

以检测出由于组织退化导致的阴茎海绵体硬度改变,当阴茎海绵体发生退化时,SWE测值明显低于健康组^[7]。由此可见,SWE是一项可以运用于临床进行阴茎海绵体硬度定量评价的超声新技术,SWS是一项定量评价阴茎海绵体硬度的新指标,但是,目前尚未建立阴茎海绵体SWS的正常值范围,本研究旨在建立勃起功能正常阴茎海绵体非勃起状态下SWS的正常值范围。

本研究中,我们选取的受试者年龄范围为18~40岁,这是由于男性的睾丸容积,阴茎长度及血清睾酮水平至18岁时已达到成年人水平^[16],40岁以后随着睾酮水平的降低及各种慢性疾病的出现,阴茎海绵体组织逐渐发生退化性改变^[17~18];本研究受试者勃起功能均正常,且排除了阴茎疾病及可以导致阴茎病变的全身性因素^[19],确保了阴茎海绵体组织结构均为正常,利用SWE对所有受试者阴茎海绵体SWS进行测量,使用正态分布法得出了SWS正常值范围。这一研究结果对于最终确立非勃起状态阴茎海绵体硬度的正常值范围具有重要的参考价值。

参 考 文 献

- [1] Bercoff J, Tanter M, Fink M. Supersonic shear imaging: a new technique for soft tissue elasticity mapping [J]. IEEE Trans Ultrason Ferroelectr Freq Control, 2004, 51(4): 396-409.
- [2] Yada N, Sakurai T, Minami T, et al. A newly developed shear wave elastography modality: With a unique reliability index [J]. Oncology, 2015, 89(Suppl 2): 53-59.
- [3] Heřman J, Heřmanová Z, Salzman R, et al. Ultrasound elastography and its use in the head and neck imaging [J]. Cas Lek Cesk, 2015, 154 (5): 222-226.
- [4] Park AY, Son EJ, Kim JA, et al. Lesion stiffness measured by shear-wave elastography: Preoperative predictor of the histologic underestimation of US-guided core needle breast biopsy [J]. Eur J Radiol, 2015, 84(12): 2509-2514.
- [5] 张佳杰,李凡,白敏,等.剪切波超声弹性成像测量阴茎海绵体硬度的方法学研究[J].临床超声医学杂志,2015,17(9): 582-585.
- [6] Zhang JJ, Qiao XH, Gao F, et al. A new method of measuring the stiffness of corpus cavernosum penis with ShearWave™ Elastography [J]. Br J Radiol, 2015, 88(1048): 20140671.
- [7] 张佳杰,邢晋放,李凡,等.剪切波超声弹性成像评价阴茎海绵体硬度[J].中国医学影像技术,2015,31(2): 279-281.
- [8] Otuncemur A, Bozkurt M, Besiroglu H, et al. Erectile dysfunction is positively correlated with mean platelet volume and platelet count, but not with eosinophil count in peripheral blood [J]. Urol J, 2015, 12 (5): 2347-2352.
- [9] Tang WH, Zhuang XJ, Shu RM, et al. The prevalence of erectile dysfunction among subjects with late-onset hypogonadism: a population-based study in China [J]. Int J Clin Exp Med, 2015, 8(8): 13901-13910.
- [10] 刘云飞,胡礼泉,宋健,等.自发性高血压大鼠勃起功能及海绵体形态结构的改变[J].解剖学杂志,2006,29(1): 98-100.
- [11] Burchardt T, Burchardt M, Karden J, et al. Reduction of endothelial and smooth muscle density in the corpora cavernosa of the streptozotocin induced diabetic rat [J]. J Urol, 2000, 164(5): 1807-1811.
- [12] Wespes E. Cavernosal smooth muscle biopsy is a useful tool in the diagnosis of erectile dysfunction [J]. Current Sexual Health Reports, 2004, 1(2): 40-43.
- [13] 乔晓慧,邢晋放.剪切波超声弹性成像的原理及临床应用现状[J].中国介入影像与治疗学,2015,12(8): 512-515.
- [14] 方毅,王学梅,王健楠,等.正常成人甲状腺剪切波杨氏模量测值的研究[J].临床超声医学杂志,2014,16(3): 197-199.
- [15] Richards G, Goldenberg E, Pek H, et al. Penile sonoelastography for the localization of a non-palpable, nonsonographically visualized lesion in a patient with penile curvature from Peyronie's disease [J]. J Sex Med, 2014, 11(2): 516-520.
- [16] 盖凌,杨丹彤,孙慧清,等.青春期男性性发育研究[J].中华男科学杂志,2002,8(5): 353-355.
- [17] 张凯,刘德风,姜辉,等.不同年龄勃起功能障碍患者勃起功能的调查[J].中国性科学杂志,2014,23(20): 21-23.
- [18] 倪少义,王榕生,方培群,等.中老年人男性勃起功能障碍ED的流行病学调查[J].中国实用医药,2010,5(18): 246-247.
- [19] 田锦成,姜睿.慢性疾病对阴茎勃起功能的影响[J].中华男科学杂志,2014,20(9): 834-839.

(收稿日期:2015-12-31)