Guidelines, Policies and Statements

Guidelines for the Performance of Scrotal Ultrasound

Approved by Council Feb 2018

Disclaimer and Copyright
The ASUM Standards of Practice Board have made every effort to ensure that this Guideline/Policy/Statement is accurate and reflects best practice at the time at which they are issued. The information provided in this document is of a general nature only and is not intended as a substitute for medical or legal advice. The Society, employees and members do not accept any liability for the consequences of any inaccurate or misleading data/opinions or statements issued by ASUM. Approved Guidelines may be distributed freely with the permission of ASUM asum@asum.com.au.
Guidelines for the Performance of Scrotal Ultrasound

Purpose
These Guidelines are intended to assist practitioners performing ultrasound studies of the scrotum. It is acknowledged that it is not possible to detect every abnormality or condition present, however it is anticipated that adherence to the following parameters will help maximise consistency, accuracy and the probability of detecting most of the abnormalities that occur in the scrotum.

Scope/Applicability
These guidelines are applicable to all ultrasound practitioners.
These Guidelines supercede D10 Guidelines for the Performance of Scrotal Ultrasound:
Originally Approved: February 1995

Background
Ultrasound examination of the scrotum is valuable in differentiating testicular (usually malignant) from extratesticular (usually benign) masses. Ultrasound is also helpful in the assessment of male infertility, the acute scrotum, scrotal trauma, chronic pain and in the management of cryptorchidism.

Guidelines:
1. Indications
Indications for scrotal ultrasound include but are not limited to the following:
   (i) Evaluation of scrotal pain, including but not limited to testicular trauma, ischemia/torsion, and infectious or inflammatory scrotal disease.
   (ii) Evaluation of palpable inguinal, intrascrotal, or testicular masses.
   (iii) Evaluation of scrotal asymmetry, swelling, or enlargement.
   (iv) Evaluation of potential intrascrotal hernias.
   (v) Detection/evaluation of varicoceles.
   (vi) Evaluation of male infertility.
   (vii) Follow-up of prior indeterminate scrotal ultrasound findings.
   (viii) Localization of nonpalpable testes.
   (ix) Detection of occult primary tumours in patients with metastatic germ cell tumors, positive tumor markers (such as AFP, bHCG, LDH) or unexplained retroperitoneal adenopathy.
   (x) Follow-up of patients with prior primary testicular neoplasms, leukemia, or lymphoma.
   (xi) Evaluation of abnormalities noted on other imaging studies (including but not limited to computed tomography [CT], magnetic resonance imaging [MRI], and positron emission tomography [PET]).
(xii) Evaluation of a disorder of sexual development.

2. Imaging Technique

It is helpful to palpate any clinically apparent lesion before scanning the patient. Images of both hemiscrotas in transverse, sagittal and/or coronal planes should be obtained, together with a transverse scan comparing both testes. The ultrasound findings should be correlated with the clinical findings.

3. Equipment

High quality, high frequency transducers should be used (7MHz to 15MHz range). Colour and spectral Doppler is essential to assess torsion or epididymo-orchitis.

4. Anatomical Evaluation

4.1 Testis
(i) size
(ii) shape
(iii) echotexture (compared with contralateral testis)
(iv) capsule
(v) mediastinum testis (location to assess rotation)
(vi) vascularity
(vii) appendix testis (seen in the presence of a small hydrocoele).

4.2 Epididymis
(i) assess head, body and tail
(ii) size
(iii) echotexture
(iv) vascularity
(v) appendix epididymis (occasionally seen if hydrocoele is present).

4.3 Other Scrotal Anatomy
(i) spermatic cord
(ii) tunica vaginalis
(iii) scrotal wall
(iv) pampiniform plexus assessment for varicocele.

5. Evaluation of Intratesticular Masses
(i) dimensions
(ii) borders (well defined, irregular, poorly defined)
(iii) calcifications
(iv) cystic, solid or complex
(v) echogenicity compared with normal testis
(vi) vascularity and assessment for anatomical vascular distortion (useful for diagnosing intratesticular tumours).

6. Evaluation of Extratesticular Masses

(i) hydrocoele, haematocoele and pyocele
(ii) varicocele (size and location)
(iii) scrotal hernia
(iv) epididymal lesions (cyst, spermatocoele, acute inflammatory mass, granuloma, solid tumours)
(v) scrotal wall assessment for swelling, oedema, collection, abscess formation or diffuse infective process (Fournier’s gangrene).

7. The Acute Scrotum

The differential diagnosis of an acutely painful and swollen scrotum includes torsion of the spermatic cord and testis, torsion of the testicular appendage, epididymitis and/or orchitis.

B-mode ultrasonic findings of acute torsion have been found to be variable and are not specific. Pulsed and colour Doppler are required to help differentiate torsion from epididymo-orchitis.

In the setting of presumed epididymo-orchitis, an abnormality of testicular architecture (with the exception of a simple cyst) should be followed up with ultrasound to ensure an occult testicular tumour is not the underlying cause.

Related/Supporting documents

The following documents are required to give effect to these guidelines:

1. ASUM Guidelines for Reprocessing Ultrasound Transducers.

Supporting Information/References

The following documents inform these guidelines:


Review

These guidelines will be reviewed and evaluated as required to ensure relevance and currency.

<table>
<thead>
<tr>
<th>Version</th>
<th>Effective from</th>
<th>Effective to</th>
<th>Amendment(s)</th>
</tr>
</thead>
<tbody>
<tr>
<td>1.0</td>
<td>Feb 2018</td>
<td>Present</td>
<td>Original version</td>
</tr>
</tbody>
</table>

The review table indicates previous versions of the guideline and any significant changes.

Approval

These guidelines have been approved and issued by the ASUM Council.

<table>
<thead>
<tr>
<th>Approval by</th>
<th>ASUM Council</th>
</tr>
</thead>
<tbody>
<tr>
<td>Approval date</td>
<td>Feb 2018</td>
</tr>
<tr>
<td>Published date</td>
<td>Month, Year</td>
</tr>
</tbody>
</table>