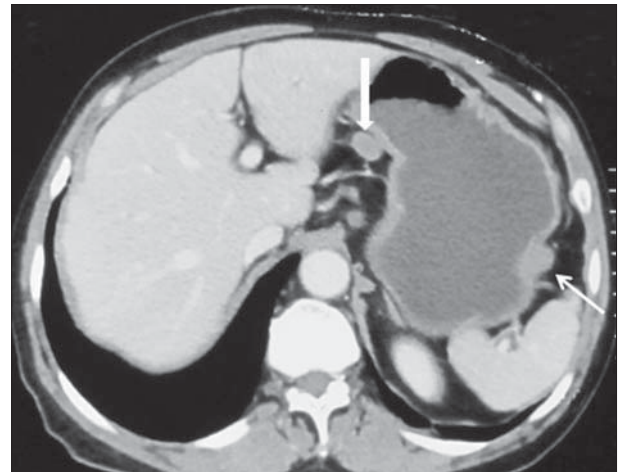
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An incidentally detected finding was focal enhancing thickening of body of stomach along the greater curvature of stomach with multiple enlarged perigastric and gastrohepatic lymph nodes [Figure 2]. There was no retroperitoneal lymphadenopathy, ascitis, and hepatic metastasis. Upper GI endoscopy showed a large ulcerative mass along the greater curvature. Transurethral resection of bladder tumor (TURBT) with maximal tumor resection was performed and the histopathology showed a tumor composed of papillae and fused papillae lined by dysplastic transitional epithelium showing loss of polarity, prominent nucleoli in most of the cells, and a few atypical mitosis along with mucinous areas. There was invasion of lamina and muscularis along with lymphoid aggregates and mixed inflammatory cell infiltrate favoring muscle invasive high-grade papillary urothelial carcinoma [Figure 3]. Endoscopy-guided biopsy from gastric mass showed a tumor composed of infiltrating acini. These glands

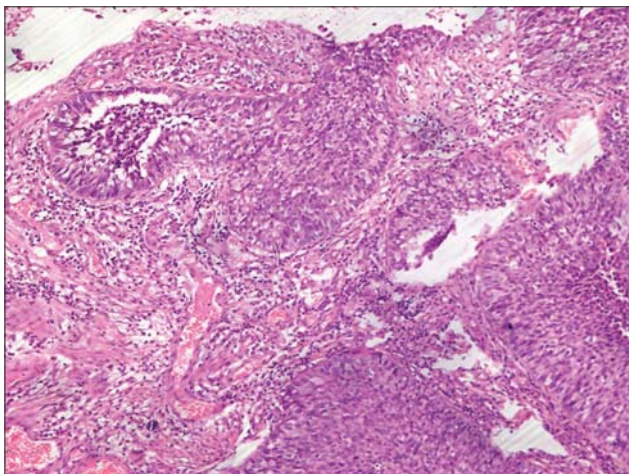
are lined by atypical columnar cells with pleomorphic hyperchromatic nuclei, coarse chromatin, conspicuous nucleoli, and moderate amount of cytoplasm favoring gastric adenocarcinoma [Figure 4]. He was diagnosed with carcinoma urinary bladder with incidentally detected synchronous gastric carcinoma. Post-TURBT he was planned for surgical resection of the gastric tumor. Intraoperatively a 4-cm greater curvature tumor was found with large matted lymph nodes along splenic hilum, left gastric artery, and gastroepiploic arcade. In view of the extensive and unresectable tumor, a palliative gastric resection was performed. Histopathology of the resected specimen showed dysplastic lining mucosa and infiltration of irregular atypical glands in the lamina and muscularis mucosa, focally extending to the radial margin. In view of the muscle invasive high grade carcinoma of the bladder and advanced gastric carcinoma with palliative resection, the patient was planned for concurrent chemoradiation to



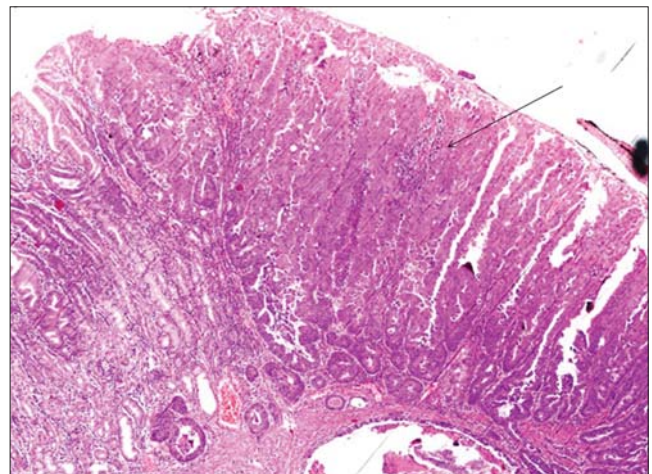
**Figure 1:** Axial contrast-enhanced CT of the pelvis, showing wall thickening and mass lesion involving the left postero-lateral wall of the urinary bladder, with perivesical fat stranding (small arrows) and involvement of bilateral VUJ (arrows)



**Figure 2:** Axial contrast-enhanced CT of abdomen, showing wall thickening (arrow) involving the greater curvature of stomach with associated gastro-hepatic (block arrow) lymph nodes



**Figure 3:** Section from TUR bladder chips showing high grade infiltrating papillary urothelial carcinoma with fused papillae lined by dysplastic transitional epithelium showing loss of polarity (H and E,  $\times 100$ )



**Figure 4:** Section from partial gastrectomy specimen showing dysplastic lining mucosa (arrow) and infiltration of irregular atypical glands in the lamina and muscularis mucosa (H and E,  $\times 100$ )

bladder and stomach simultaneously. However, on the day of radiotherapy simulation, his performance status was not suitable for concurrent chemoradiation to both the sites and keeping in mind the advanced nature of the disease, he was planned for radiotherapy alone to both urinary bladder and stomach with a palliative intent. CT-based 3D planning was used for both the sites. Planning CECT scan was done in supine position with empty bladder and stomach. For generating the clinical target volume (CTV) for bladder, a uniform margin of 2 cm around empty bladder was given. For generating CTV for stomach, a 1-cm uniform margin was given around any visible gross primary and nodal disease. Planning target volume (PTV) was given as per our institute protocol. Sixty-four Gy in 32 fractions external beam radiation over six and half week was delivered to PTV bladder and 45 Gy in 25 fractions over 5 weeks was delivered to PTV stomach. During radiation, the patient developed GrIII anemia and GrIII diarrhea which was managed efficiently, with conservative approach. Two months after completion of radiation, the patient is free from urinary and gastric symptoms and presently under regular follow-up.

## DISCUSSION

Urinary bladder cancer is the second most common genitourinary malignancy and cause of death from genitourinary malignancies in the United States. Tobacco is one of the very important risk factors supposed to be associated with its development.<sup>[1]</sup> Most of the bladder cancers are transitional cell carcinoma (TCC) and in endemic areas associated with bilharziasis. Both stage and grade are important in management of bladder cancer. Muscle invasive bladder cancer is usually managed either by radical cystectomy or bladder preserving approach using maximum TURBT, radiotherapy, and chemotherapy.<sup>[7]</sup> In patients unfit for radical cystectomy, bladder preservation approach is a standard management procedure.

Adenocarcinoma of stomach is a very common cancer worldwide causing high mortality. Although the incidence of stomach cancer has been declining in many parts of the world, the incidence of proximal stomach or gastroesophageal junction carcinoma has been showing a rising trend worldwide since 1980.<sup>[2,8]</sup> Adenocarcinoma is the most common pathologic variant and comprises almost 90-95% of gastric cancers.

The main treatment of gastric carcinoma is surgical resection of all gross and possible microscopic disease. Surgical procedure widely varies between different parts of the world particularly between the Western countries and Japan in relation to extent of surgical resection. Whereas the Japanese practice is an extended lymph node dissection, the western practice is of a limited lymph node dissection.

For unresectable tumor due to medical reasons or extensive disease, the standard of care is radiation therapy with concomitant chemotherapy usually with 5FU.<sup>[9]</sup>

Synchronous carcinoma of urinary bladder and stomach is very rare and there is a scarcity of literature. A detailed Pubmed search using the key words 'bladder' and 'urinary bladder' and 'gastric' and 'stomach' and 'synchronous' and 'cancer' and 'carcinoma' could not find many articles on this issue. As per the available search result this is perhaps the fifth reported case of synchronous occurrence of urinary bladder and stomach cancer.<sup>[3-6]</sup> However, all the previously reported cases were also associated with some other synchronous malignancies, such as lung cancer,<sup>[3]</sup> malignant pleural mesothelioma,<sup>[4]</sup> esophageal melanoma, and colonic cancer;<sup>[5]</sup> except one of the reported case, which was not associated with any other neoplasm but with amyloidosis.<sup>[6]</sup>

## CONCLUSIONS

Although the individual cancers are very much common, it is the synchronous occurrence which made the patient's clinical scenario unique and posed difficulty in taking proper treatment decisions due to poor performance status to tolerate radical chemoradiation including both the sites simultaneously. We recommend a routine complete diagnostic evaluation of patients presenting with vague upper gastrointestinal symptoms to rule out any rare possibility of cancer and also suggest the use insight into the disease and clinical condition to decide treatment modality.

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