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Evaluation of the Prostate and Surrounding Structures Ultrasound Protocol

Reviewed by: Mark Yuhasz, MD**Last Review Date:** January 2015**Contact:** (866) 761-4200, Option 1**Indications:**

Indications for prostate ultrasound include, but are not limited to:

1. Guidance for biopsy in the presence of an abnormal digital rectal examination or elevated prostatic specific antigen.
2. Assessment of gland and prostate volume prior to medical, surgical, or radiation therapy.
3. Symptoms of prostatitis with suspected abscess.
4. Assessment of congenital anomalies.
5. Infertility.
6. Hematospermia.

Required Images

The following practice parameters describe the examination of the prostate and surrounding structures.

A. Prostate

The transrectal approach to ultrasound of the prostate is the method of choice, as image quality is superior to transabdominal or transperineal examinations. However, in patients for whom the transrectal approach is not possible, a transperineal ultrasound examination may be used to direct a biopsy procedure. A transabdominal approach can be useful to obtain an estimate of prostate size in some settings.

The prostate should be imaged in its entirety in at least two orthogonal planes, sagittal and axial or longitudinal and coronal, from the apex to the base of the gland. An estimated volume is determined from measurements in three orthogonal planes (volume = length x height x width x 0.52). The volume of the prostate may be correlated with the PSA level.

The gland should be evaluated for focal mass, echogenicity, symmetry, and continuity of margins.

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Color and power Doppler sonography may be helpful in detecting areas of increased vascularity that can be used to select potential sites for biopsy. The periprostatic fat and neurovascular bundle should be evaluated for symmetry and echogenicity. The course of the prostatic urethra should be documented, when possible, and asymmetry between left and right periurethral tissues as well as their impact on the base of the bladder should be noted.

B. Seminal Vesicles, Vasa Deferentia, and Perirectal Space

The seminal vesicles should be evaluated for size, shape, position, symmetry, and echogenicity from their insertion into the prostate via the ejaculatory ducts to their cranial and lateral extents. Particular attention should be given to the normal tapering of the seminal vesicle as it joins the prostate. In patients being evaluated for infertility, the vasa deferentia must be evaluated. The presence and size of seminal vesicle, ejaculatory, Müllerian, or utricle cysts or evidence of seminal vesicle or ejaculatory duct obstruction should be noted. Inclusion of the anterior perirectal space, in particular the region that abuts the prostate and perirectal tissues, is important.