

Subject: Scrotal Ultrasound

Guideline #: CG-MED-48

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Description

This document addresses the use of ultrasound imaging technologies for the evaluation of conditions affecting the scrotum and testes.

Clinical Indications

Medically Necessary:

The use of scrotal ultrasound is considered **medically necessary** for the following conditions:

1. Evaluation of acute scrotal symptoms (for example, pain, swelling) and trauma;**or**
2. Evaluation of scrotal asymmetry or enlargement (including suspected hydroceles);**or**
3. Evaluation of scrotal masses;**or**
4. Detection or evaluation of varicoceles;**or**
5. Evaluation of infertility;**or**
6. Evaluation of testicular ischemia or torsion;**or**
7. Evaluation of suspected infectious or inflammatory scrotal disease;**or**
8. Detection of occult primary tumors in individuals with metastatic germ cell tumors.

Not Medically Necessary:

The use of scrotal ultrasound is considered **not medically necessary** for the localization of undescended testes.

The use of scrotal ultrasound is considered **not medically necessary** for any condition not listed above.

Coding

The following codes for treatments and procedures applicable to this guideline are included below for informational purposes. Inclusion or exclusion of a procedure, diagnosis or device code(s) does not constitute or imply member coverage or provider reimbursement policy. Please refer to the member's contract benefits in effect at the time of service to determine coverage or non-coverage of these services as it applies to an individual member.

When services are Medically Necessary:

CPT

76870 Ultrasound, scrotum and contents

ICD-10 Diagnosis

C62.00-C62.92	Malignant neoplasm of testis
C63.00-C63.9	Malignant neoplasm of other and unspecified male genital organs
C79.82	Secondary malignant neoplasm of genital organs
D07.60-D07.69	Carcinoma in situ of other and unspecified male genital organs
D29.20-D29.22	Benign neoplasm of testis
D29.30-D29.9	Benign neoplasm of epididymis, scrotum, other male genital organs
D40.10-D40.12	Neoplasm of uncertain behavior of testis
D40.8-D40.9	Neoplasm of uncertain behavior of other and unspecified male genital organs
D49.59	Neoplasm of unspecified behavior of other genitourinary organs
I86.1	Scrotal varices
N43.0-N43.42	Hydrocele and spermatocele
N44.00-N44.8	Noninflammatory disorders of testis
N45.1-N45.4	Orchitis and epididymitis
N46.01-N46.9	Male infertility
N50.0-N50.9	Other disorders of male genital organs
P83.5	Congenital hydrocele
Q55.0-Q55.4	Other congenital malformations of male genital organs
S30.22XA-S30.22XS	Contusion of scrotum and testes
S30.843A-S30.843S	External constriction of scrotum and testes
S30.853A-S30.853S	Superficial foreign body of scrotum and testes
S30.94XA-S30.94XS	Unspecified superficial injury of scrotum and testes
S31.30XA-S31.35XS	Open wound of scrotum and testes
S38.02XA-S38.02XS	Crushing injury of scrotum and testis
S39.848A-S39.848S	Other specified injuries of external genitals
S39.94XA-S39.94XS	Unspecified injury of external genitals

When services are Not Medically Necessary:

For the procedure code listed above for all other diagnoses not listed, or when the code describes a procedure designated in the Clinical Indications section as not medically necessary.

ICD-10 Diagnosis

Q53.00-Q53.9 All other diagnoses, including the following:
Undescended and ectopic testicle

Discussion/General Information

Ultrasonography (US) is a medical technology that uses sound waves to create images of internal structures of the body or to evaluate their function. US is a widely accepted technique in the evaluation of scrotal conditions, allowing for medical evaluation of serious conditions without the need for invasive surgery or techniques that expose individuals to radiation.

The American Institute of Ultrasound Medicine (AIUM) published its *Practice Guideline for the Performance of Scrotal Ultrasound Examinations* in 2015. This document, which was jointly developed with the American College of Radiology (ACR) and the Society of Radiologists in Ultrasound (SRU), provides guidance for a wide variety of indications where US is understood to be beneficial, including acute scrotum, which may be caused by a wide variety of conditions. US evaluation for acute scrotum is supported by over 20 years of study data indicating sensitivity between 70-100% and specificity between 88-100% (Al Mufti, 1995; Paltiel, 1998, Vajayarghavan, 2006; Wilbert, 1993; Yazbeck, 1994). One cause of acute scrotum is testicular torsion. Several studies have investigated the use of US for the evaluation of this condition specifically, indicating sensitivity between 63-86%, specificity between 89-100%, and accuracy between 99-100% (Baker, 2000; Baldisserotto, 2005; Burks, 1990; Kalfa, 2007; Karmazyn, 2005). The most recent data, from a large study conducted by Yagil and colleagues (2010), reported that sensitivity, specificity, and accuracy of US was 94%, 96%, and 99.5% for testicular torsion, 92%, 95%, and 94% for testicular malignancy, and 100%, 98.5%, 98.5% for testicular hematoma, respectively. This study also reported on the beneficial use of US for hydrocele, hernia, testicular mass, abscess, cryptorchidism, and orchiepididymitis.

US is indicated for the evaluation of infertility to evaluate for obstructive azoospermia (generally in individuals with normal testicular volumes, normal serum testosterone, follicle-stimulating hormone (FSH), and luteinizing hormone (LH), and azoospermia). Obstructive azoospermia can be the result of several processes, including obstruction of the epididymis or ejaculatory duct or congenital bilateral absence of the vasa deferentia. Pierik and colleagues (1999) conducted a large study of 1372 subjects with suspected infertility and found that US had a sensitivity of 65.7% and a specificity of 91% for detecting abnormalities.

In 2013, Abdulwahed and colleagues published the findings of a prospective case series study involving 268 azoospermic men who underwent both scrotal and transrectal US evaluation. All subjects had previously undergone biopsy and had histopathological results available. The authors reported that the sensitivity and specificity of scrotal US in detecting nonobstructive azoospermia was 75% and 72%, respectively. For obstructive azoospermia, sensitivity and specificity was reported as 29.8% and 87%, respectively. Rectal US was 45% sensitive and 83% specific in detecting obstructive azoospermia and 39% sensitive and 88% specific in detecting functional azoospermia. While scrotal US was more sensitive in detecting functional azoospermia and more specific in detecting obstructive azoospermia, transrectal US was more sensitive in detecting obstructive azoospermia and more specific in detecting functional azoospermia. The authors noted that both tests had greater specificity than sensitivity for obstructive azoospermia, indicating that US has the ability to exclude more than to diagnose cases of obstructive azoospermia.

A meta-analysis published by Tasian and Copp (2011a) found that US for an undescended testis has a sensitivity of 45% (95% confidence interval [CI], 29% to 61%) and a specificity of 78% (95% CI, 43% to 94%). The positive and negative likelihood ratios are 1.48 (95% CI, 0.54 to 4.03) and 0.79 (95% CI, 0.46 to 1.35), respectively. The authors stated that a positive ultrasound result increases and negative ultrasound result decreases the probability that a nonpalpable testis is located within the abdomen from 55% to 64% and 49%, respectively. They concluded that "ultrasound does not reliably localize nonpalpable testes and does not rule out an intraabdominal testis. Eliminating the use of ultrasound will not change management of nonpalpable cryptorchidism."

McLaren (2021) performed a systematic review on the utility of ultrasonography in the diagnosis of testicular torsion in acute scrotum individuals. A total of 19 studies were analyzed, however, 14 were eliminated due to poor quality. The five studies included in the review met the following criteria: (a) acute scrotum pain, (b) availability of the description and data of both B-mode and color Doppler ultrasound (CDS) findings, (c) individuals who underwent surgical exploration, and (d) literature that provided a number of positive and negative testicular torsion (TT) cases. Due to advances in technology, only literature published from the year 2000 forward were included. A modified version of the Cochrane Data Extraction and Assessment Tool was used to ensure standardization. It was indicated that a narrative analysis instead of a statistical analysis was performed due to the inconsistency of the availability of the original data. Sample sizes were relatively small across all studies, except for one. Apart from the larger study of the review, all the other studies lacked information on the level of experience of the US practitioner, the years of experience, type of US training or educational level. The studies provided no information on the brand of US machine used and there were inconsistencies in identification and use of various B-mode US features found amongst the studies. The researcher's findings concluded that the combination of B-mode and CDS US can be of value as a triage tool for individuals with acute scrotum pain in the hands of appropriately trained practitioners. In addition, it was noted the results of the US should always be accompanied with clinical examination.

Pinto and colleagues (2021) performed a systematic review on the use of qualitative and quantitative contrast enhanced ultrasound (CEUS) in diagnosing testicular abnormalities. A total of 33 studies were found and after screening only 14 studies were deemed eligible for review. Of the 14 studies, 4 looked at the differences between benign tumors, malignant tumors, and non-neoplastic lesions, 6 looked at neoplastic lesions only, 3 looked at malignant tumors compared with all benign lesions, and 1 compared all neoplastic lesions against non-neoplastic ones. A total of 557 individuals and 556 lesions were investigated: 4 participants had bilateral lesions and 5 were negative for any lesion after investigation. While all studies analyzed the qualitative features of CEUS, only 4 investigated the use of quantitative CEUS. The researchers concluded that qualitative CEUS is able to definitively establish a lack of vascularity, thus allowing the discrimination between non-neoplastic and neoplastic lesions. However, CEUS alone is insufficient to differentiate malignant from benign tumors, which is an important distinction to make when deciding on a treatment plan. It was noted that it would be worth continuing to explore quantitative analysis through time-intensity curves (TICs), as there is not enough data to conclude on its benefit in the diagnostic process.

In a 2014 guideline on the evaluation and treatment of cryptorchidism, the American Urological Association (AUA) stated that "providers should not perform ultrasound (US) or other imaging modalities in the evaluation of boys with cryptorchidism prior to referral as these studies rarely assist in decision making (Standard; Evidence Strength: Grade B)."

The AUA released a guideline titled *Diagnosis and Treatment of Early Stage Testicular Cancer* in 2019. Their recommendations regarding diagnosis and initial consultation state, "Scrotal ultrasound with Doppler should be obtained in patients with a unilateral or bilateral scrotal mass suspicious for neoplasm. (Strong Recommendation; Evidence Level: Grade B)".

Also in 2019, the American College of Radiology Expert Panel on Urological Imaging released the *ACR Appropriateness Criteria® Acute Onset of Scrotal Pain-Without Trauma, Without Antecedent Mass*, which indicated that US duplex doppler of the scrotum is "usually appropriate". The ACR Expert Panel on GYN and OB Imaging reached the same conclusion in 2022 with regard to initial imaging of newly diagnosed palpable scrotal abnormalities, indicating that if imaging is required, US is the diagnostic modality of choice.

In 2022, the ACR Expert Panel on Urological Imaging released the *ACR Appropriateness Criteria® Staging and Surveillance of*

Testicular Cancer: 2021 Update. The recommendation was that scrotal US “should always be the initial imaging modality in assessing patients with scrotal masses.” However, beyond the initial workup, scrotal US does not have a role in the staging or restaging of testicular cancer unless there is a concern for a contralateral tumor or equivocal clinical examination.

Definitions

Hydrocele: An accumulation of fluid within the scrotum and around the testicle.

Metastatic germ cell tumors: Cancer cells, which are derived from the cells involved in the production of sperm or eggs, that have migrated from their point of origin to another location in the body.

Occult primary tumor: A cancer cell that has an unknown point of origin.

Testicular ischemia: A condition where blood supply to the testes is insufficient.

Testicular neoplasm: Cancer of the testes.

Testicular torsion: A condition where the spermatic cord suspending the testicles becomes twisted, interfering with normal blood supply.

Undescended testes (also known as cryptorchidism): A condition in which one or both testes fail to descend from the abdomen to the scrotum.

Varicocele: The abnormal enlargement of veins within the scrotum.

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Peer Reviewed Publications:

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18. Yazbeck S, Patriquin HB. Accuracy of Doppler sonography in the evaluation of acute conditions of the scrotum in children. *J Pediatr Surg*. 1994; 29(9):1270-1272.

Government Agency, Medical Society, and Other Authoritative Publications:

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History

Status	Date	Action
Reviewed	02/15/2024	Medical Policy & Technology Assessment Committee (MPTAC) review. Revised Discussion/General Information and References sections.
Reviewed	02/16/2023	MPTAC review. Updated Discussion/General Information, Definitions and References sections.
Reviewed	02/17/2022	MPTAC review. References section updated.
Reviewed	02/11/2021	MPTAC review. Updated References section. Reformatted Coding section.
Reviewed	02/20/2020	MPTAC review. References section updated.
Reviewed	03/21/2019	MPTAC review. References section updated.
Reviewed	03/22/2018	MPTAC review. The document header wording updated from "Current Effective Date" to "Publish Date." Discussion/General Information, Definitions, and References sections updated.
Reviewed	05/04/2017	MPTAC review. Updated formatting in Clinical Indications section. Updated Rationale and References sections.
Revised	05/05/2016	Medical Policy & Technology Assessment Committee (MPTAC) review. Removed the term "male" from MN criteria addressing evaluation for infertility. Updated Rationale and References sections. Removed ICD-9 codes from Coding section.
Reviewed	05/07/2015	MPTAC review. Updated Rationale and References sections.
Reviewed	05/15/2014	MPTAC review. No change to clinical indications. Updated References section.
New	05/09/2013	MPTAC review. Initial document development.

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Alternatively, commercial or FEP plans or lines of business which determine there is not a need to adopt the guideline to review services generally across all providers delivering services to Plan's or line of business's members may instead use the clinical guideline for provider education and/or to review the medical necessity of services for any provider who has been notified that his/her/its claims will be reviewed for medical necessity due to billing practices or claims that are not consistent with other providers, in terms of frequency or in some other manner.

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