metastasis and invasion and became resistant to chemothera-
pies. Evidence for this is a part of the carcinosarcoma that
showed AE1/3 positivity on immunostaining and that it had
the same immunostaining characteristics as mucinous adeno-
carcinoma (Fig. 3e). In addition, AE1/3-positive adenocarci-
oma was found in many lymphatic vessels near the
carcinosarcoma of the primary and metastatic sites (Fig. 3f).
Autopsy also revealed that carcinosarcomas predominated
over mucinous urethral adenocarcinoma at most metastatic
sites. Chemotherapies appear to have been successful for
mucinous adenocarcinoma but not for carcinosarcoma.

We have considered other treatment modalities aside from
chemotherapy. In this case, negative results for microsatel-
lite instability were obtained, and immune checkpoint inhib-
itors were not indicated. In addition, immune checkpoint
inhibitors may be ineffective in urethral adenocarcinoma
because bladder adenocarcinoma has a low frequency of
gene mutations and a low level of PD-L1 expression.11 By
contrast, EGFR inhibitors may be effective for mucinous
urethral adenocarcinoma. Bryce et al.4 reported a case in
which multiple-gene panel testing revealed strong amplifica-
and immunostaining of EGFR, contributing to success-
ful treatment with erlotinib. In this case as well, EGFR
immunostaining was strongly positive for mucinous urethral
adenocarcinoma (Fig. 3c). We recommended multiple-gene
panel testing for the administration of erlotinib; however,
the patient refused testing because of financial and location-
related issues.

Conclusion
It is important to distinguish mucinous urethral adenocarci-
noma from other adenocarcinomas, such as prostate adenocarci-
noma, mucinous prostate adenocarcinoma, and secondary
cancer. In our rare case of coexisting mucinous urethral and
prostate adenocarcinomas, difficulties in diagnosis and treat-
ment arose from histopathological similarities. Thus, when
there is a lesion adjacent to the urethra, pathologists should
consider immunostaining for PSA, CEA, CK7, CK20, and
CDX2 to detect prostate cancer, which is rare.1 Liaison
between the pathologist and the clinician could ensure early
diagnosis in such cases. Finally, because no definitive conclu-
sions can be drawn from this single case report, further stud-
ies based on case accumulation are warranted.

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Conflict of interest
The authors declare no conflict of interest.

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Editorial Comment

Editorial Comment to Systemic treatment for coexisting mucinous urethral
adenocarcinoma and prostate adenocarcinoma

The coexistence of mucinous urethral and prostate adenocar-
cinoma is challenging to diagnose because of its rarity. Nezu
et al. reported a case of coexisting mucinous urethral and
prostate adenocarcinoma managed with systemic treatment.1
They initially diagnosed a patient with prostate adenocarcin-
oma. However, hormone therapy and standard chemotherapy
for prostate adenocarcinoma were ineffective. Re-biopsy
showed mucinous adenocarcinoma, and they changed the hor-
mone drug to a colon cancer regimen, followed by a bladder
cancer regimen. Despite their best efforts, the patient died
14 months after clinical presentation. Autopsy implied that
epithelial-mesenchymal transition had occurred in the meta-
static lesions of the urethral adenocarcinoma.
Mucinous urethral adenocarcinoma has no standard treatment approach. The authors suggested that erlotinib might be effective because epidermal growth factor receptor (EGFR) immunostaining was strongly positive in this case. Bryce et al. reported a case of mucinous urethral adenocarcinoma in which targetable EGFR amplification led to successful treatment with erlotinib. Before erlotinib, the patient received both traditional bladder cancer and colon cancer regimens. However, the bladder cancer regimen led to only a brief response with severe side effects, and the colon cancer regimen had similar toxicity. Targeted therapy of erlotinib was effective for a full year and provided the highest quality of life for the patient. Genomic tumor analysis would offer a tool to provide precise data to guide the appropriate treatment of these rare cases. EGFR can be tested for in future mucinous urethral adenocarcinoma cases to inform treatment decisions.

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The authors declare no conflict of interest.

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