

# Sarcomatoid urothelial carcinoma with disseminated metastases: an aggressive and rare cancer

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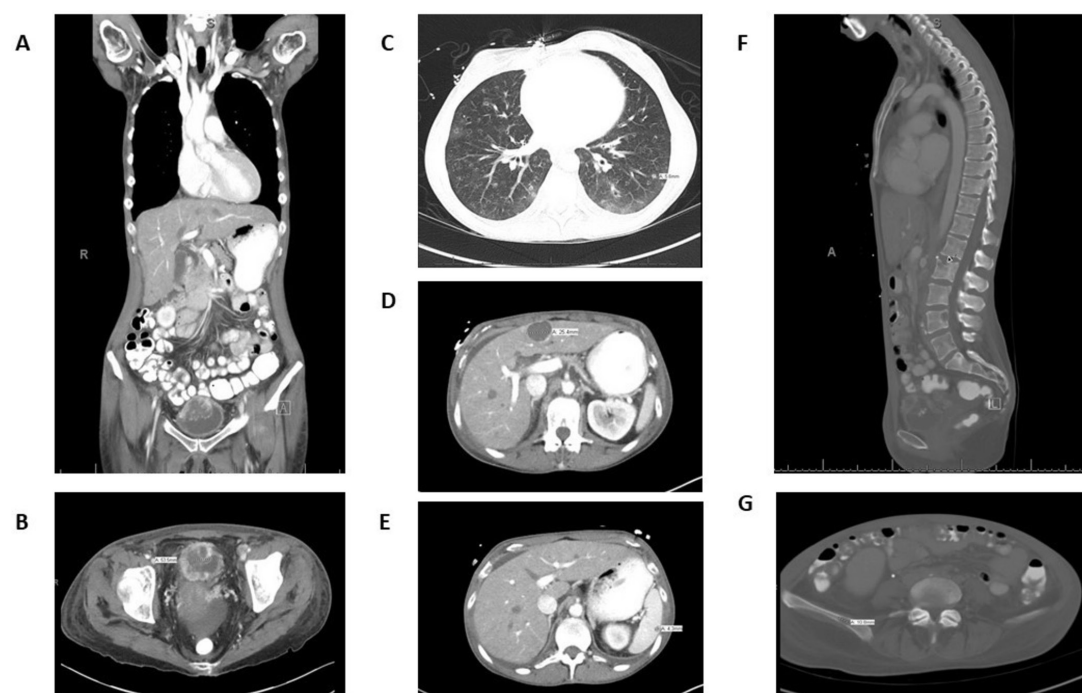
## DESCRIPTION

A 48-year-old woman with medical history of chronic obstructive pulmonary disease (COPD), hypertension and chronic tobacco abuse. She presented to the emergency department with new-onset supraventricular tachycardia. She denied any urological symptoms. Physical examination revealed a cachectic woman but otherwise unremarkable. Her laboratory investigations showed hypercalcaemia at 1.58 (Ref: 1.1 to 1.3mmol/L) with low 25-Hydroxy low vitamin D 25-Hydroxy at 5.6 at 5.6 (Ref: 30 to 100 ng/mL), low parathyroid hormone level <6.3 (Ref: 14 to 72 pg/mL) and elevated Parathyroid-related protein 83 (Ref: 14 to 27 pg/mL).

She had a chest, abdomen and pelvis CT scan to rule out any underlining malignancy. The results revealed significant enhancement and nodular urinary bladder wall with intraluminal hyperdensities. In addition, there were innumerable small cavitating lung nodules scattered

throughout the lung fields, hypodense lesion involving the right hepatic lobe, splenic nodule, disseminated lymphadenopathy, osseous diseases involving L4, L2, T8 and compression deformity with superior endplate fracture of L2 without retropulsion. Furthermore, multiple small foci of lytic disease were also seen in rest of the vertebral column, osseous pelvis, sacrum and iliac bones (figure 1).

The patient underwent cystoscopy which showed large bladder mass covering the anterior wall and the dome of the bladder. The mass was irregular and friable and measured more than 6×6 cm. She had transurethral resection of the bladder and the combined immunomorphological profiles were consistent with invasive carcinoma with extensive sarcomatoid differentiation (figures 2 and 3). The final diagnosis was likely disseminated metastases from a sarcomatoid urothelial carcinoma. Unfortunately, the patient died before further biopsies and treatment made.

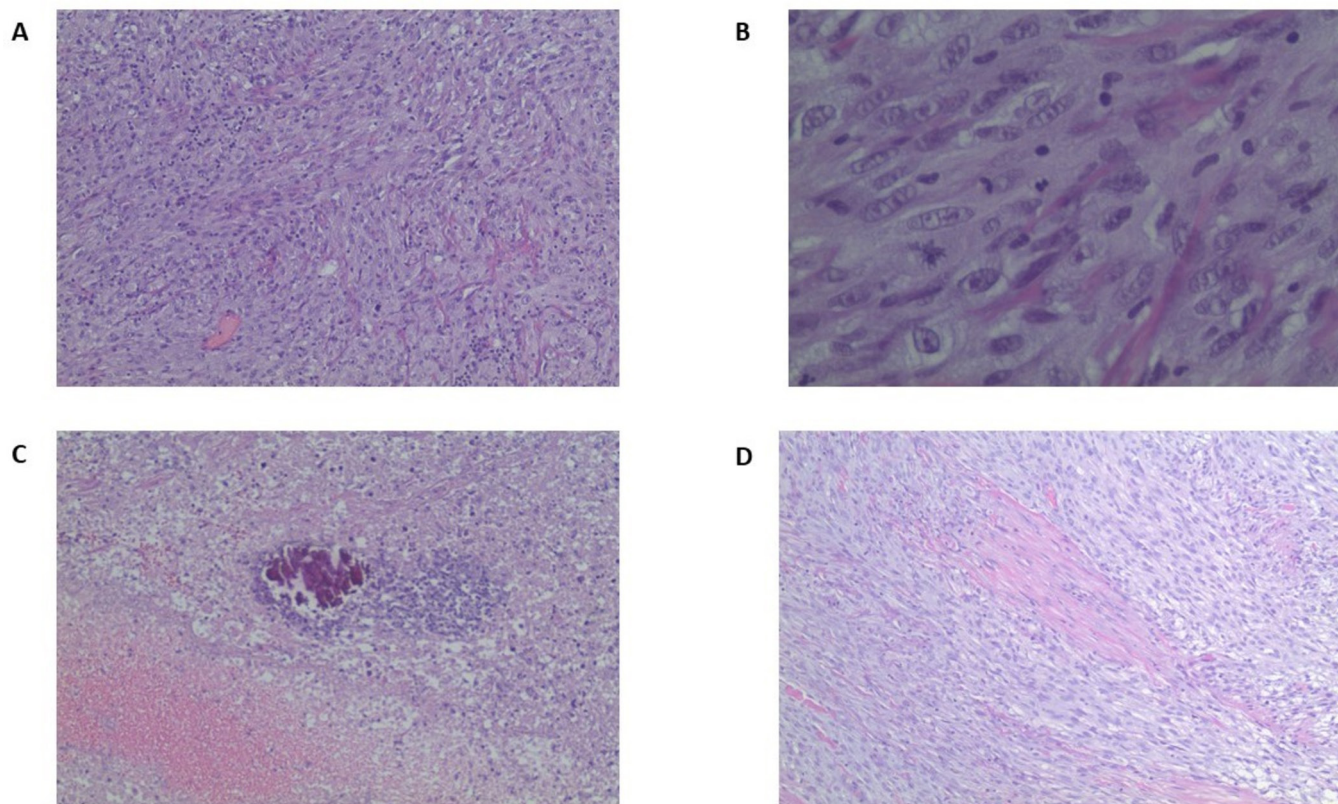


**Figure 1** CT scans. (A) Coronal section showing the nodular urinary bladder wall with intraluminal hyperdensities. (B) Transverse section showing the nodular urinary bladder wall with intraluminal hyperdensities. (C) Transverse section showing innumerable small cavitating lung nodules scattered throughout the lung fields. (D) Transverse section showing hypodense lesion involving the right hepatic lobe. (E) Transverse section showing splenic nodule. (F) Sagittal section showing lytic lesions of the lumbar spine. (G) Transverse section showing iliac bones lytic lesions.



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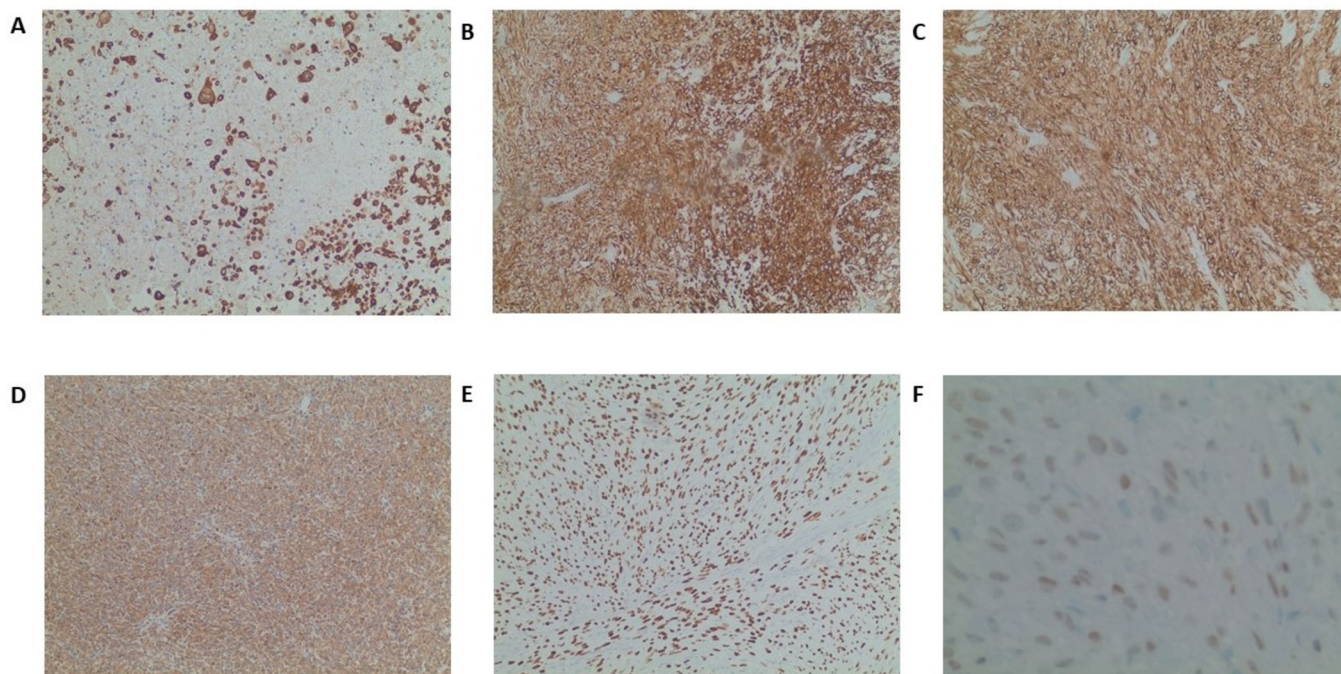
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**Figure 2** Morphological profile. (A) 10x H&E—Malignant appearing spindle cells. (B) 40x H&E—Spindle cells with severe nuclear atypia and mitotic figures. (C) 10x H&E—Necrosis with calcification. (D) 10x H&E—Tumour involving muscularis propria.

Sarcomatoid urothelial carcinoma is a rare and aggressive type of urothelial carcinoma with poor prognosis and usually associated with cigarette smoking.<sup>1</sup> The tumour has both epithelial and mesenchymal components, hence

previously termed carcinosarcoma.<sup>2</sup> Therefore, the diagnosis requires a board panel of immunohistochemical stains to demonstrate both components which represent the process of epithelial-to-mesenchymal transition.<sup>2</sup> There is



**Figure 3** Immunohistochemical stains. (A) Positive for Cytokeratin AE1/AE3. (B) Positive for Cytokeratin 903. (C) Positive for Cytokeratin MNF116. (D) Positive for vimentin. (E) Positive for p63. (F) Positive for GATA3.



## Learning points

- ▶ Physician and pathologist should be aware of the aggressive sarcomatoid urothelial carcinoma as it carries a worse prognosis in comparison to the common urothelial carcinoma.
- ▶ Increased parathyroid-related protein and hypercalcaemia can be the first manifestation of sarcomatoid urothelial carcinoma.
- ▶ The diagnosis of sarcomatoid urothelial carcinoma requires demonstration of both epithelial and mesenchymal components using a variety of immunohistochemical stains.

still no standardised therapeutic protocol available because of the small reported cases and lack of clinical trials.<sup>3</sup>

**Contributors** BK planned, designed, wrote and critically revised the manuscript. In addition, he had an important role to facilitate the work between different authors.

He also did the literature review and images selection and preparation. AK did the literature review and he also wrote and revised the manuscript. TK and GB wrote and critically revised the manuscript. TK also participated in images and pathological description. GB also played a vital role in writing the learning points.

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**Patient consent** Obtained.

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