ACR Appropriateness Criteria® Hematospermia

Expert Panel on Urologic Imaging: *Keyanoosh Hosseinzadeh, MD*[a], *Aytekin Oto, MD*[b], *Brian C. Allen, MD*[c], *Fergus V. Coakley, MD*[d], *Barak Friedman, MD*[e], *Pat F. Fulgham, MD*[f], *Matthew S. Hartman, MD*[g], *Matthew T. Heller, MD*[h], *Christopher Porter, MD*[i], *V. Anik Sahni, MD*[j], *Gary S. Sudakoff, MD*[k], *Sadhna Verma, MD*[l], *Carolyn L. Wang, MD*[m], *Don C. Yoo, MD*[n], *Erick M. Remer, MD*[o], *Steven C. Eberhardt, MD*[p]

Abstract

Most men with hematospermia or hemospermia (HS) are young (<40 years of age), presenting with transient or episodic HS without other signs or symptoms of disease. The condition is self-limiting in most cases and idiopathic in nature. When a cause can be identified, infections of the urogenital tract are the most common. Imaging does not play a role in this patient population. In older men (>40 years of age), clinical screening for prostate cancer is advised. Furthermore, when HS is persistent or has symptoms, causes include obstruction or stricture at the level of the verumontanum, calcifications or calculi in the prostate, ejaculatory ducts or seminal vesicles, and cysts arising within these structures. Noninvasive imaging, predominantly transrectal ultrasound (TRUS) and MRI, can be used in men of any age with persistent or refractory HS, or other associated symptoms or signs. TRUS is considered as the first-line imaging with MRI used when TRUS is inconclusive or negative.

The American College of Radiology Appropriateness Criteria are evidence-based guidelines for specific clinical conditions that are reviewed annually by a multidisciplinary expert panel. The guideline development and revision include an extensive analysis of current medical literature from peer-reviewed journals and the application of well-established methodologies (RAND/UCLA Appropriateness Method and Grading of Recommendations Assessment, Development, and Evaluation or GRADE) to rate the appropriateness of imaging and treatment procedures for specific clinical scenarios. In those instances where evidence is lacking or equivocal, expert opinion may supplement the available evidence to recommend imaging or treatment.

Key Words: Appropriateness Criteria, Appropriate Use Criteria, AUC, hematospermia, hemospermia, MRI, TRUS, ultrasound

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[a]Principal Author, Wake Forest University School of Medicine, Winston-Salem, North Carolina.

[b]Panel Vice-Chair, The University of Chicago, Chicago, Illinois.

[c]Duke University Medical Center, Durham, North Carolina.

[d]Oregon Health and Science University, Portland, Oregon.

[e]Long Island Jewish Medical Center, New Hyde Park, New York.

[f]Urology Clinics of North Texas, Dallas, Texas; American Urological Association.

[g]Allegheny General Hospital, Pittsburgh, Pennsylvania.

[h]University of Pittsburgh, Pittsburgh, Pennsylvania.

[i]Virginia Mason Medical Center, Seattle, Washington; American Urological Association.

[j]Brigham & Women's Hospital, Boston, Massachusetts.

[k]Medical College of Wisconsin, Milwaukee, Wisconsin.

[l]University of Cincinnati Medical Center, Cincinnati, Ohio.

[m]University of Washington, Seattle Cancer Care Alliance, Seattle, Washington.

[n]Rhode Island Medical Imaging Inc, East Providence, Rhode Island.

[o]Specialty Chair, Cleveland Clinic, Cleveland, Ohio.

[p]Panel Chair, University of New Mexico, Albuquerque, New Mexico.

Corresponding author: Keyanoosh Hosseinzadeh, MD, Attn: Dept of Radiology, Wake Forest University, 1 Medical Center Blvd, Winston Salem, NC 27157; e-mail: keyanooshh@gmail.com.

The American College of Radiology seeks and encourages collaboration with other organizations on the development of the ACR Appropriateness Criteria through society representation on expert panels. Participation by representatives from collaborating societies on the expert panel does not necessarily imply individual or society endorsement of the final document.

Reprint requests to: publications@acr.org

Dr. Yoo reports Consultant for Endocyte.

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ACR Appropriateness Criteria® Hematospermia. Variants 1 and 2 and Table 1.

Variant 1. Man <40 years of age, transient or episodic hematospermia, and no other symptoms or signs of disease.

Radiologic Procedure	Rating	Comments	RRL
US pelvis (prostate) transrectal	3		○
MRI pelvis without IV contrast	3		○
MRI pelvis without and with IV contrast	3		○
CT pelvis with IV contrast	1		☢☢☢
CT pelvis without IV contrast	1		☢☢☢
CT pelvis without and with IV contrast	1		☢☢☢☢
Arteriography pelvis	1		☢☢☢☢

Note: Rating scale: 1, 2, 3 = usually not appropriate; 4, 5, 6 = may be appropriate; 7, 8, 9 = usually appropriate. IV = intravenous; RRL = relative radiation level; US = ultrasound.

Variant 2. Man ≥40 years of age, or man of any age with persistent hematospermia, or hematospermia accompanied by associated symptoms or signs of disease.

Radiologic Procedure	Rating	Comments	RRL
US pelvis (prostate) transrectal	8		○
MRI pelvis without and with IV contrast	8	This procedure is indicated if TRUS is negative or inconclusive. MRI can be used to evaluate for suspected prostate cancer or ejaculatory duct obstruction. This procedure should include dynamic contrast-enhanced MRI for suspected prostate cancer.	○
MRI pelvis without IV contrast	7	This procedure is indicated if TRUS is negative or inconclusive. MRI can be used to evaluate for suspected prostate cancer or ejaculatory duct obstruction.	○
CT pelvis with IV contrast	2		☢☢☢
Arteriography pelvis	2		☢☢☢☢
CT pelvis without and with IV contrast	1		☢☢☢☢
CT pelvis without IV contrast	1		☢☢☢

Note: Rating scale: 1, 2, 3 = usually not appropriate; 4, 5, 6 = may be appropriate; 7, 8, 9 = usually appropriate. IV = intravenous; RRL = relative radiation level; US = ultrasound.

Table 1. Relative radiation level designations

RRL*	Adult Effective Dose Estimate Range (mSv)	Pediatric Effective Dose Estimate Range (mSv)
○	0	0
☢	<0.1	<0.03
☢☢	0.1-1	0.03-0.3
☢☢☢	1-10	0.3-3
☢☢☢☢	10-30	3-10
☢☢☢☢☢	30-100	10-30

*Relative radiation level (RRL) assignments for some of the examinations cannot be made, because the actual patient doses in these procedures vary as a function of a number of factors (eg, region of the body exposed to ionizing radiation, the imaging guidance that is used). The RRLs for these examinations are designated as "varies."