

# A rare case of urachal carcinoma with multiple lung metastasis that required differentiation from primary lung carcinoma

Kentaro Suzuki<sup>1</sup> | Yoshiro Kai<sup>1</sup>  | Masayuki Matsuda<sup>1</sup> | Kazuhide Horimoto<sup>2</sup> |  
Kazunori Iwai<sup>2</sup> | Masato Takano<sup>3</sup> | Masahito Yoshii<sup>4</sup> | Shigeo Muro<sup>5</sup> 

<sup>1</sup>Department of Respiratory Medicine, Minami-Nara General Medical Center, Nara, Japan

<sup>2</sup>Department of Internal Medicine, Yoshino Hospital, Nara, Japan

<sup>3</sup>Department of Diagnostic Pathology, Minami-Nara General Medical Center, Nara, Japan

<sup>4</sup>Department of Urology, Minami-Nara General Medical Center, Nara, Japan

<sup>5</sup>Department of Respiratory Medicine, Nara Medical University, Nara, Japan

## Correspondence

Yoshiro Kai, Department of Respiratory Medicine, Minami-Nara General Medical Center, 8-1 Fukugami, Oyodo-cho, Yoshino-gun, Nara 638-8551, Japan.  
Email: y-kai@eco.ocn.ne.jp

Associate Editor: Belinda Miller

## Abstract

Urachal carcinoma is a rare malignancy of all bladder carcinomas. Metastatic lung tumours showing multiple nodules are rare without a local recurrence. We describe a case of multiple metastatic lung cancer from urachal carcinoma that required differentiation from primary lung cancer.

## KEYWORDS

adenocarcinoma, bladder, lung metastasis, urachal cancer

## CLINICAL IMAGE

Urachal cancer, a rare malignancy, constitutes <1% of all bladder cancers.<sup>1</sup> The prognosis of metastatic urachal cancer is extremely poor.<sup>2</sup> Cases of distant metastasis without local recurrence alone are relatively rare. A 63-year-old man was diagnosed with urachal carcinoma; he had macroscopic haematuria and underwent partial cystectomy with en bloc removal of the tumour in September 2018. Chest computed tomography performed 2 years and 4 months post-surgery revealed multiple nodules in the right upper lobe, left lingular lobe and left lower lobe (Figure 1A–D). The multiple tumour size increased gradually during a 6-month follow-up (Figure 1E–H). Serum carcinoembryonic antigen levels increased from 2.83 to 6.42 ng/ml, and cancer antigen 19-9 levels increased from 31.9 to 121.6 U/ml. Differential diagnosis at this stage included primary lung cancer and its metastases or urachal carcinoma metastatic to the lung. Histological findings of transbronchial lung biopsy specimen

were highly similar to those of the previously resected urachal carcinoma (Figure 2A,B). Moreover, the tumour cells were positive for CK7, CK20 and CDX2 (Figure 2C–E). Based on pathological and radiographic findings, we diagnosed lung metastases from urachal carcinoma. This is a rare case showing nodules as lung metastases from urachal carcinoma.

## ACKNOWLEDGMENT

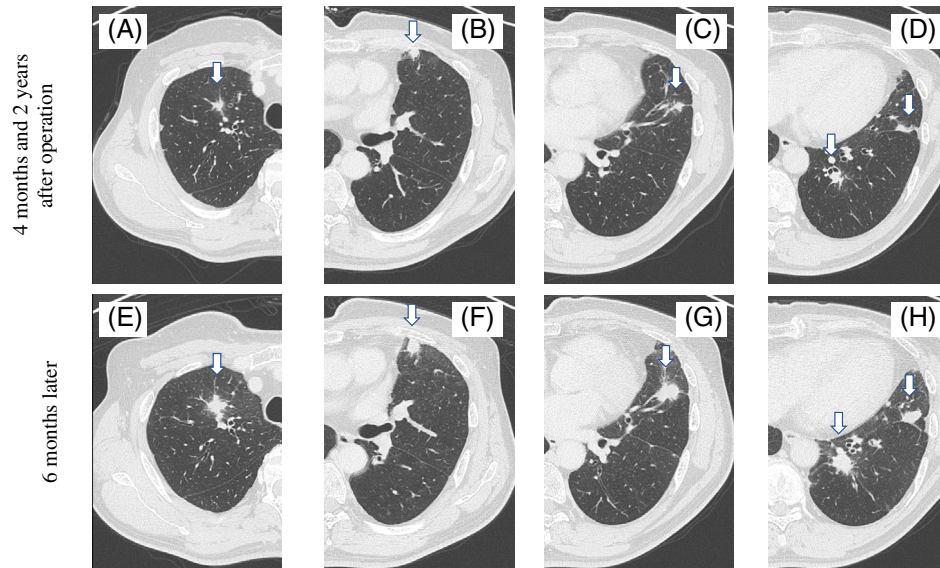
The authors would like to thank Enago ([www.enago.jp](http://www.enago.jp)) for the English language review.

## CONFLICT OF INTEREST

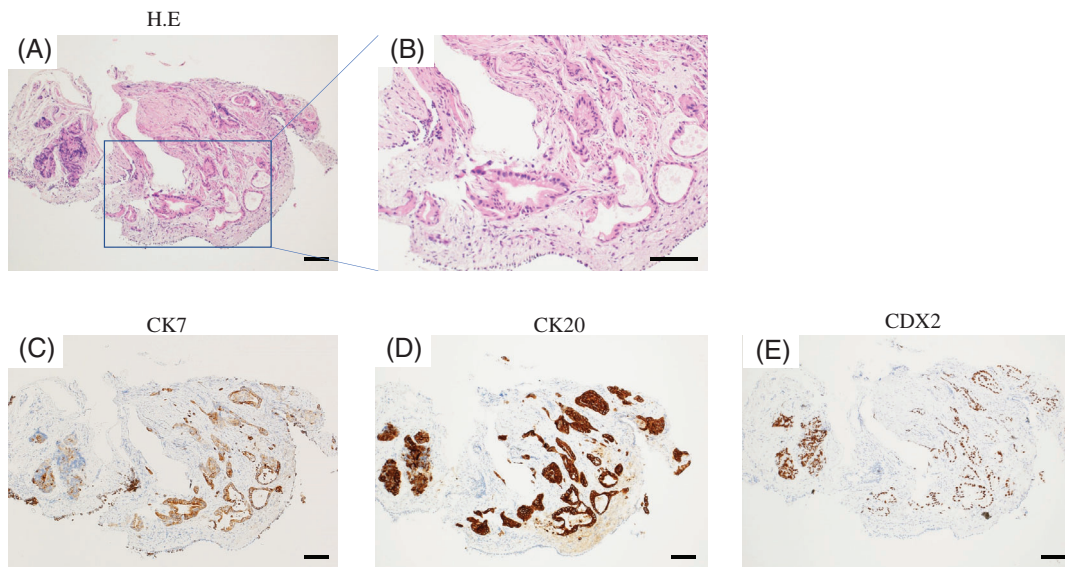
None declared.

## AUTHOR CONTRIBUTION

Kentaro Suzuki and Yoshiro Kai wrote the manuscript. All authors contributed to editing of the manuscript and approved the final version of the manuscript.



**FIGURE 1** Computed tomography findings showing multiple nodules in the right upper lobe (A, white arrow), the left upper lobe (B–D, white arrows) and the left lower lobe (D, white arrow). After 6 months, the number of multiple nodules was increased (E–H, white arrows)



**FIGURE 2** Pathological examination of the specimen obtained from transbronchial lung biopsy. (A, B) Haematoxylin and eosin staining showing adenocarcinoma. Immunohistological examination by (C) CK7, (D) CK20 and (E) CDX2 showed positive result. Scale bar 100  $\mu$ m

#### DATA AVAILABILITY STATEMENT

All data generated or analyzed during this study are included in this article. Further enquiries can be directed to the corresponding author.

#### ETHICS STATEMENT

Ethics approval was not required for this case report. All patient's data and images are de-identified.

#### ORCID

Yoshiro Kai  <https://orcid.org/0000-0001-6197-5176>  
Shigeo Muro  <https://orcid.org/0000-0001-7452-9191>

#### REFERENCES

- Sheldon CA, Clayman RV, Gonzalez R, Williams RD, Fraley EE. Malignant urachal lesions. *J Urol.* 1984;131:1–8.
- Ashley RA, Inman BA, Sebo TJ, Leibovich BC, Blute ML, Kwon ED, et al. Urachal carcinoma: clinicopathologic features and long-term outcomes of an aggressive malignancy. *Cancer.* 2006;107:712–20.

**How to cite this article:** Suzuki K, Kai Y, Matsuda M, Horimoto K, Iwai K, Takano M, et al. A rare case of urachal carcinoma with multiple lung metastasis that required differentiation from primary lung carcinoma. *Respirology Case Reports.* 2021;10:e0890. <https://doi.org/10.1002/rcr2.890>