Author Contribution

Eri Fukagawa: Conceptualization; Data curation; Investigation; Project administration; Visualization; Writing-original draft; Writing-review & editing. Fumiyasu Endo: Conceptualization; Data curation; Project administration; Supervision. Yoko Kyono: Data curation; Writing-review & editing. Jun Hashimoto: Data curation; Writing-review & editing. Kazunori Hattori: Data curation; Supervision; Writing-review & editing.

Conflict of interest

The authors declare no conflict of interest.

Approval of the research protocol by an Institutional Reviewer Board

The protocol for this research project has been approved by a suitably constituted Ethics Committee of St. Luke's International Hospital (Approval No. 21-R045).

Informed consent

Informed consent was obtained from the subject.

Registry and the registration no. of the study/trial

Not applicable.

References

- Ferlay J, Ervik M, Lam F et al. Global Cancer Observatory: Cancer Today. International Agency for Research on Cancer, Lyon, France, 2021. [Cited 23 Apr 2021]. Available from URL: https://gco.iarc.fr/today.
- 2 SEER*Explorer: An interactive website for SEER cancer statistics. Surveillance Research Program, National Cancer Institute. [Cited 23 Apr 2021.] Available from URL: https://seer.cancer.gov/explorer/.

Editorial Comment

Editorial Comment to Testicular metastasis from urothelial carcinoma of the bladder

Among the clinically organ-confined genitourinary malignancies, invasive bladder cancer is one of the most lethal diseases, nearly half of which recur even after radical surgery.¹ For the treatment of recurred metastatic urothelial cancer, therapy with the immune checkpoint inhibitor pembrolizumab is being rapidly introduced in clinical practice.¹ Enfortumab vedotin, which is a novel antibody drug conjugate anticancer agent, has also very recently been approved as a third-line standard medical therapy.² The most frequent visceral metastatic site from

- 3 Binkley WF, Seo IS. Metastatic transitional cell carcinoma of the testis. A case report. *Cancer* 1984; 54: 575–8.
- 4 Eisenhauer EA, Therasse P, Bogaerts J et al. New response evaluation criteria in solid tumours: revised RECIST guideline (version 1.1). Eur. J. Cancer 2009; 45: 228–47.
- 5 González-Peramato P, Paniagua R, Nistal M. Secondary testicular tumors. *Eur. Urol.* 1989; 16: 185–8.
- 6 Oppong FC, Rundle JH. Bilateral testicular secondaries from transitional cell carcinoma of the bladder. Br. J. Urol. 1991; 68: 430.
- 7 Doherty AP, Smith R, Paradinas FJ, Bower MD, Ramsay JW. A case of metastatic transitional cell carcinoma in the testis histologically mimicking intratubular germ cell neoplasia. *Br. J. Urol.* 1996; **78**: 137–8.
- 8 Morgan K, Srinivas S, Freiha F. Synchronous solitary metastasis of transitional cell carcinoma of the bladder to the testis. Urology 2004; 64: 808–9.
- 9 Thwaini A, Kaluba J, Shergill I, Kumar R, Lewi H. Testicular metastasis of transitional cell carcinoma of the urinary bladder: an unusual site. *Int. J. Urol.* 2006; 13: 1136–7.
- 10 Mahmalji W, Jain S, Stower M. A rare cause of scrotal swelling: transitional cell carcinoma of the bladder presenting as a testicular metastasis. *Adv. Urol.* 2011; **2011**: 1–3.
- 11 Nouhaud F-X, Di Fiore F, Noël N, Gobet F, Pfister C. Scrotal metastasis from a nonmuscle-infiltrative bladder cancer: a surprising clinical evolution. *Urology* 2012; 80: e37–8.
- 12 Kozak GN, Field NC. Metastatic transitional cell carcinoma of the bladder to the testis: a case report. *Case Rep. Urol.* 2012; 2012: 1–2.
- 13 Kiely G, Kavanagh L, Bolton D, Lawrentschuk N. Urothelial carcinoma of the bladder with asynchronous metastases to both testes. *Urol. Ann.* 2013; 5: 218.
- 14 Turo R, Smolski M, Hatimy U et al. A rare case of testicular metastasis of bladder transitional cell carcinoma. Can. Urol. Assoc. J. 2014; 8: 181.
- 15 Saemundsson Y, Simoulis A, Liedberg F. Sanctuary testicular bladder cancer metastasis 10 years after radical cystectomy and adjuvant chemotherapy. *Clin. Genitourin. Cancer* 2018; 16: e1097–9.
- 16 Wu K, Fan J, Liang H, Yao Y, He D. Rapid testicular metastasis from bladder transitional urothelial carcinoma after radical cystoprostatectomy. *Medicine* 2019; 98: e18000.
- 17 Howard DE, Hicks WK, Scheldrup EW. Carcinoma of the prostate with simultaneous bilateral testicular metastases: case report with special study of routes of metastases. J. Urol. 1957; 78: 58–64.
- 18 Thrasher C, Beglin PM. Prostatectomy: a survey of 2,000 cases. Calif. Med. 1959; 91: 338–40.
- 19 Falkensammer C, Gozzi C, Hager M et al. Late occurrence of bilateral tuberculous-like epididymo-orchitis after intravesical bacille Calmette-Guérin therapy for superficial bladder carcinoma. Urology 2005; 65: 175.

urothelial cancer is the lung, followed by the liver and bone. Testicular metastasis from bladder cancer is truly rare.

In this issue of *IJU Case Report*, Fukagawa *et al.* reported a case of testicular metastasis from urothelial cancer of the urinary bladder in a patient with a history of holmium laser enucleation of the prostate (HoLEP) for benign prostate hyperplasia and partial penectomy for urethral cancer recurrence after radical cystoprostatectomy.³ Three years after the partial penectomy, the patient presented with painless left testicular swelling.³ He underwent left high orchiectomy, and histopathological diagnosis disclosed high-grade urothelial cancer.³ In this case, Fukagawa *et al.* supported intraluminal extension via the vas deferens because the patient had a history of HoLEP, which may have opened the ejaculatory duct and allowed malignant cells to penetrate retrogradely and also

This is an open access article under the terms of the Creative Commons Attribution License, which permits use, distribution and reproduction in any medium, provided the original work is properly cited.

a history of in situ progression of urothelial cancer to the prostatic duct in the cystectomy specimen.³

The majority of testicular tumors are germ cell cancers, which are familiar to urologists in clinical practice. Testicular metastases from other primary sites are rare, accounting for 0.1–2.4% of all testicular tumors.^{4,5} Common primary sites are the prostate (35%), lungs (18%), skin melanoma (11%), colon, and kidneys (9%), which are reported to comprise approximately 80% of primary sites.^{4,5} Although testicular metastasis from bladder cancer is truly rare, in patients with a history of prostatic invasion of bladder cancer and especially in those who also have a history of prostate surgery, clinicians must keep testicular metastasis in mind as a possibility.

Takeshi Yuasa M.D., Ph.D. 🝺

Department of Urology, Cancer Institute Hospital, Japanese Foundation for Cancer Research, Ariake, Tokyo, Japan takeshi.yuasa@jfcr.or.jp

DOI: 10.1002/iju5.12407

Conflict of interest

The author declares no conflict of interest.

References

- Yuasa T, Urakami S, Yonese J. Recent advances in medical therapy for metastatic urothelial cancer. Int. J. Clin. Oncol. 2018; 23: 599–607.
- 2 Powles T, Rosenberg JE, Sonpavde GP et al. Enfortumab vedotin in previously treated advanced urothelial carcinoma. N. Engl. J. Med. 2021; 384: 1125–35.
- 3 Fukagawa E, Endo F, Kyono Y, Hashimoto J, Hattori K. Testicular metastasis from urothelial carcinoma of the bladder: a case report. *IJU Case Rep.* 2022; 5: 79–83.
- 4 Li B, Cai H, Kang ZC, Wu H, Hou JG, Ma LY. Testicular metastasis from gastric carcinoma: a case report. World J. Gastroenterol. 2015; 21: 6764–8.
- 5 Wu XW, Zhang Y, Li YF *et al.* Testicular metastasis from urothelial carcinoma of the renal pelvis: a rare case and review of the literature. *Onco Targets Ther.* 2020; **13**: 915–20.