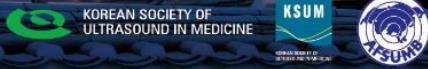


AFSUMB 2024

The 16th Congress of the Asian Federation of Societies for Ultrasound in Medicine and Biology
in conjunction with *KSUM 2024*

Shaping the Future with Ultrasound

May 9 (Thu) – 11 (Sat), 2024 | Coex, Seoul, Korea



Speaker: Jongjin Yoon, Korea, Republic of

Affiliation: Severance Hospital, Department of Radiology

Lecture Title: Penile USG


Penile Doppler ultrasonography is a valuable imaging modality that allows for the noninvasive or minimally-invasive assessment of the normal anatomy, macroscopic pathologic changes, and functional alterations in penile blood flow, particularly in the context of erectile dysfunction (ED), Peyronie disease, a certificate of disability, palpable mass, and priapism. This lecture focuses on penile color Doppler ultrasound (CDUS), providing comprehensive information on the standard sonographic composition of the penis, the approach for detecting visible abnormalities, and assessing alterations in blood circulation associated with various penile disorders. The penile CDUS technique involves using high-frequency linear probes and vasoactive agents to assess the cavernous artery (CA) at the base of the penis, where the CA angles posteriorly towards the crus, to assess both flaccid and erect states to standardize velocity measurements. By utilizing color Doppler signals and angle correction tools, such as the angle correction cursor or steering box, accurate assessment of peak systolic velocity (PSV), end diastolic velocity (EDV), resistive index (RI), and acceleration time (AT) can be achieved. This standardized approach enhances the diagnostic accuracy of penile CDUS. Through penile CDUS, radiologists can not only visualize the normal anatomy of the penis, including the tunica albuginea with its longitudinal and circular fiber layers, but also detect macroscopic pathologic changes such as priapism and Peyronie disease. The interpretation of various parameters and findings on penile CDUS plays a crucial role in the diagnosis and classification of ED, aiding in the comprehensive management of patients with erectile issues. In addition, in the assessment of priapism, penile CDUS plays a crucial role in differentiating between arterial and venous types, enabling the identification of high-flow priapism secondary to arterio-cavernosal fistulas or low-flow priapism characterized by absent cavernosal blood flow. Similarly, in Peyronie disease, penile CDUS aids in visualizing calcified nodules along the tunical envelope and detecting fibrous plaques, offering valuable insights into disease progression and associated erectile dysfunction. The importance of penile Doppler US has diminished over the last 2-3 decades because of the poor long-term clinical outcomes of surgery as well as the introduction of phosphodiesterase type 5 inhibitors (PDE5-I). However, with the introduction of advanced techniques like sonoelastography and contrast-enhanced ultrasonography (CEUS), the diagnostic capabilities of penile CDUS are further improved. This allows

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for better understanding and classification of penile pathologies, as well as the development of personalized patient management strategies. In conclusion, penile CDUS is a high-performing imaging modality with a wide range of applications in the evaluation of erectile dysfunction and other penile disorders, including priapism, and Peyronie disease. By combining detailed anatomical visualization with functional hemodynamic assessment, penile CDUS offers a comprehensive approach to the diagnosis and management of male sexual health disorders.