

from a single institute study from a longer time period, even though it would be possible to accumulate a larger number of cases.<sup>6</sup> From the results of our cases, we may infer that clamped enucleation via the transinguinal approach may confer satisfactory preservation of the testicular tissue, but also unclamped enucleation via the transscrotal approach can also be a choice for preoperatively diagnosed benign cystic tumors in infants. Fertility data in these children are awaited for validating the impact of testis-sparing surgery in future.

## Conclusions

Unclamped enucleation of testicular tumor via the transscrotal approach, which is contraindicated in most testicular tumors, can be a treatment choice exclusively for preoperatively diagnosed mature cystic teratoma in infants.

## Conflict of interest

The authors declare no conflict of interest. This retrospective study was approved by the Institutional Review Board of Hyogo College of Medicine (Study number 3048). This retrospective study was disclosed in institutional website, and patients and their guardians had chance to opt out from the study. Because of retrospective nature of the study, this study was not registered.

## Editorial Comment

### Editorial comment to Preservation of testicular tissue after enucleation of pediatric mature teratoma: A case series of 7 testes in 6 children

Prepubertal testicular tumors (PTT) differ from those of postpubertal males in that benign lesions are more common. Testis-sparing surgery should be considered if preoperative evaluation, including alpha-fetoprotein (AFP) levels and ultrasonographic findings, suggests benign PTT with salvageable normal testicular parenchyma.<sup>1</sup>

There have been only a few reports about the ultrasonographic evaluation of testicular volume after testis-sparing surgery.<sup>2,3</sup> Kanematsu *et al.* evaluated the affected testicular volume by ultrasonography with a minimum 3-year follow-up and showed a residual testicular volume of >60% of the contralateral testicular volume.<sup>4</sup> The authors should be congratulated on their work with a longer follow-up than that in the previous studies.

In addition, the authors concluded that transscrotal enucleation of the tumor without clamping the spermatic cord can be preferable for preoperatively diagnosed benign testicular

## References

- 1 Rushton HG, Belman AB, Sesterhenn I, Patterson K, Mostofi FK. Testicular sparing surgery for prepubertal teratoma of the testis: a clinical and pathological study. *J. Urol.* 1990; **144**: 726–30.
- 2 Walsh C, Rushton HG. Diagnosis and management of teratomas and epidermoid cysts. *Urol. Clin. North Am.* 2000; **27**: 509–18.
- 3 Valla JS. Valla JS for the Group D'Etude en Urologie Pédiatrique. Testis-sparing surgery for benign testicular tumors in children. *J. Urol.* 2001; **165**: 2280–3.
- 4 Ross JH, Rybicki L, Kay R. Clinical behavior and a contemporary management algorithm for prepubertal testis tumors: a summary of the Prepubertal Testis Tumor Registry. *J. Urol.* 2002; **168**: 1675–8; discussion 8–9.
- 5 Gobel U, Haas R, Calaminus G *et al.* Testicular germ cell tumors in boys <10 years: results of the protocol MAHO 98 in respect to surgery and watch & wait strategy. *Klin. Padiatr.* 2013; **225**: 296–302.
- 6 Hisamatsu E, Takagi S, Nakagawa Y *et al.* Prepubertal testicular tumors: a 20-year experience with 40 cases. *Int. J. Urol.* 2010; **17**: 956–9.
- 7 Moriya K, Yamamoto S, Nakamura M *et al.* Spontaneous shrinkage of testicular teratoma in a prepubertal child. *Urology* 2017; **103**: e13–e14.
- 8 Goede J, Hack WW, Sijtermans K *et al.* Normative values for testicular volume measured by ultrasonography in a normal population from infancy to adolescence. *Horm. Res. Paediatr.* 2011; **76**: 56–64.
- 9 Shukla AR, Woodard C, Carr MC *et al.* Experience with testis sparing surgery for testicular teratoma. *J. Urol.* 2004; **171**: 161–3.
- 10 Patel AS, Coley BD, Jayanthi VR. Ultrasonography underestimates the volume of normal parenchyma in benign testicular masses. *J. Urol.* 2007; **178**: 1730–2.
- 11 Chang MY, Shin HJ, Kim HG, Kim MJ, Lee MJ. Prepubertal testicular teratomas and epidermoid cysts: comparison of clinical and sonographic features. *J. Ultrasound Med.* 2015; **34**: 1745–51.
- 12 Mellick LB, Sinex JE, Gibson RW, Mears K. A systematic review of testicle survival time after a torsion event. *Pediatr. Emerg. Care* 2019; **35**: 821–5.

tumors in infants.<sup>4</sup> As I stated above, preoperative evaluation of AFP levels and ultrasonographic findings is particularly important. However, AFP levels in infants must be interpreted with caution because of its physiologically persistent elevation in children younger than 1 year of age. When we evaluate AFP levels in infants, the age-specific normal range reported by Tsuchida *et al.* may be helpful.<sup>5</sup>

Eiji Hisamatsu M.D. 

Department of Urology, Aichi Children's Health and Medical Center, Obu, Aichi, Japan  
fpsfd412@yahoo.co.jp

DOI: 10.1002/iju5.12340

## Conflict of interest

The author declares no conflict of interest.

## References

- 1 Hisamatsu E, Takagi S, Nakagawa Y *et al.* Prepubertal testicular tumors: a 20-year experience with 40 cases. *Int. J. Urol.* 2010; **17**: 956–9.

This is an open access article under the terms of the Creative Commons Attribution-NonCommercial-NoDerivs License, which permits use and distribution in any medium, provided the original work is properly cited, the use is non-commercial and no modifications or adaptations are made.

- 2 Shukla AR, Woodard C, Carr MC *et al.* Experience with testis sparing surgery for testicular teratoma. *J. Urol.* 2004; **171**: 161–3.
- 3 Patel AS, Coley BD, Jayanthi VR. Ultrasonography underestimates the volume of normal parenchyma in benign testicular masses. *J. Urol.* 2007; **178**: 1730–2.
- 4 Kanematsu A, Yamamoto S. Preservation of testicular tissue after enucleation of pediatric mature teratoma: a case series of 7 testes in 6 children. *IJU Case Rep.* 2021; **4**: 289–92.
- 5 Tsuchida Y, Endo Y, Kaneko M, Shiraki K, Ohmin K. Evaluation of alpha-fetoprotein in early infancy. *J. Pediatr. Surg.* 1978; **13**: 155–62.