

Imaging findings of small cell neuroendocrine carcinoma of the ureter

Gui-Wu Chen¹, Yuhuan Xie¹, Wen-Qin Liu¹, Xiao-Min Liao¹, and Zhi-zhong He¹

¹Dongguan People's Hospital

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Abstract

Small cell neuroendocrine carcinoma (SCNEC) of the ureter is a rare malignant tumor originating from the metaplasia of urothelial cells. This report presents a case of ureteral SCNEC that was preliminarily disclosed by transabdominal ultrasonography; thereafter, transrectal ultrasonography and magnetic resonance urography were performed to characterize the focus.

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Guiwu Chen¹, Yuhuan Xie¹, Wenqin Liu¹, Xiaomin Liao², Zhizhong He¹

¹Department of Ultrasound, Affiliated Dongguan Hospital, Southern Medical University, Dongguan People's Hospital, 523000 Dongguan, China

²Department of Pathology, Affiliated Dongguan Hospital, Southern Medical University, Dongguan People's Hospital, 523000 Dongguan, China

Corresponding Author: Yuhuan Xie

Department of Ultrasound, Affiliated Dongguan Hospital, Southern Medical University, Dongguan People's Hospital, No.78, Wandao Road, Dongguan City, Dongguan 52300, Guangdong Province, China.

Telephone Number: +86 13713130989

Fax Number: 0769-28636378

E-mail Address: xieyuhuan0989@163.com

First Author: Guiwu Chen

Telephone Number: +86 13427808564

E-mail Address: chenguiwu_6996@163.com

ORCID ID: 0000-0003-2805-9007

Data Availability Statement

The data used to support the findings of this study are available from the corresponding author upon request.

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Conflicts of Interest Disclosure

The authors declare that there is no conflict of interest.

Ethics of Approval Statement and Clinical Trial Registration

The corresponding author had the written consent of the patient to use the data for publication.

Patient Consent Statement

The patient agreed to use his/her information and samples (including blood, urine, excrement, and excised tissue) for medical research for non-commercial purposes under the premise of strict privacy protection.

Permission to Reproduce Material from Other Sources

No material from other sources was applied.

Acknowledgment

Not applicable.

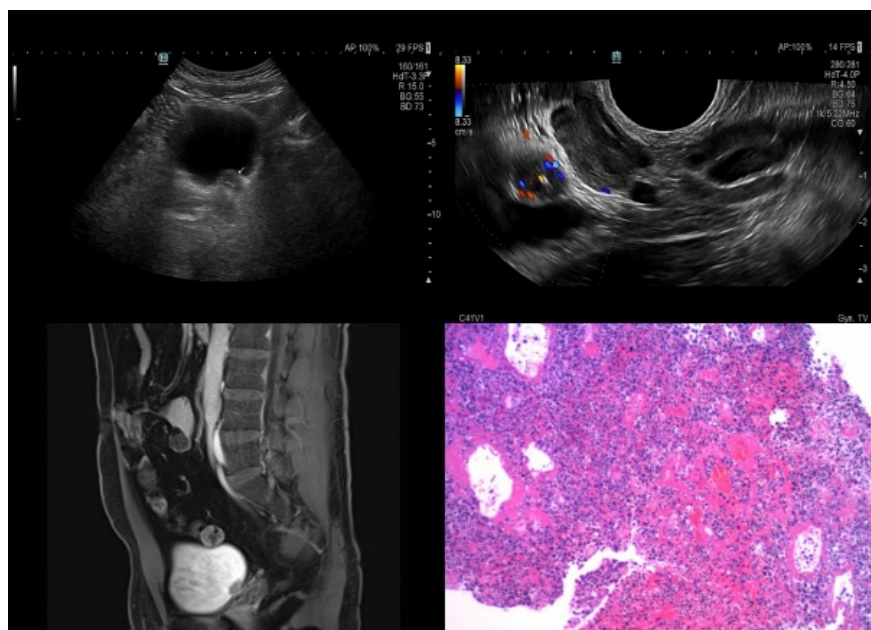
Detailed author's contribution

Guiwu Chen wrote the original draft of this clinical image and made subsequent revisions. Wenqin Liu and Zhizhong He participated in the ultrasound and MRI images analysis and interpretation. Xiaomin Liao participated in the pathology images analysis and interpretation. Yuhuan Xie assisted in the revision and supervised the overall production of this report.

Key Clinical Message (Graphical Abstract Text)

Most small cell neuroendocrine carcinomas originating in the urinary system are located in the bladder and prostate, whereas they rarely arise from the ureter. This report presents a case confirmed with ultrasonography, magnetic resonance urography, and pathology.

Graphical Abstract Image



Abstract

Small cell neuroendocrine carcinoma (SCNEC) of the ureter is a rare malignant tumor originating from the metaplasia of urothelial cells. This report presents a case of ureteral SCNEC that was preliminarily dis-

closed by transabdominal ultrasonography; thereafter, transrectal ultrasonography and magnetic resonance urography were performed to characterize the focus.

Keywords

small cell neuroendocrine carcinoma, tumor of the urinary system, ultrasonography, magnetic resonance urography

A 35-year-old man with a history of backache and hematuria over one week was admitted to our hospital. Transabdominal ultrasonography revealed dilation of the left renal collecting system and upper ureter due to blockage of the lower ureter by a hypoechoic mass (Figure 1A). Coincidentally, the mass was located in the pelvic cavity next to the rectum. Transrectal ultrasonography was performed; a thickened lower ureter wall whose structure was disordered and stiff and additional details of the mass were found (Figure 1B). Furthermore, magnetic resonance urography (MRU) suggested that the ureteral mass was a carcinoma due to the lymph nodes being scattered around it (Figure 1C). Ultimately, the patient underwent endoscopic examination and surgical excision. Pathological examination confirmed SCNEC (Figure 1D).

SCNEC of the ureter is a highly malignant tumor originating from the metaplasia of urothelial cells with or without neuroendocrine function.¹ Due to its rare nature, ureteral SCNEC is always misdiagnosed or escapes diagnosis in the early stage and has a poor prognosis in the later stage on imaging.² However, SCNECs are usually detected by computed tomography but rarely by ultrasonography and MRU, which exhibited more features of ureteral SCNEC, including its composition, pattern, and blood flow.

References

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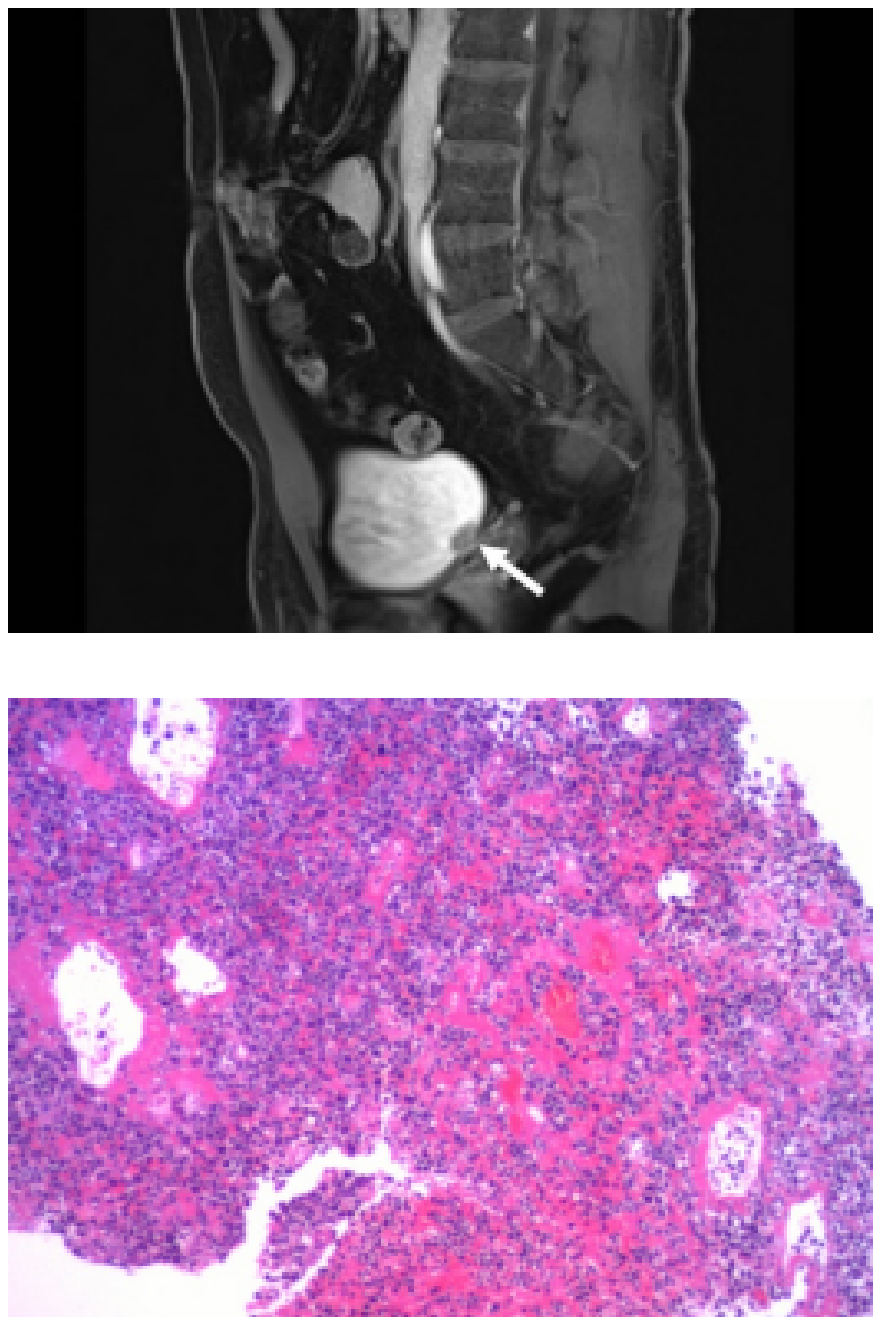


Figure 1. Small cell neuroendocrine carcinoma of the ureter. (A) Transabdominal ultrasonography showed a hypoechoic mass located in the lower ureter (arrow) that was uniform on internal echo with an undefined boundary. (B) Transrectal ultrasonography showed that the blood flow of the mass was abundant (arrow), and the ureter wall around it was abnormal. (C) Magnetic resonance urography showed the mass had a low signal filling defect (arrow), the upper edge of which was cup-shaped. (D) The cells proliferated in a nest shape and grew infiltratively with obvious atypia, the nuclei of which were large and deeply stained.

