ΤΡΑΥΜΑ ΟΡΧΗ ΣΕ ΑΓΟΡΙ 14 ΕΤΩΝ

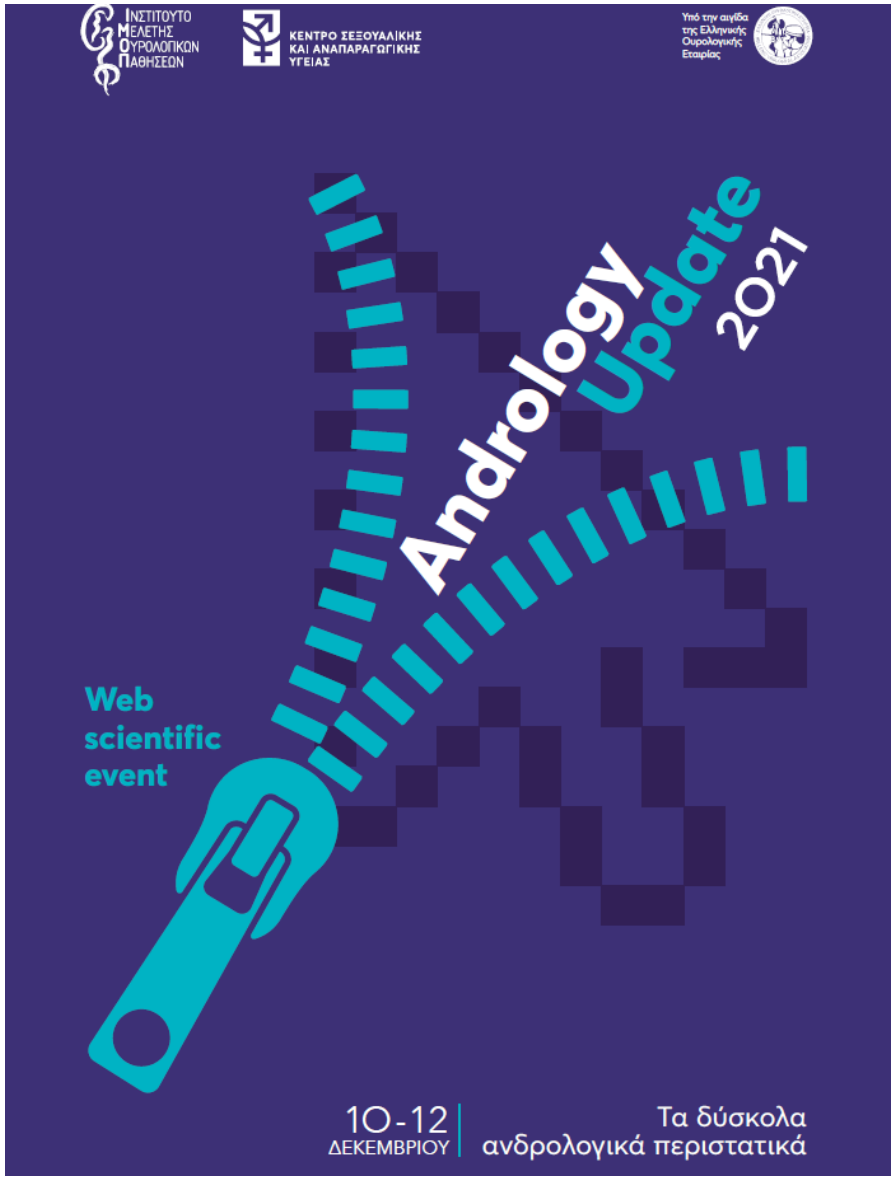
Β. ΠΡΩΤΟΓΕΡΟΥ

ΧΕΙΡΟΥΡΓΟΣ ΟΥΡΟΛΟΓΟΣ

Αν. ΚΑΘΗΓΗΤΗΣ ΙΑΤΡΙΚΗΣ ΣΧΟΛΗΣ ΑΘΗΝΩΝ

ΑΝΔΡΟΛΟΓΙΚΟ ΙΑΤΡΕΙΟ Γ' ΠΑΝΕΠΙΣΤΗΜΙΑΚΗΣ ΟΥΡΟΛΟΓΙΚΗΣ ΚΛΙΝΙΚΗΣ

Επ. Διευθυντής ANDROCLINIC



- Δήλωση συμφερόντων: ουδέν

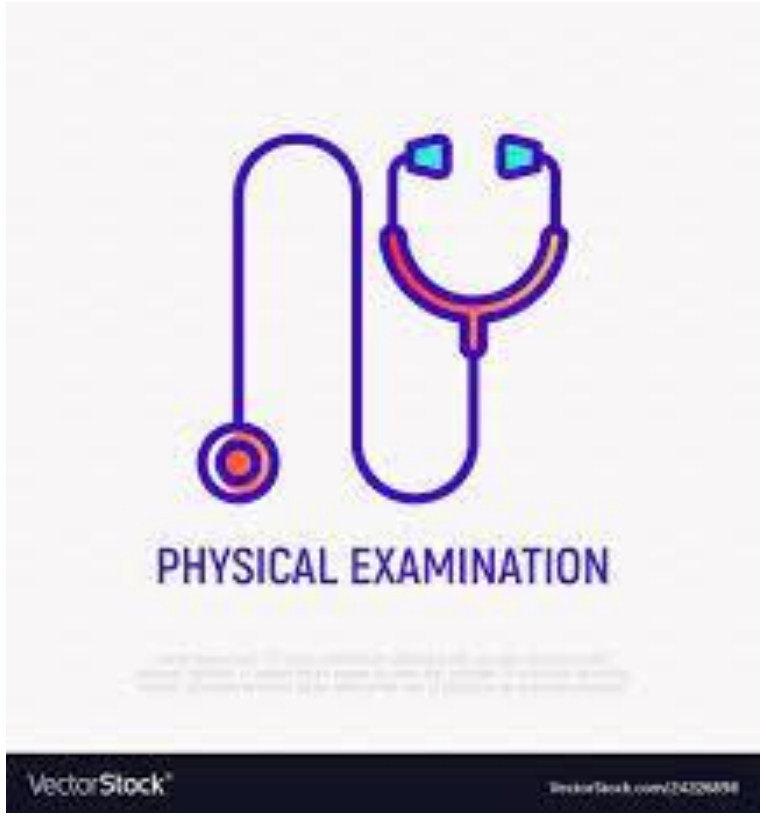
- Κλινικό σενάριο: αγόρι 14 ετών χτύπησε στο σχολείο. Δυνατό χτύπημα στους όρχεις.

ΤΙ ΠΡΕΠΕΙ ΝΑ ΓΝΩΡΙΖΟΥΜΕ

- Αμβλέα τραύματα είναι τα πιο συχνά συνήθως σε αθλητικά ατυχήματα.
- 50% περίπου θα έχουν ρηξη ινώδους χιτώνα.
- Ίσως πιο συχνά να τραυματίζεται ο Δεξιός όρχης

Τι κάνουμε?

ΚΛΙΝΙΚΗ ΕΞΕΤΑΣΗ + ΙΣΤΟΡΙΚΟ



ΙΣΤΟΡΙΚΟ

- Πως χτύπησε, πότε χτύπησε.
- Παθήσεις όρχεων/ οσχέου: κρυψορχία, ατροφία, βουβωνοκήλες.
  - Υπογονιμότητα?
  - Υπογοναδισμό?
- Αιματολογικά νοσήματα, λήψη αντιπηκτικών

ΚΛΙΝΙΚΗ ΕΞΕΤΑΣΗ: ψηλάφηση-επισκόπηση

- Θλαστικό τραύμα?(ΧΕΙΡΟΥΡΓΙΚΗ ΔΙΕΡΕΥΝΗΣΗ+- US)
- Αιμάτωμα?

  Προσοχή: η απουσία αιματώματος δεν αποκλείει τραύμα στον όρχη

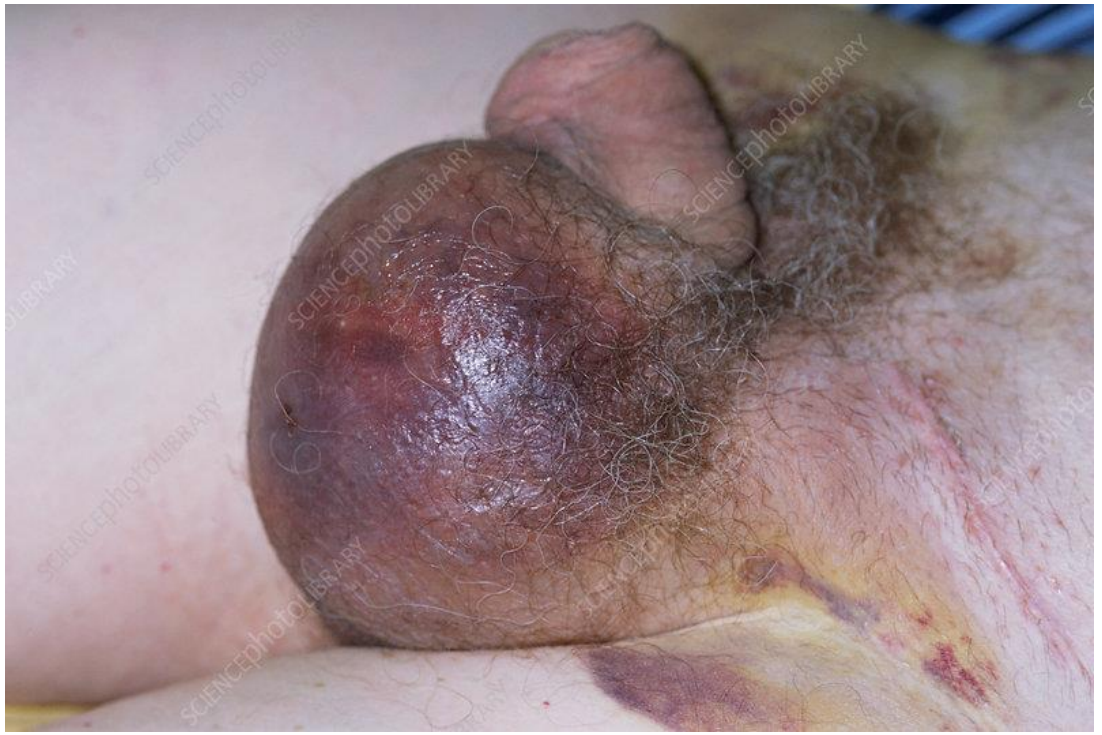
- Ψηλάφηση οσχέου- έλεγχος ακεραιότητας όρχη.
- Εξέταση βουβωνικής και κοιλιακής χώρας
- Προσοχή σε άτυπα συμπτώματα: πχ κοιλιακό άλγος, ναυτία

- In the study performed by Guichard et al., 16 patients with testicular rupture confirmed by surgery could not be diagnosed by sole physical examination, indicating that further auxiliary examination and evaluation are required in scrotal blunt trauma.
- Sometimes testicular tumor can be confused by scrotal trauma.

Diagnosis and management of testicular rupture after blunt scrotal trauma: a literature review. Int Urol Nephrol (2016) 48:1967–1976

ΕΥΡΗΜΑΤΑ

- Ο ασθενής είχε ένα αιμάτωμα σταθερό από την ώρα που χτύπησε.
- ‘Ορχης ψηλαφητός, ευαίσθητος, χωρίς να μπορεί να εκτιμηθεί κάποια ρήξη του ινώδους χιτώνα
- Τι κάνουμε μετά?



ΑΠΕΙΚΟΝΙΣΗ: τι να διαλέξω?

• Ultrasonography (US) is non-invasive and provides accurate imaging of the scrotal contents.

• Doppler studies give an indication of the perfusion within the testicle and the integrity of the vascular hilum.

• Areas with impaired blood flow indicate either an intratesticular haematoma or non-viable testicular tissue.

BAUS Recommendation

US of the scrotum is the recommended imaging modality for testicular trauma.

British Association of Urological Surgeons (BAUS) consensus document for the management of male genital emergencies - testicular trauma. BJU Int 2018; 121: 840–844

- Scrotal ultrasonography (US) is the first-line imaging method in blunt scrotal trauma.
- Heterogeneous parenchyma echotexture and irregular margins are typical characteristics of testicular rupture in US. Some other sonographic imaging could also be detected in this case, such as decreased or loss of blood flow on color or power Doppler sonography, hematocele formation and scrotal wall thickening.

Diagnosis and management of testicular rupture after blunt scrotal trauma: a literature review. Int Urol Nephrol (2016) 48:1967–1976

ΑΠΕΙΚΟΝΙΣΗ- εναλλακτικές?

- CT is the imaging modality of choice in polytrauma patients. It is able to locate testis dislocation, blood collections and active bleeding. Including
- It is often problematic to obtain a scrotal MRI in an emergency, limiting use in scrotal trauma. MRI is indicated to depict the tunica albuginea in cases equivocal for testicular fracture at US

Position statement 19

MRI can be used in cases of equivocal US findings to identify tears in tunica albuginea, to characterise haematomas, to differentiate tumours from haematomas, to assess presence/ absence of flow and to localise a dislocated testis.

British Association of Urological Surgeons (BAUS) consensus document for the management of male genital emergencies - testicular trauma. BJU Int 2018; 121: 840–844

- MRI is an auxiliary examination method in soft tissue disease, and it is taken as a vital second-line examination strategy in distinguishing scrotal disease when the result of US is inconclusive

Diagnosis and management of testicular rupture after blunt scrotal trauma: a literature review.

Int Urol Nephrol (2016) 48:1967–1976

ΑΠΕΙΚΟΝΙΣΗ:

ΕΠΙΛΟΓΗ:US οσχέου+ doppler οσχέου

- Early after trauma, haematomas may be isoechoic to testis and difficult to identify at US. In patients with significant scrotal trauma and unremarkable scrotal US, depending on the clinical judgement, it may be appropriate to repeat US in 24 h to detect intratesticular haematoma which may not be apparent at the time of presentation.

Imaging in scrotal trauma: a European Society of Urogenital Radiology Scrotal and Penile Imaging Working Group (ESUR-SPIWG) position statement.
European Radiology (2021) 31:4918–4928

ΕΥΡΗΜΑΤΑ ΑΠΕΙΚΟΝΙΣΗΣ

- Ρήξη Ινώδους Χιτώνα
- Αιμορραγία που μάλλον έχει σταματήσει
- Έξοδος Ορχικού ιστού από το σημείο ρήξης

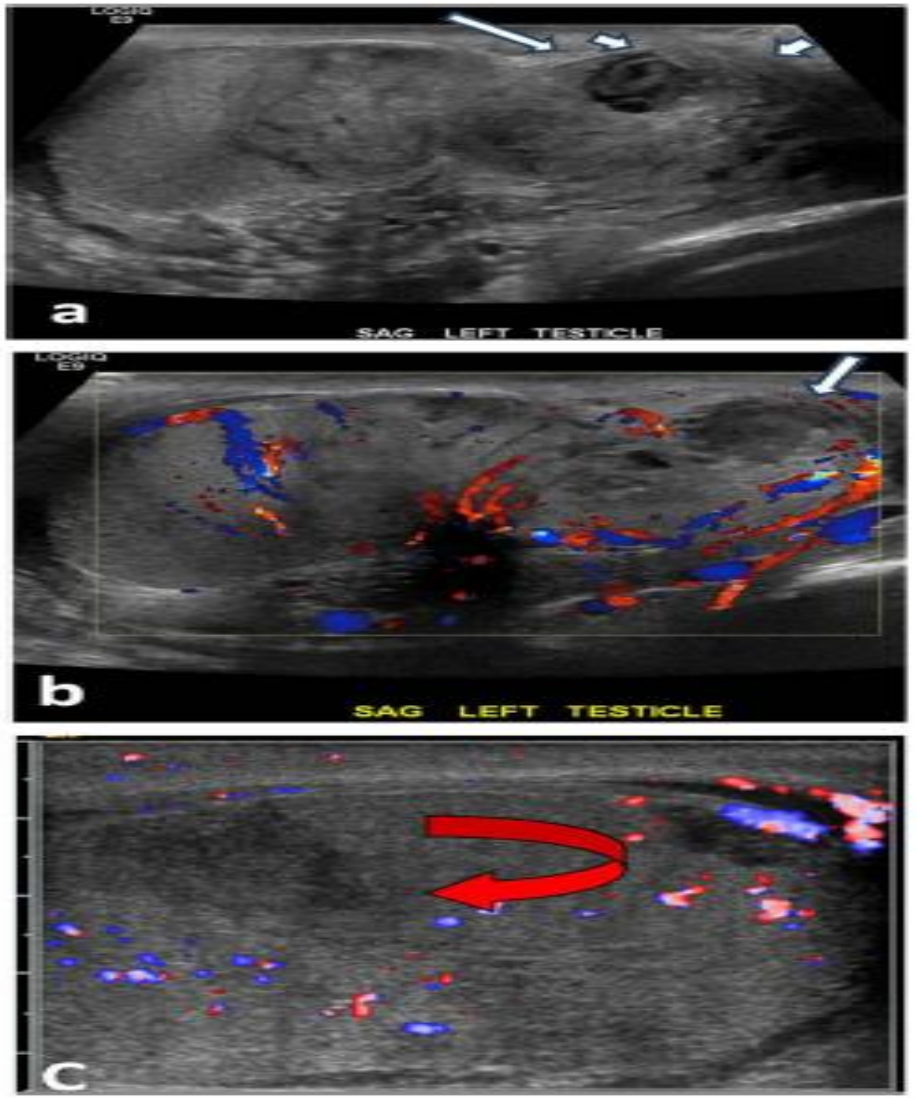


Fig. 2 Testicular rupture and fracture. a Contour abnormality of the lower pole of the testis with protrusion of the testicular parenchyma (short arrows) through the ruptured tunica albuginea (long arrow). B Corresponding Colour Doppler image demonstrates avascularity in the extruded testicular tissue (arrow). Features indicate testicular rupture. c A linear, hypoechoic area through the testicular parenchyma with absent vascularity in another patient status post testicular trauma representing testicular fracture (curved arrow)

ΤΙ ΚΑΝΟΥΜΕ?

ΤΙ ΓΝΩΡΙΖΟΥΜΕ

- Current dominant management strategy for testicular rupture is surgical exploration and repair in early 72 h. Some early literature reported that testis salvage rate would decrease from 80–90 % to 45–55 % in delayed surgery.
- Orchiectomy may be performed if repair is impossible.
- Comparing with surgical intervention in testicular rupture, conservative regimen is controversial under some circumstances. Some authors think that the possibility of infection and atrophy following hematocele or necrotic testicular tissues would be increased in conservative management.
- Conservative regimen includes scrotal support, antibiotics (when necessary, such as hematoma is formed), proper pain control, ice pack, bed rest and serial ultrasound

Diagnosis and management of testicular rupture after blunt scrotal trauma: a literature review.

Int Urol Nephrol (2016) 48:1967–1976

ΤΙ ΚΑΝΟΥΜΕ?

- ΧΕΙΡΟΥΡΓΙΚΗ ΔΙΕΡΕΥΝΗΣΗ
- ΣΥΡΡΑΦΗ ή ΟΡΧΕΚΤΟΜΗ?

- «Our decision to remove or salvage an injured testicle is based on the appearance of the testicle after exposure. If there are a substantial amount of remaining viable tubules with evidence of robust blood flow to the testicle, salvage is attempted, knowing that progressive testicular atrophy may occur in spite of a successful repair».

Male genital trauma at a level 1 trauma center. World Journal of Urology (2020) 38:3283–3289

ΠΡΟΒΛΗΜΑΤΙΣΜΟΙ ΓΟΝΙΜΟΤΗΤΑΣ

- Προϋπάρχοντα προβλήματα γονιμότητας
- Μονήρης όρχης

Τι γνωρίζουμε

- Fertility options are limited to replantation, emergency TESE, and cryopreservation of sperm after injury.

Considerations in fertility preservation in cases of testicular trauma. BJU Int 2018; 121: 466–471

Table 1 Complications and rates of follow-up by injury type in male genital trauma at a level 1 trauma center, 2013–2018

	Penile, penetrating	Penile, blunt	Scrotal, penetrating	Scrotal, blunt	Total patients[a]
Injury					
Total cases	22	23	31	53	118
Number seen for any follow-up (% of total)	14 (64)	17 (74)	19 (61)	19 (36)	60 (51)
	Cases (% of follow-up group)				Total patients with complication[b]
Complication					
Infertility	0 (0)	0 (0)	0 (0)	1 (5)	1 (2)
Hypogonadism	1 (7)	2 (12)	3 (16)	2 (11)	5 (8)
Impotence	1 (7)	1 (6)	1 (5)	1 (5)	2 (3)
Voiding dysfunction	1 (7)	2 (12)	1 (5)	2 (11)	3 (5)
Psychological distress	1 (7)	2 (12)	1 (5)	1 (5)	4 (7)
Total patients with injury and any complication	3 (21)	3 (18)	4 (21)	3 (16)	9 (15)

Male genital trauma at a level 1 trauma center. World Journal of Urology (2020) 38:3283–3289

ΜΕΤΑ ΤΗΝ ΑΝΤΙΜΕΤΩΠΙΣΗ ΧΡΕΙΑΖΕΤΑΙ ΚΑΤΙ?

ΠΑΡΑΚΟΛΟΥΘΗΣΗ

- US follow up is also indicated to detect complications such as infection and ischaemia. Ten percent of intratesticular tumours are detected incidentally in patients presenting with a history of scrotal trauma. Therefore, it is mandatory to follow all intratesticular parenchymal abnormalities to complete resolution by US such that incidental intratesticular tumours are not missed

European Radiology (2021) 31:4918–4928

- Testicular atrophy may occur in patients after testicular rupture during follow-up.
- Decreased testicular function, such as spermatogenesis and hormone function, will also be faced with due to testicular atrophy. Hence, physical examination, scrotal US, semen analysis and sexual hormone measurement would be performed in follow-up.

Diagnosis and management of testicular rupture after blunt scrotal trauma: a literature review.

Int Urol Nephrol (2016) 48:1967–1976

ΠΑΡΑΚΟΛΟΥΘΗΣΗ

- Δεν υπάρχουν σαφείς οδηγίες
- US αναλόγως από λίγες ημέρες έως και μήνες.
- Ορμονικός έλεγχος
- Έλεγχος γονιμότητας

Management of Blunt Testicular Trauma

1. Blunt trauma is often unilateral and can be managed conservatively in most cases.
2. The absence of scrotal swelling or haematoma does not preclude a testicular injury.
3. Arrange urgent scrotal US to assess the testicle and scrotal contents.
4. The presence of a large haematoma or haematocoele indicates significant injury to either the testicle or para-testicular structures and exploratory surgery is recommended to salvage the testicle and reduce postoperative complications.
5. Disruption of the tunica albuginea on US indicates a testicular rupture.
6. If the tunica albuginea is intact on US, and the haematoma is small then conservative therapy using a scrotal support, analgesia, and anti-inflammatory medication is recommended.
7. In cases of testicular rupture with large tunical tears, prompt exploration and surgical repair is required.
8. If there is an expanding haematocoele or haematoma then surgical exploration is recommended.

BAUS Recommendation

Early scrotal exploration and testicular repair is necessary for testicular rupture and large haematocoeles. It is also indicated in expanding haematomas or if there is no improvement after 72 h of conservative treatment.

British Association of Urological Surgeons (BAUS) consensus document for the management of male genital emergencies - testicular trauma. BJU Int 2018; 121: 840–844

Intra-testicular Haematoma Without Tunical Breach

1. Small intra-testicular haematomas with only mild-to moderate pain require conservative treatment only.
2. Repeat US should be performed within 48 h to assess progression.
3. Exploration should be considered in large intra-testicular haematomas with severe pain or those that continue to expand.

BAUS Recommendation

Exploration is recommended in all large or expanding intratesticular haematomas and in patients with severe pain.

Repeat US should be performed within 48 h in patients treated conservatively

British Association of Urological Surgeons (BAUS) consensus document for the management of male genital emergencies - testicular trauma. BJU Int 2018; 121: 840–844

Management of Penetrating Scrotal Injuries

1. Manage coexistent life-threatening and serious injuries first.
2. Determine the entry and exit sites of the penetrating wound.
3. Arrange urgent scrotal US to assess the testicles and scrotal contents.
4. Scrotal exploration is usually necessary to determine the severity of the injury, washout of the wound, and to control intra-scrotal haemorrhage.
5. If the tunica albuginea is breached, debridement of nonviable seminiferous tubules and primary closure of the tunica albuginea should be performed.
6. Give a tetanus booster if the patient is not up to date or is uncertain of their tetanus status.
7. Give broad spectrum antibiotic therapy as per local microbiology guidelines (usually penicillin based unless there is a penicillin allergy).

BAUS Recommendation

For penetrating injuries, scrotal exploration is usually necessary to determine the extent of the injury, perform adequate washout and control intra-scrotal haemorrhage

British Association of Urological Surgeons (BAUS) consensus document for the management of male genital emergencies - testicular trauma. BJU Int 2018; 121: 840–844

ΕΥΧΑΡΙΣΤΩ ΠΟΛΥ