Asian Journal of Andrology (2016) 18, 147–148

www.asiaandro.com; www.ajandrology.com

Open Access

LETTER TO THE EDITOR

Male Health

The feasibility and experience of using seminal vesiculoscopy in the diagnosis of primary seminal vesicle tumors

Shu-Xiong Zeng*, Xin Lu*, Zhen-Sheng Zhang, Zhi-Yong Liu, Chuan-Liang Xu, Ying-Hao Sun

Asian Journal of Andrology (2016) **18**, 147–148; doi: 10.4103/1008-682X.148727; published online: 10 March 2015

Dear Editor,

Primary tumors of the seminal vesicle are extremely rare in the genitourinary system. There have only been about 70 cases reported in the literature since the first case of primary seminal vesicle carcinoma was reported in 1925 by Lyons.[1] Seminal vesicle tumors are often difficult to diagnose at an early stage because of a lack of typical symptoms. Moreover, differentiation of the seminal vesicle mass from secondary tumor invasion into adjacent organs has also been a difficult problem for urologists.[1] Nevertheless, accurate and prompt diagnosis of this tumor is important, since timely treatment is associated with improved long-term survival.[2] With the development of seminal vesiculoscopy, numerous seminal vesicle diseases can now be diagnosed and treated using this technique; however, there has been no previous study involving the use of seminal vesiculoscopy in the diagnosis of primary seminal vesicle tumors.[3–5] Seminal vesiculoscopy has been performed for the diagnosis and treatment of seminal vesicle diseases in our center since February 2006, and to date >1000 patients have undergone examination using this modality.[3] In the present study, seminal vesiculoscopy was innovatively used for the diagnosis of seminal vesicle tumors. The ejaculatory duct and seminal vesicle could be observed, and sufficient tumor samples could be obtained for pathological examination.

From December 2006 to March 2014, four patients with seminal vesicle masses were diagnosed as having primary tumor of the seminal vesicle using seminal vesiculoscopy in our center. Serum analysis and special examinations such as those involving prostate specific antigen, carcinoembryonic antigen, cancer antigen 125, transrectal ultrasonography (TURS) and magnetic resonance imaging (MRI) failed to differentiate these seminal vesicle masses from prostate cancer with seminal vesicle invasion. Transrectal biopsy revealed that two of three patients were suspected of having a primary seminal vesicle tumor while the third had benign prostate hyperplasia (**Table 1**). All patients underwent seminal vesiculoscopy; the protocol and skills required for performing seminal vesiculoscopy in our department have been discussed in detail in previous reports.[3,4] With regard to using this technique for diagnosing seminal vesicle tumors, several technical skills are worth noting. Firstly, the orifice to the verumontanum or seminal vesicle could occasionally not be found. As illustrated in **Figure 1a**, it was not possible to locate the orifice of the verumontanum when the seminal vesicle tumor had invaded the urethra, but it was easy to obtain tumor tissue in such a situation. Secondly, once the ureteroscope was inserted into the lumen of the verumontanum, it was usually occupied with neoplasms that had migrated to the lumen from the unilateral seminal vesicle (**Figure 1b**). Therefore, it was extremely difficult to puncture the seminal vesicle with the head of Zebra guidewire because the normal anatomic structure had changed considerably, and space for maneuvering was extremely limited. In fact, it was not necessary to try to puncture the seminal vesicle when sufficient tumor tissue could be obtained for pathological evaluation (**Figure 1c**). The duration of operations involving seminal vesiculoscopy was between 15 and 25 min, and in all patients sufficient tumor tissue was obtained for pathologic evaluation (**Table 1**). There were no intraoperative or postoperative complications. After pathological confirmation of a malignant seminal vesicle tumor, all of the patients underwent open cystoprostatico-vesiculectomy with pelvic lymph node dissection and urinary diversion. The four patients in our study did not receive chemotherapy, radiotherapy or anti-androgenic therapy after surgery. The pathological results of the seminal vesiculoscopy biopsy were confirmed by the gross pathology.

The advent of advanced imaging technology, for example TURS, MRI and computed tomography (CT), has improved sensitivity regarding the detection of abnormalities of the seminal vesicles; however, these imaging modalities have limited specificity concerning the differentiation of prostate cancer and primary tumors of the seminal vesicle.[6] In the present study, using all of the various examination techniques such as TRUS, CT and MRI the seminal vesicle masses were suspected as originating from prostate cancer; this was because prostate cancer is a common malignant disease in elderly patients and the imaging characteristics are difficult for radiologists to differentiate. Transrectal needle biopsy with TRUS guidance is an important approach in the differentiation of such unknown seminal vesicle masses. However, false negative results from transrectal needle biopsies are a serious concern. It should be noted that nearly 45% of patients have been reported to require exploration of the small pelvis

Department of Urology, Changhai Hospital, Second Military Medical University, Shanghai, China.
*These authors contributed equally to this work.
Correspondence: Dr. CL Xu (xuchuanliang@medmail.com.cn)
or Dr. YH Sun (sunyh@medmail.com.cn)
Received: 03 October 2014; Revised: 27 November 2014;
Accepted: 30 December 2014

Table 1: Comparison of the results of different special examinations of seminal vesicle

Patient	*TRUS*	*CT*	*MRI*	*18FDG-PET/CT*	*Needle biopsy*	*Seminal vesiculoscopy biopsy*
1	Cystic-solid mixed mass	PCa-SV	NP	NP	Benign prostate hyperplasia	SV adenocarcinoma
2	Solid mass	PCa-SV	NP	NP	SV adenocarcinoma†	SV adenocarcinoma
3	Solid mass	PCa-SV	PCa-SV	NP	SV sarcoma†	SV leiomyosarcoma
4	Cystic-solid mixed mass	PCa-SV	PCa-SV	PCa-SV	NP	SV clear cell adenocarcinoma

18FDG: 18F-fluorodeoxyglucose; MRI: magnetic resonance imaging; PET: positron emission tomography; CT: computed tomography; TRUS: transrectal ultrasonography; PCa-SV: prostate cancer with seminal vesicle invasion; SV: seminal vesicle; NP: not performed. †These patients had undergone needle biopsy before referred to our hospital, but they could not provide biopsy tissue sections for pathological confirmation in our hospital. Seminal vesiculoscopy biopsy was thus performed to gain tumor tissue

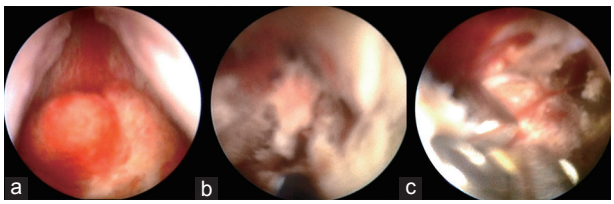

Figure 1: Description of seminal vesiculoscopy for diagnosis of seminal vesicle tumor. (**a**) Seminal vesicle tumor invaded urethral and covered the orifice of the verumontanum in one patient, biopsy in such situation was easy. (**b**) With the guidance of Zebra guidewire, ureteroscope successfully inserted into lumen of the verumontanum, which was stuffed with neoplasms and the anatomic structure was greatly changed. The orifice to the seminal vesicle could not be located. (**c**) Successful biopsy with enough tumor tissue obtained for pathological evaluation.

and excision of a suspected tumor, for primary diagnosis of seminal vesicle tumors.[1] Hoshi *et al.*[7] considered that it might not be possible to make a definitive diagnosis using needle biopsy of the seminal vesicle; this was because seminal vesicle tumors had a wide spectrum of histological appearance and needle biopsy was unable to provide detailed information regarding histopathologic characteristics. Sollini *et al.*[8] reported a patient who had undergone a second needle biopsy to diagnose seminal vesicle adenocarcinoma at 1-year after the first negative biopsy result. Moreover, it was also observed in the present study that the accuracy of needle biopsy in the diagnosis of seminal vesicle tumors was only 66.7%. In contrast, seminal vesiculoscopy biopsy was able to accurately detect all of the seminal vesicle tumors. In clinical practice, transrectal needle biopsy is still considered as the first choice regarding the differentiation of the seminal vesicle mass since it requires a lower level of surgical skill and is less expensive than seminal vesiculoscopy. However, if the results of needle biopsy are ambiguous or negative, seminal vesiculoscopy biopsy should be considered for further evaluation, or even as the first choice modality if available.

In summary, seminal vesiculoscopy affords direct access to the seminal vesicle, which considerably enhances the ease of tissue biopsy under direct view; it is also possible to obtain enough tissue for accurate pathological evaluation. Seminal vesiculoscopy should be considered as an effective modality for use by urologists in dealing with the spectrum of problems associated with seminal vesicle masses.

AUTHOR CONTRIBUTIONS

CLX and YHS conceived of the study, SXZ and XL drafted the manuscript and ZSZ revised it. ZYL, SXZ, XL, ZSZ participated in performing the operation. All authors read and approved the final manuscript.

COMPETING INTERESTS

The authors declare no competing interests.

REFERENCES

1 Thiel R, Effert P. Primary adenocarcinoma of the seminal vesicles. *J Urol* 2002; 168: 1891–6.
2 Ormsby AH, Haskell R, Jones D, Goldblum JR. Primary seminal vesicle carcinoma: an immunohistochemical analysis of four cases. *Mod Pathol* 2000; 13: 46–51.
3 Liu ZY, Sun YH, Xu CL, Hou JG, Gao X, *et al.* Transurethral seminal vesiculoscopy in the diagnosis and treatment of persistent or recurrent hemospermia: a single-institution experience. *Asian J Androl* 2009; 11: 566–70.
4 Wang H, Ye H, Xu C, Liu Z, Gao X, *et al.* Transurethral seminal vesiculoscopy using a 6F vesiculoscope for ejaculatory duct obstruction: initial experience. *J Androl* 2012; 33: 637–43.
5 Yang SC, Rha KH, Byon SK, Kim JH. Transutricular seminal vesiculoscopy. *J Endourol* 2002; 16: 343–5.
6 Han CH, Liang Q, Dong BZ, Hao L, Fan T, *et al.* The transurethral seminal vesiculoscopy in the diagnosis and treatment of the seminal vesicle disease. *Cell Biochem Biophys* 2013; 66: 851–3.
7 Hoshi A, Nakamura E, Higashi S, Segawa T, Ito N, *et al.* Epithelial stromal tumor of the seminal vesicle. *Int J Urol* 2006; 13: 640–2.
8 Sollini M, Silvotti M, Casali M, Giovanardi F, Zadro A, *et al.* The role of imaging in the diagnosis of recurrence of primary seminal vesicle adenocarcinoma. *World J Mens Health* 2014; 32: 61–5.