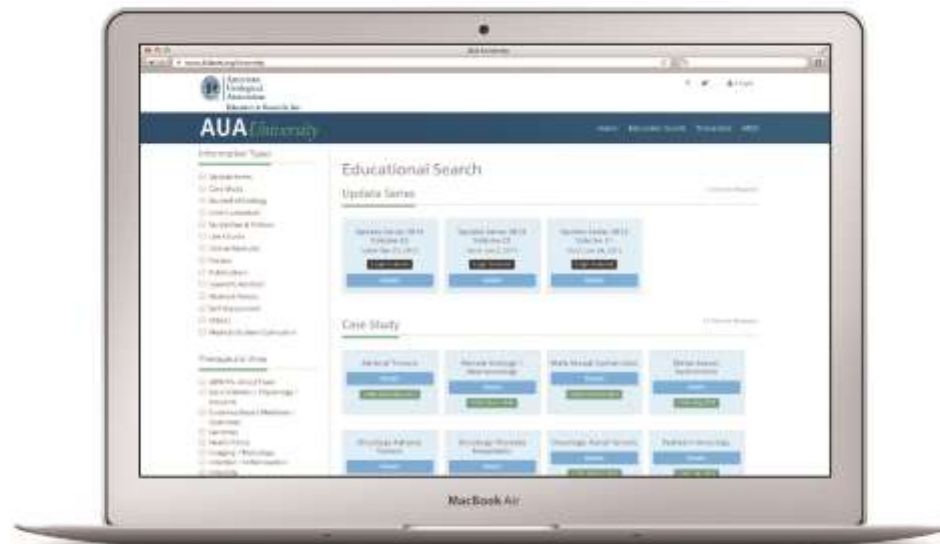


The New AUA UROTRAUMA Guidelines CURA 2014 - AUA Lecture

Michael Coburn, MD
Chairman, Department of Urology
Baylor College of Medicine
Houston, Texas

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UROTRAUMA: AUA Guideline

April 2014

American Urological Association (AUA) Guideline

UROTRAUMA: AUA GUIDELINE

Allen F. Morey, MD; Steve Brandes, MD; Daniel David Dugi III, MD; John H. Armstrong, MD; Benjamin N. Breyer, MD; Joshua A. Broghammer, MD; Bradley A. Erickson, MD; Jeff Holzbeierlein, MD; Steven J. Hudak, MD; Jeffrey H. Pruitt, MD; James T. Reston, PhD, MPH; Richard A. Santucci, MD; Thomas G. Smith III, MD; Hunter Wessells, MD

Purpose: The authors of this guideline reviewed the urologic trauma literature to guide clinicians in the appropriate methods of evaluation and management of genitourinary injuries.

UROTRAUMA Guideline

- Systematic literature review (1990-2012)
- 372 studies met inclusion criteria
- Formulate Standards, Recommendations or Options
- Strength of evidence:
 - A: high
 - B: moderate
 - C: low
- *Mostly B, C, Clinical Principles and Expert Opinion*

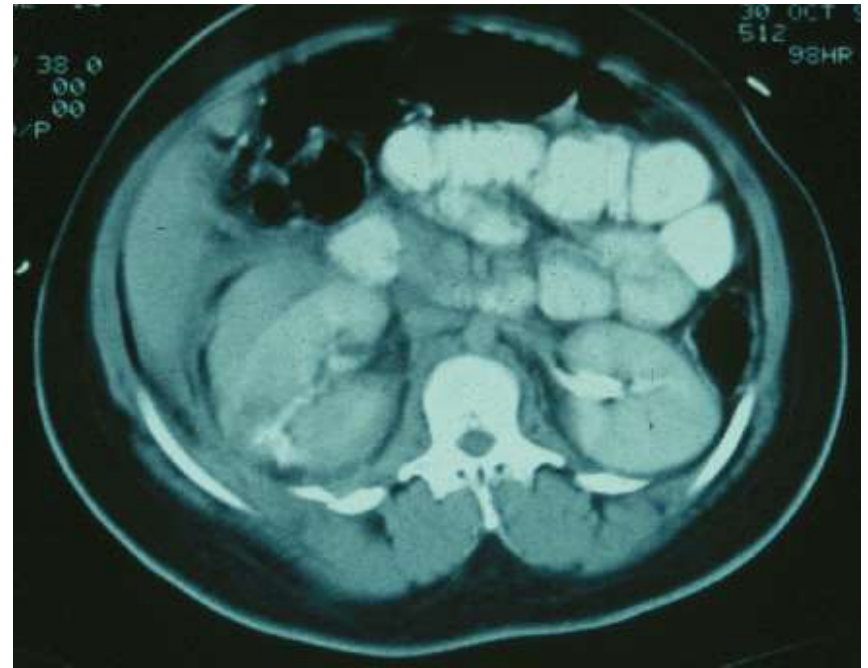
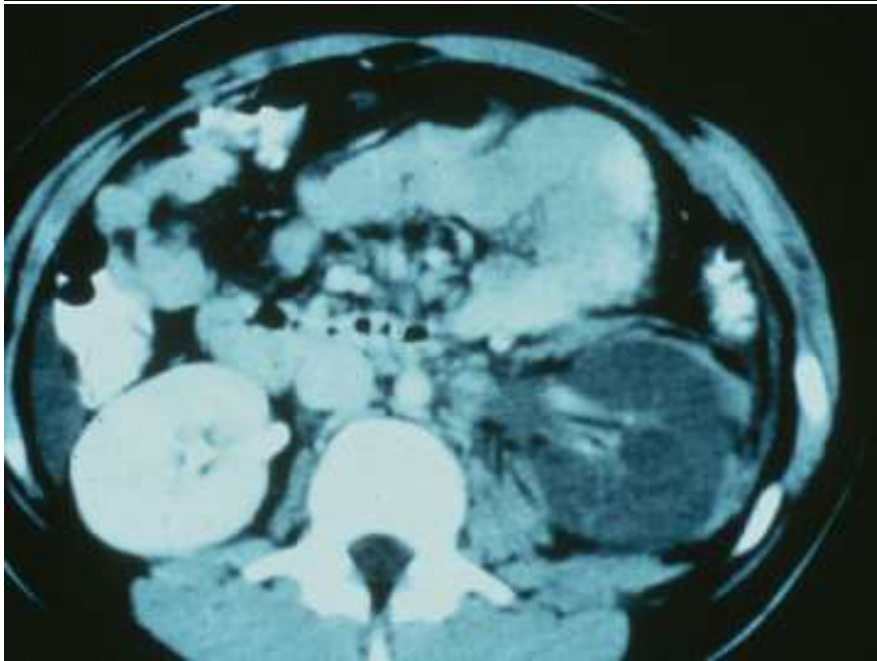
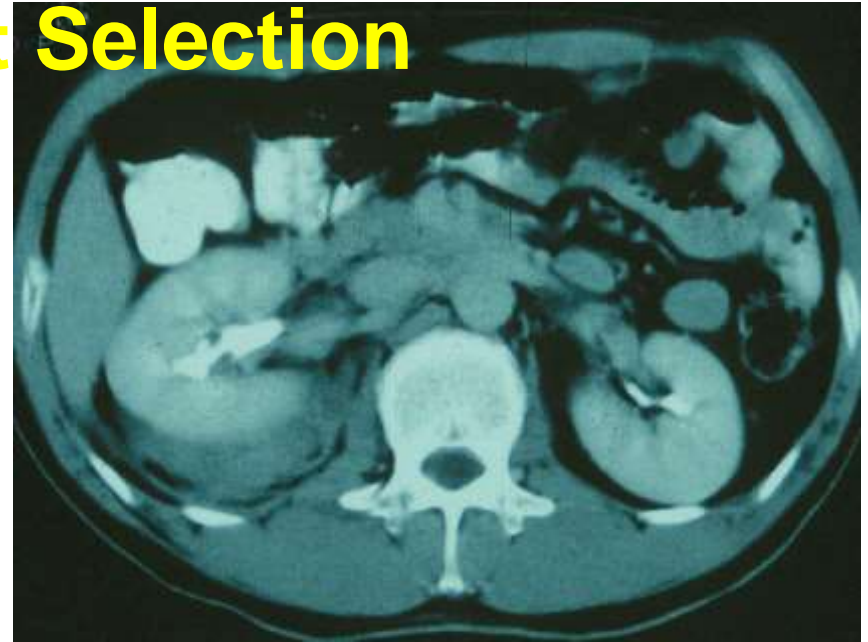
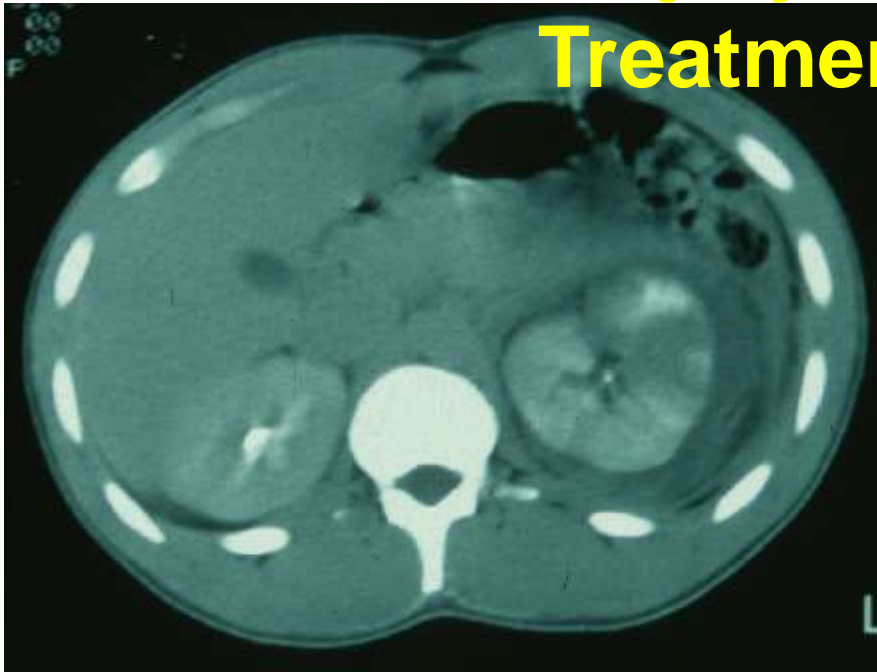
UROTRAUMA Guideline

- Renal
- Ureteral
- Bladder
- Urethral
- Genital

Urotrauma Guidelines - Renal

- Imaging with contrast CT for gross hematuria, or microhematuria with shock, suspicious mechanism of injury or physical findings (B)
- Use noninvasive management in stable patients with blunt injury (B)
- Immediate intervention (embolization, surgery) for hemodynamic instability or failure to respond to resuscitation (B)
- Perform urinary drainage for complications (urinoma, ileus) (C)

Renal Injury – The Real World: Treatment Selection



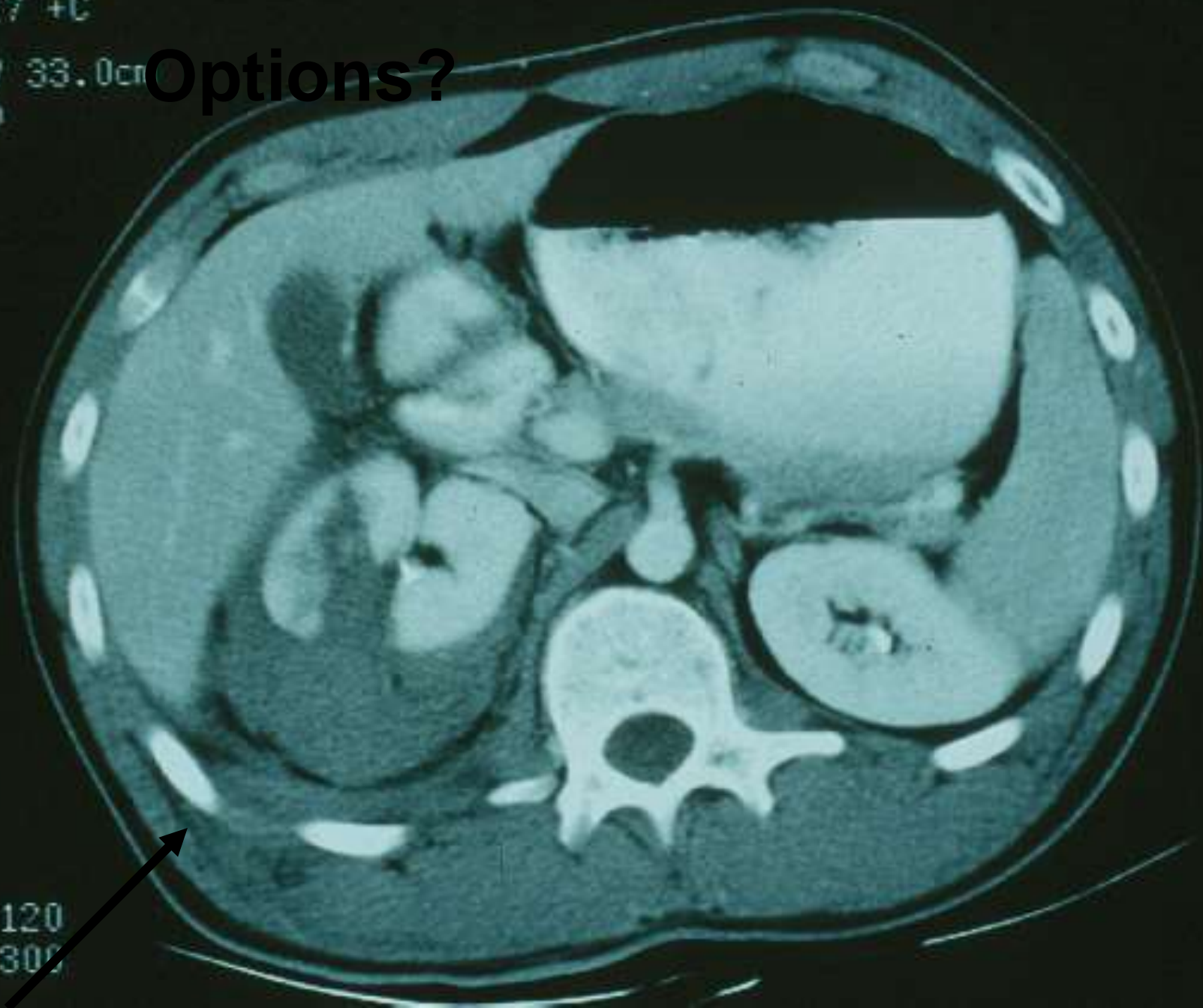
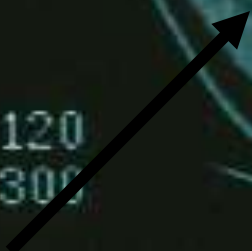
KV 117.5
Im:17 +C
DFOV 33.0cm
STND

Options?

R
1
4
9

R

KV 120
mA 300



RUN 51
SMB
L +0
U +0

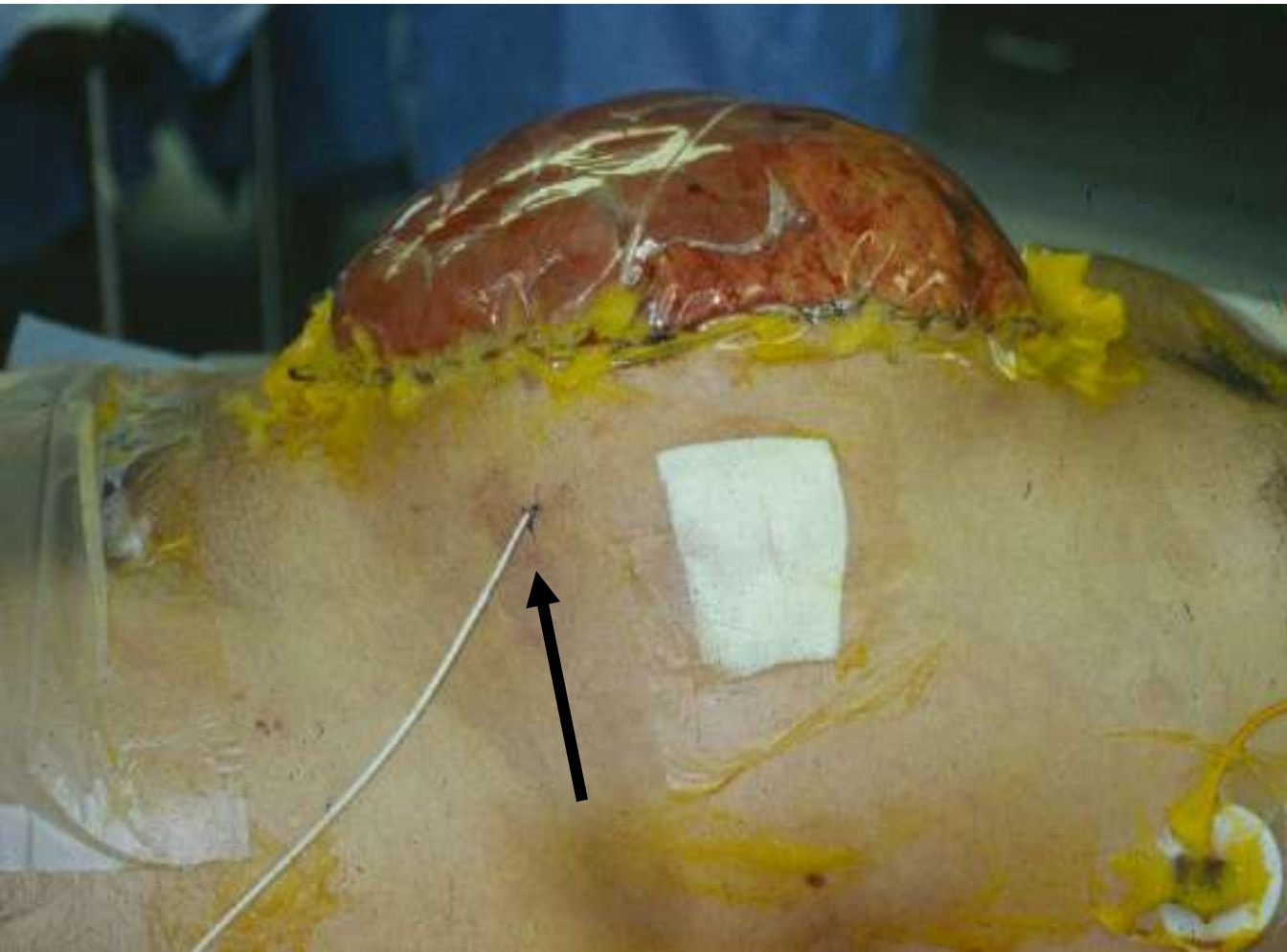
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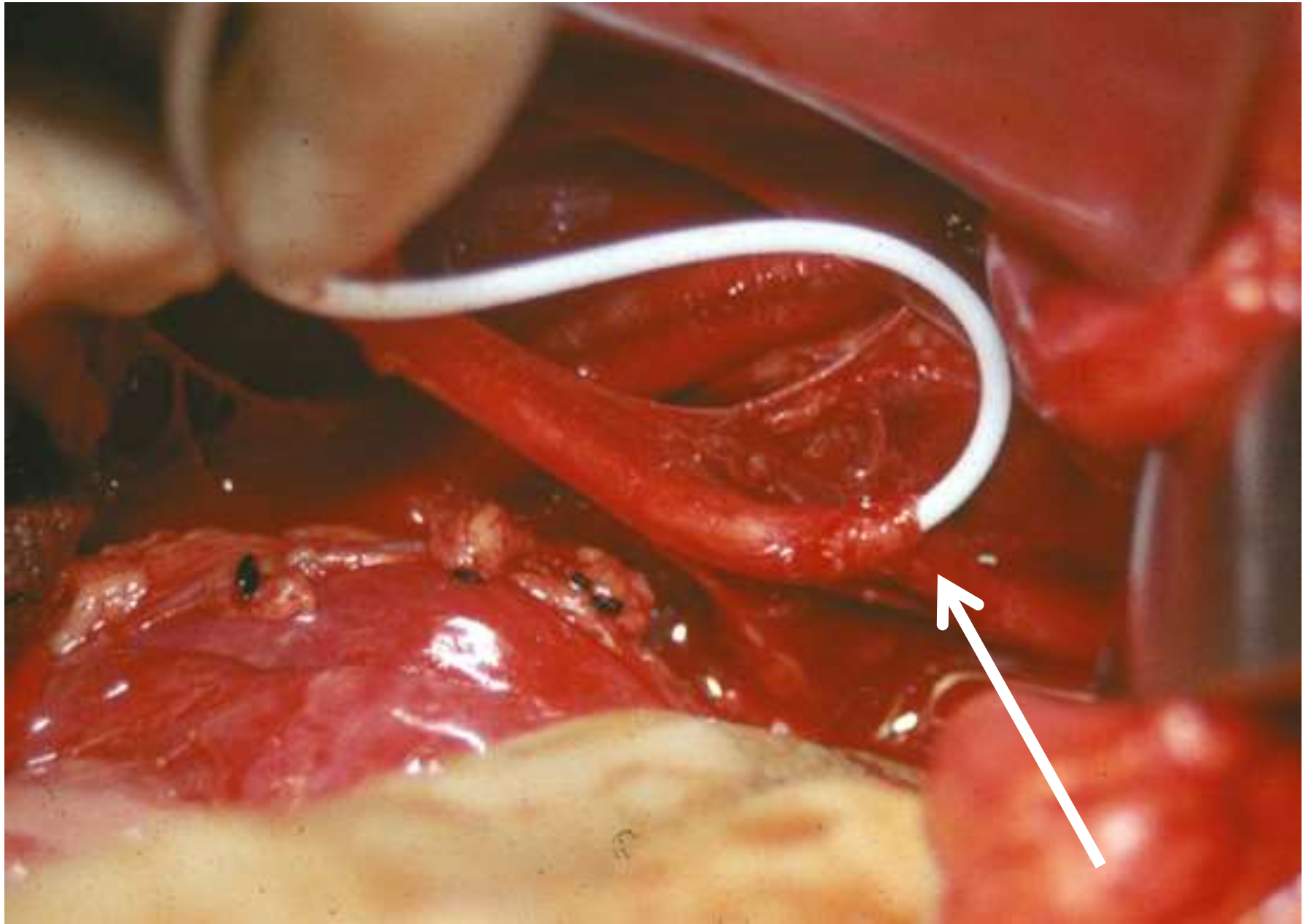
Urotrauma Guidelines - Ureteral

- Perform contrast CT with delayed images to detect ureteral injury (C)
- Repair traumatic ureteral laceration at time of exploration in stable patients (C)
- Delayed definitive management acceptable in unstable patient (CP)
- Manage ureteral contusion with stenting (EO)
- Proximal injuries >> primary repair over stent (C)
- Distal injuries >> reimplantation (C)



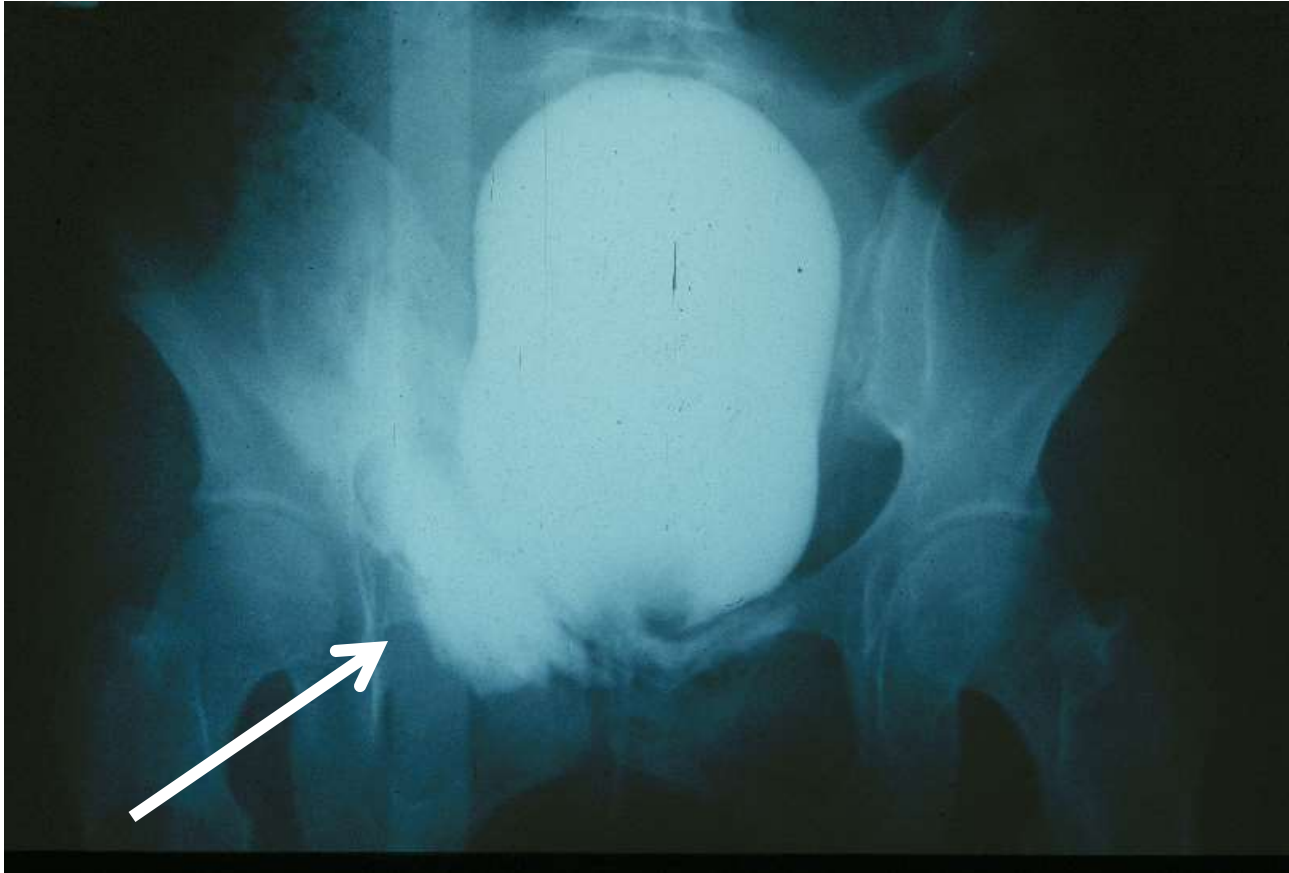


- GSW, vascular and ureteral injuries
- Damage control for distal ureteral injury using cutaneous ureterostomy
- View of damage control surgery in urological trauma?
Overutilized?



Urotrauma Guidelines - Bladder

- Perform cystogram (plain film or CT) for stable patient with gross hematuria with pelvic fracture, or suspicious mechanism of injury (B)
- Intraperitoneal rupture or penetrating injury >> surgical repair (B)
- Uncomplicated extraperitoneal rupture >> catheter drainage (C)
- Complicated extraperitoneal rupture >> surgical repair (C)

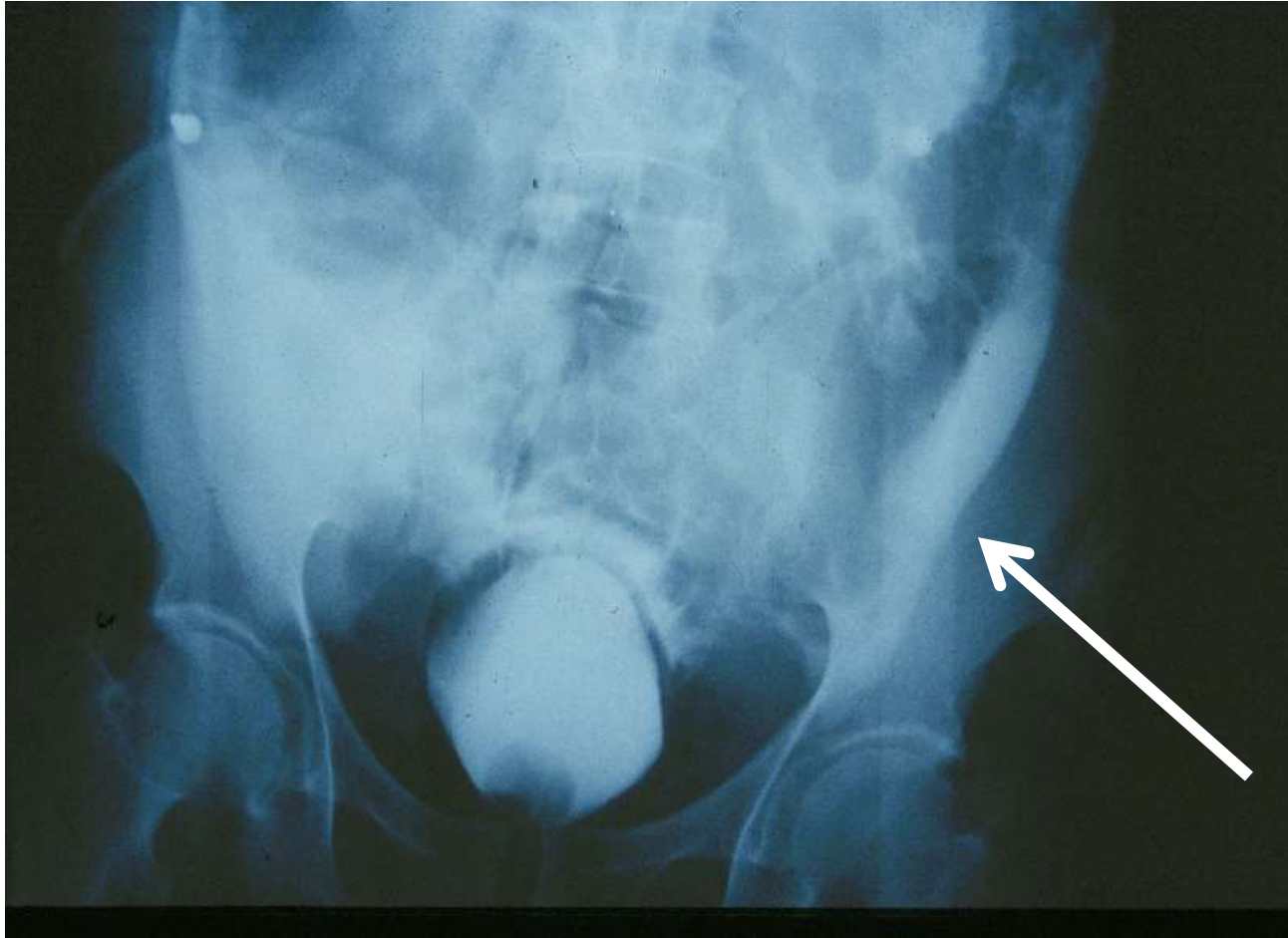


Pelvic fracture

**Stress
cystogram**

**Extraperitoneal
rupture:**

**Nonoperative
catheter mngt**

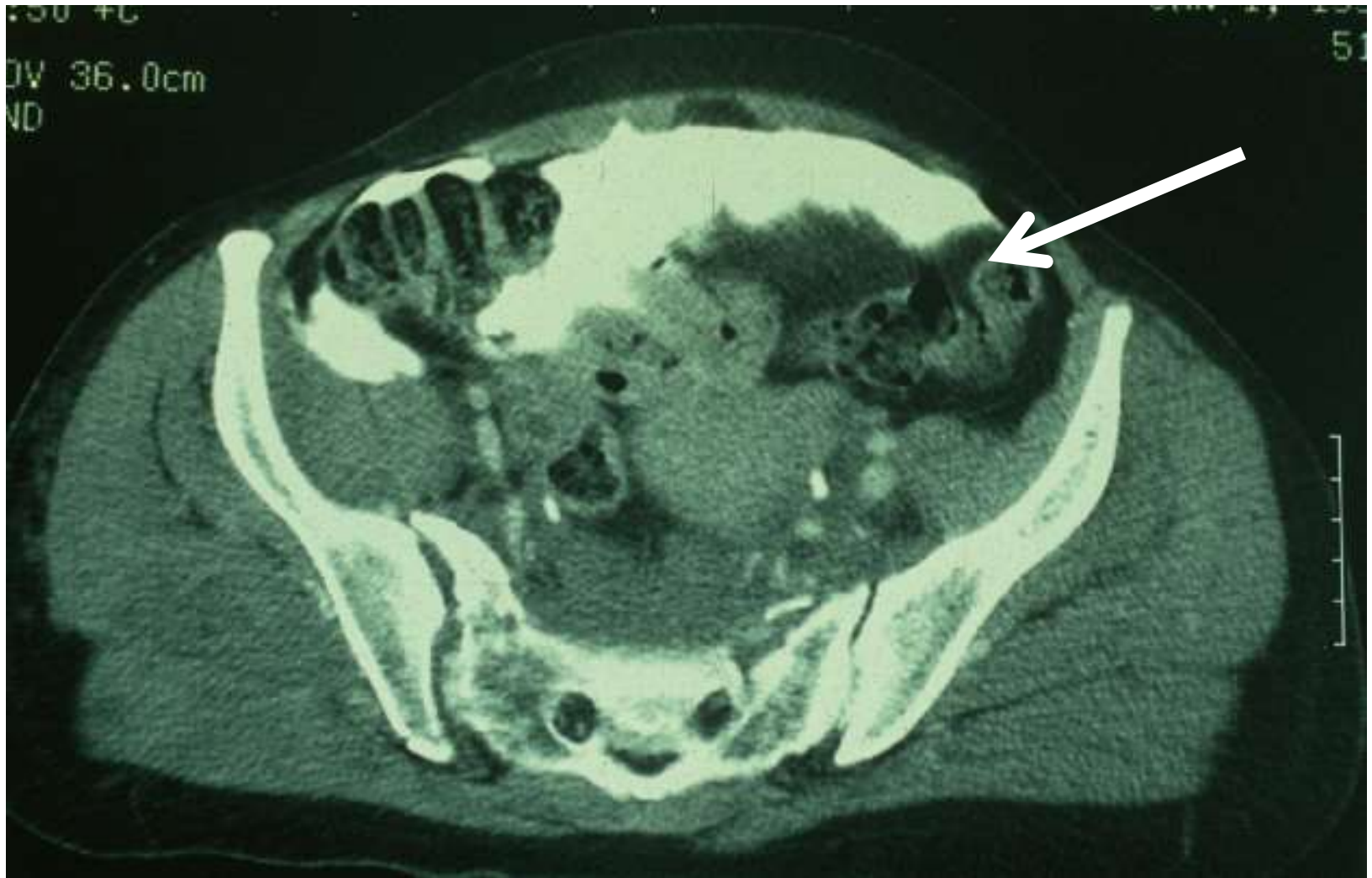


**Blow to lower
abdomen**

**Intraperitoneal
rupture**

**Contrast in
colic gutters
and between
loops of bowel:**

**Operative
repair**



**Contrast extravasation pattern:
Intra- or Extrapertitoneal Injury?**

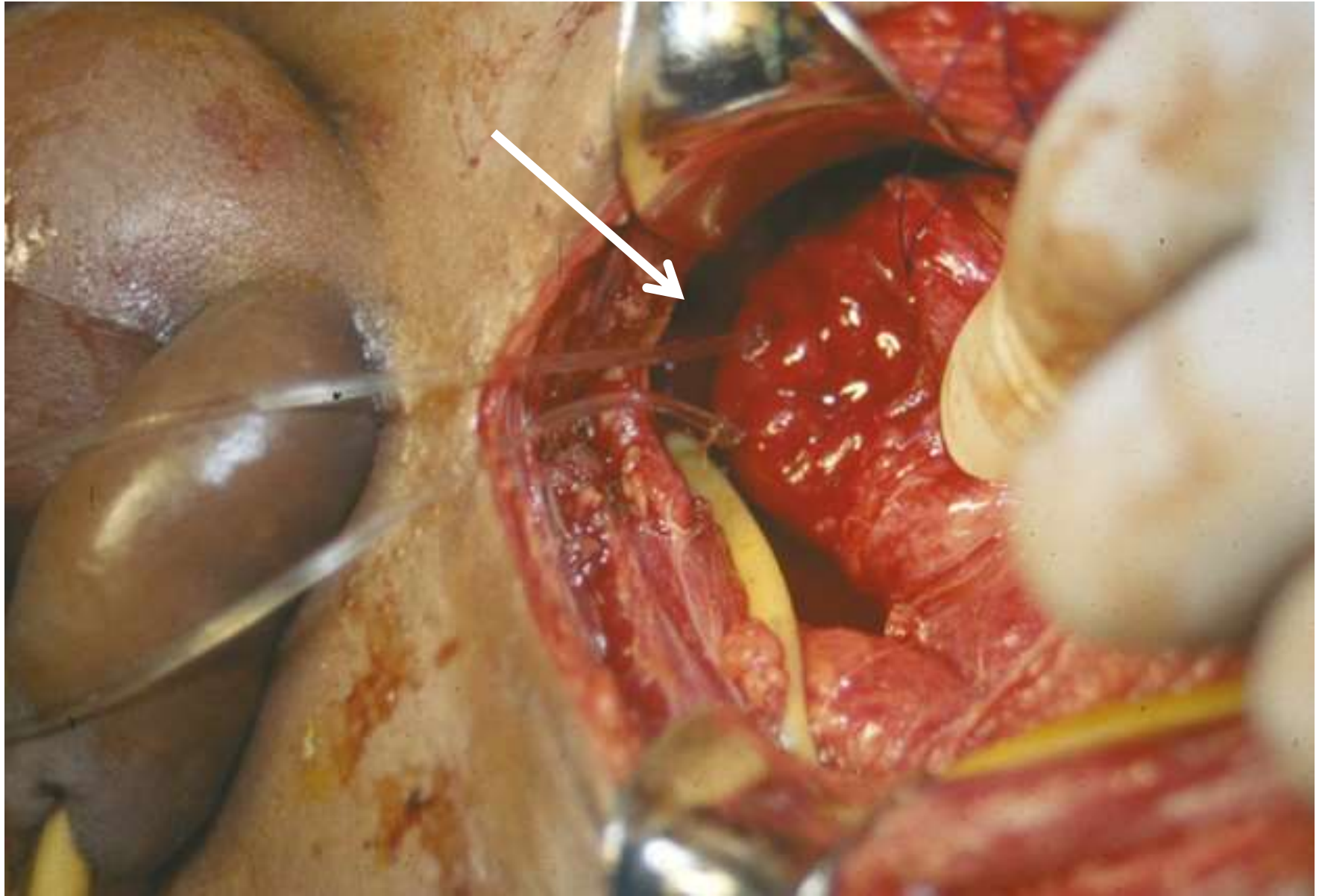


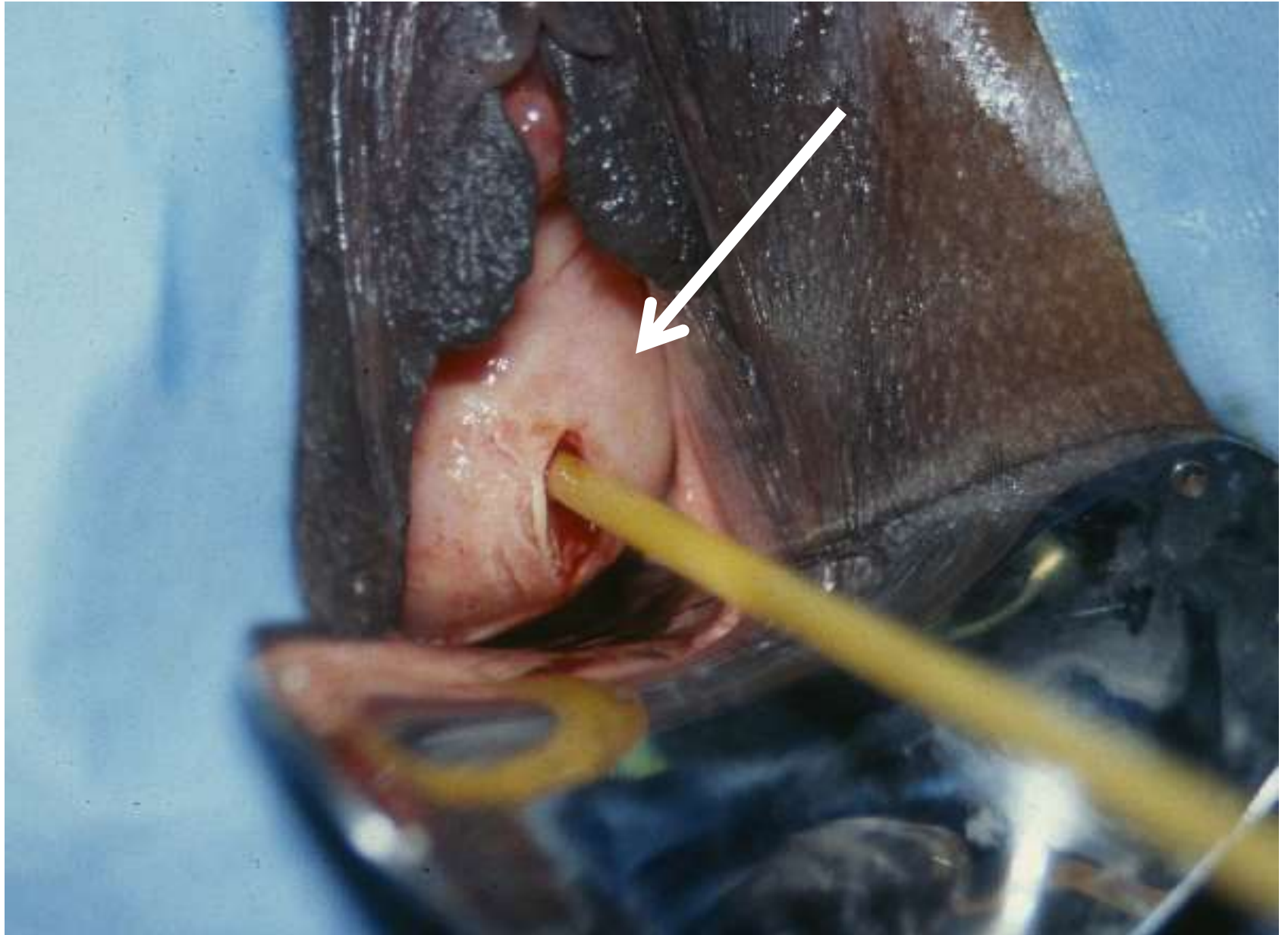
Pelvic fracture

CT cystogram

**Intraperitoneal
rupture**

**Contrast in
colic gutters
and outlining
pelvic organs**



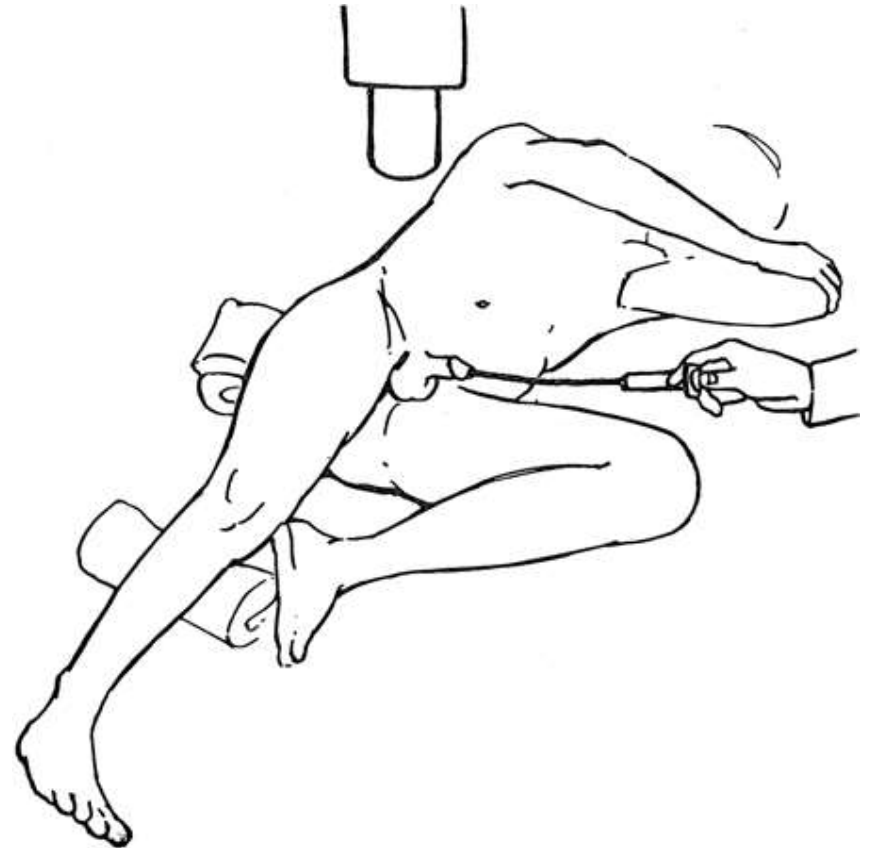


Urotrauma Guidelines - Urethral

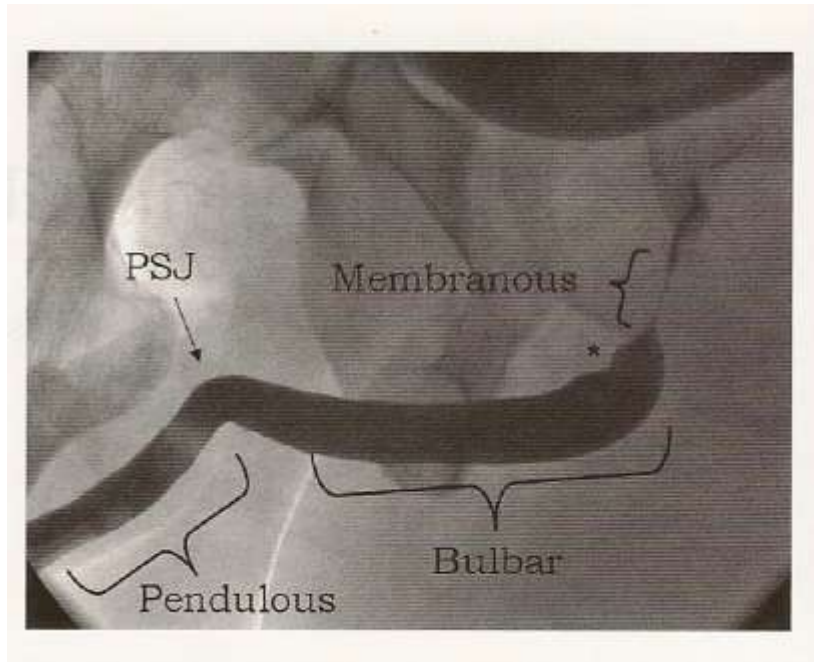
- Perform Retrograde Urethrogram when blood at meatus after pelvic fracture (C)
- Establish prompt urinary drainage for urethral injury with pelvic fracture (C)
- May place SP tube for pelvic fracture patients requiring internal fixation (EO)
- May perform PR in stable patients with pelvic fracture and urethral injury (C); Option
 - Avoid prolonged attempts
- Surgical repair for uncomplicated penetrating anterior urethral injuries
- Establish urinary drainage - straddle injuries (C);EO

Urethral Trauma

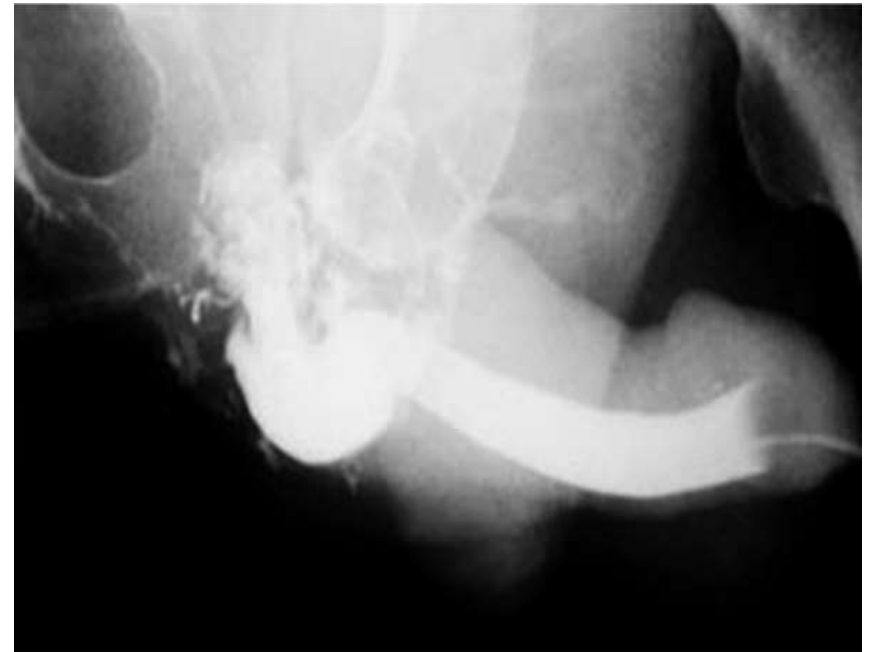
- Evaluation
 - Blood at meatus
 - 37-93% in posterior urethral injury
 - 75% in anterior urethral injury
 - Physical Exam
 - Hematoma or Swelling
 - “high riding prostate”
 - Retrograde Urethrogram



Urethral Trauma



Normal RUG



Posterior Urethral Injury on RUG

Urethral Trauma

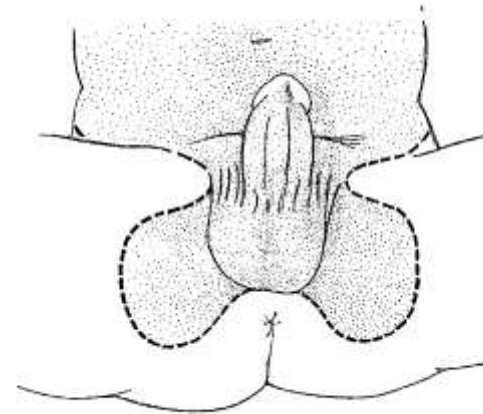
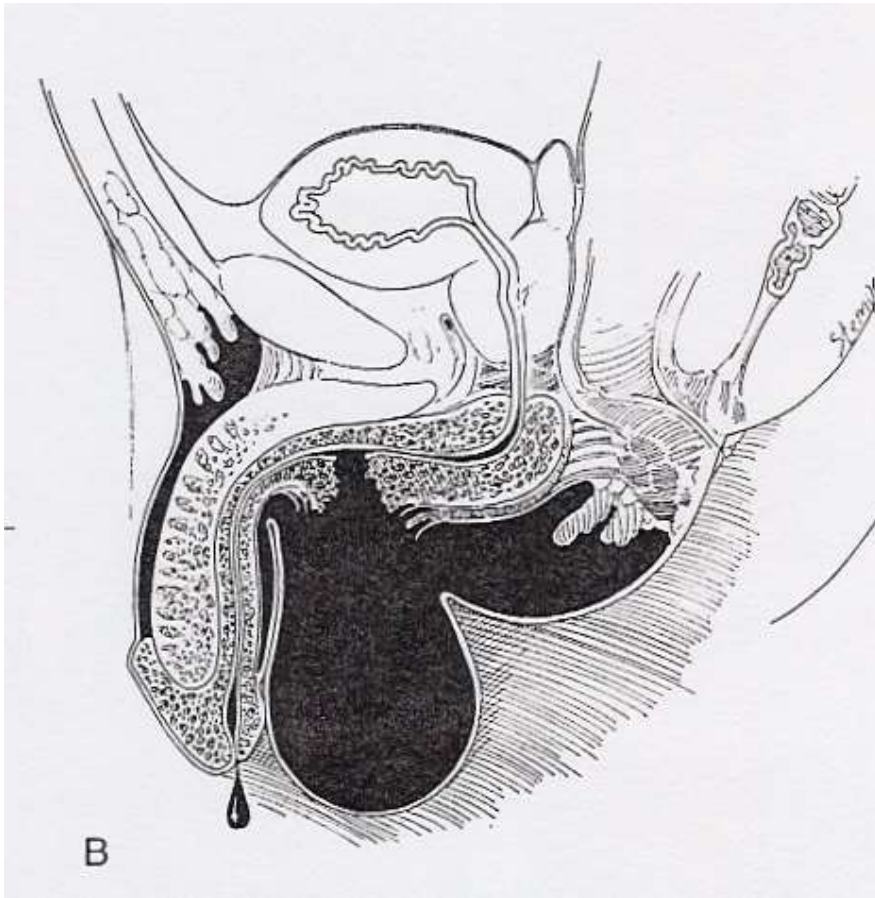
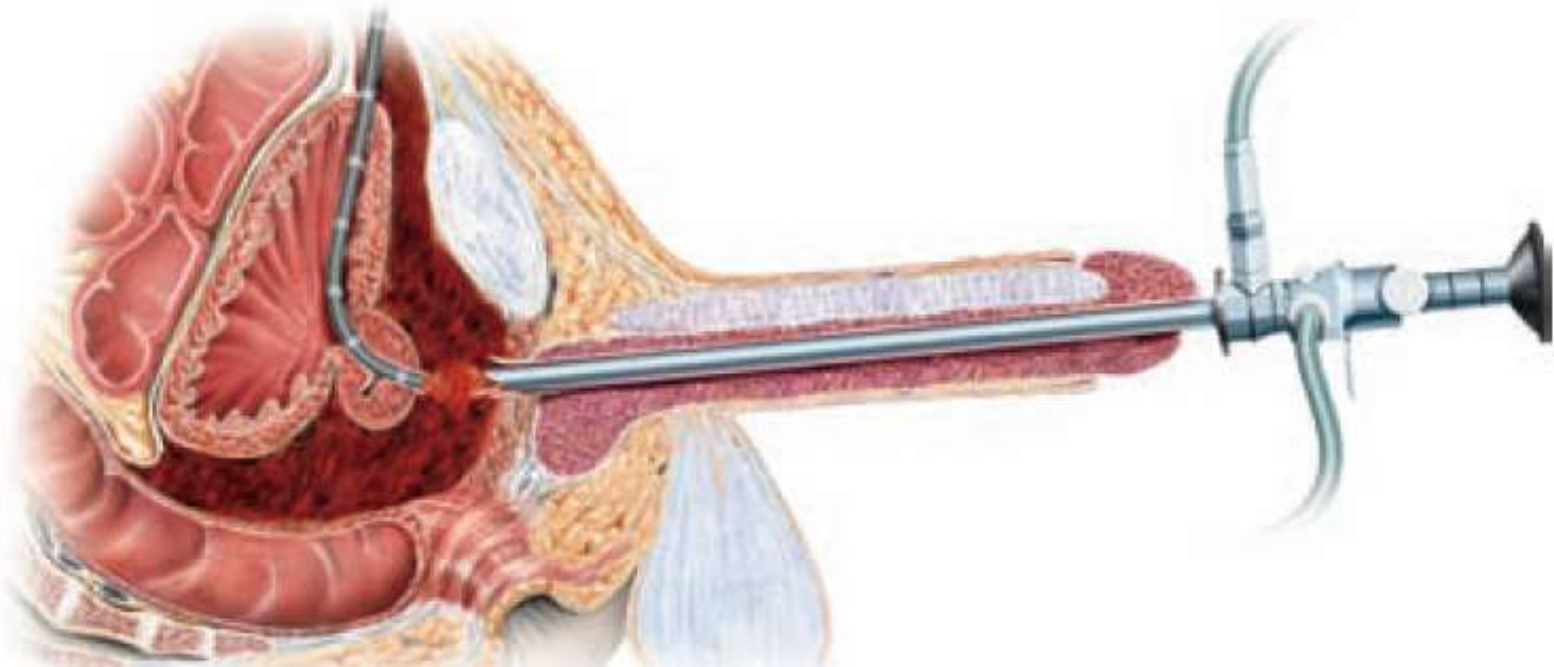


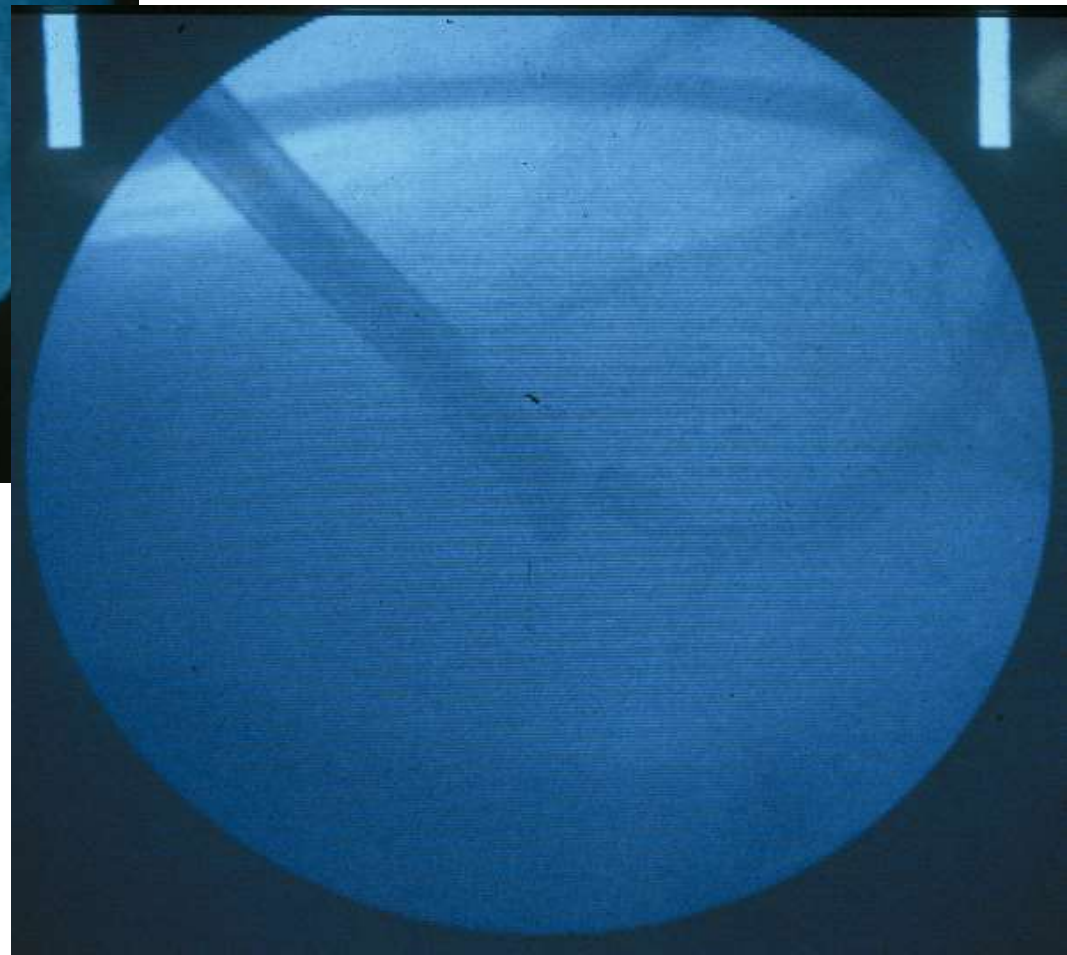
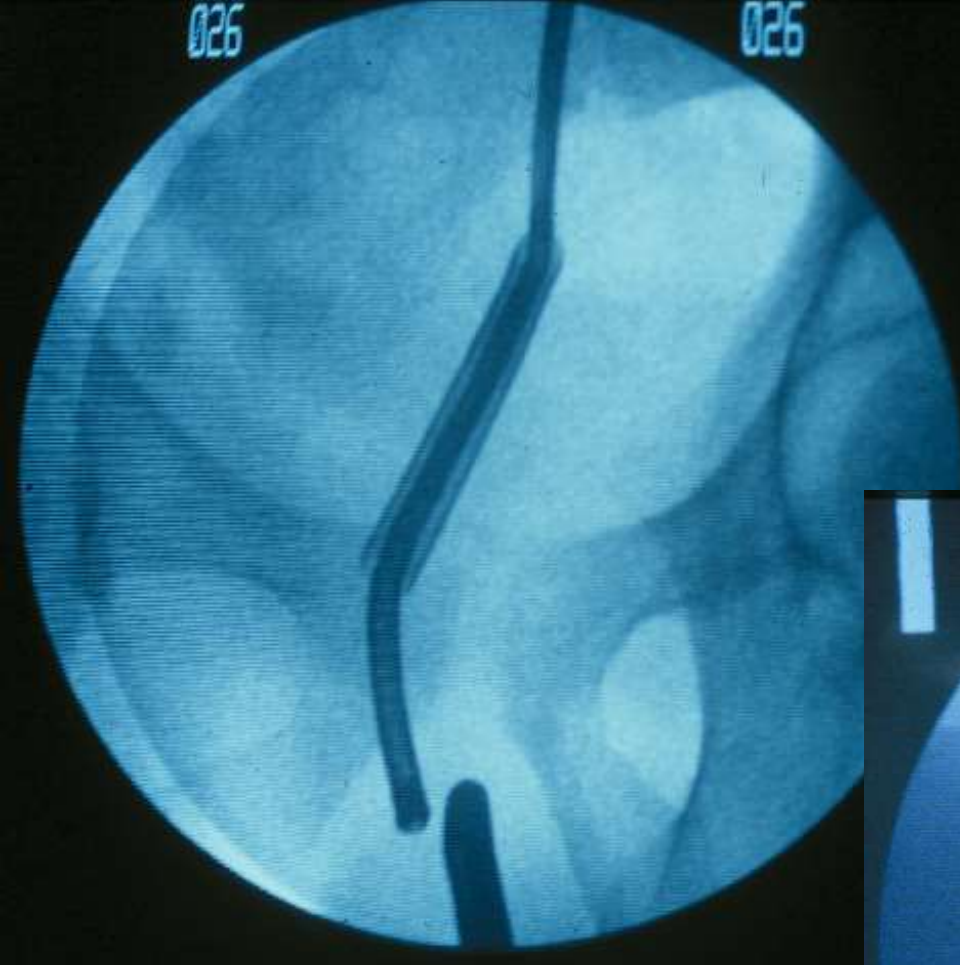
Figure 45-4. Potential extension of extravasation with disruption of Buck's fascia.

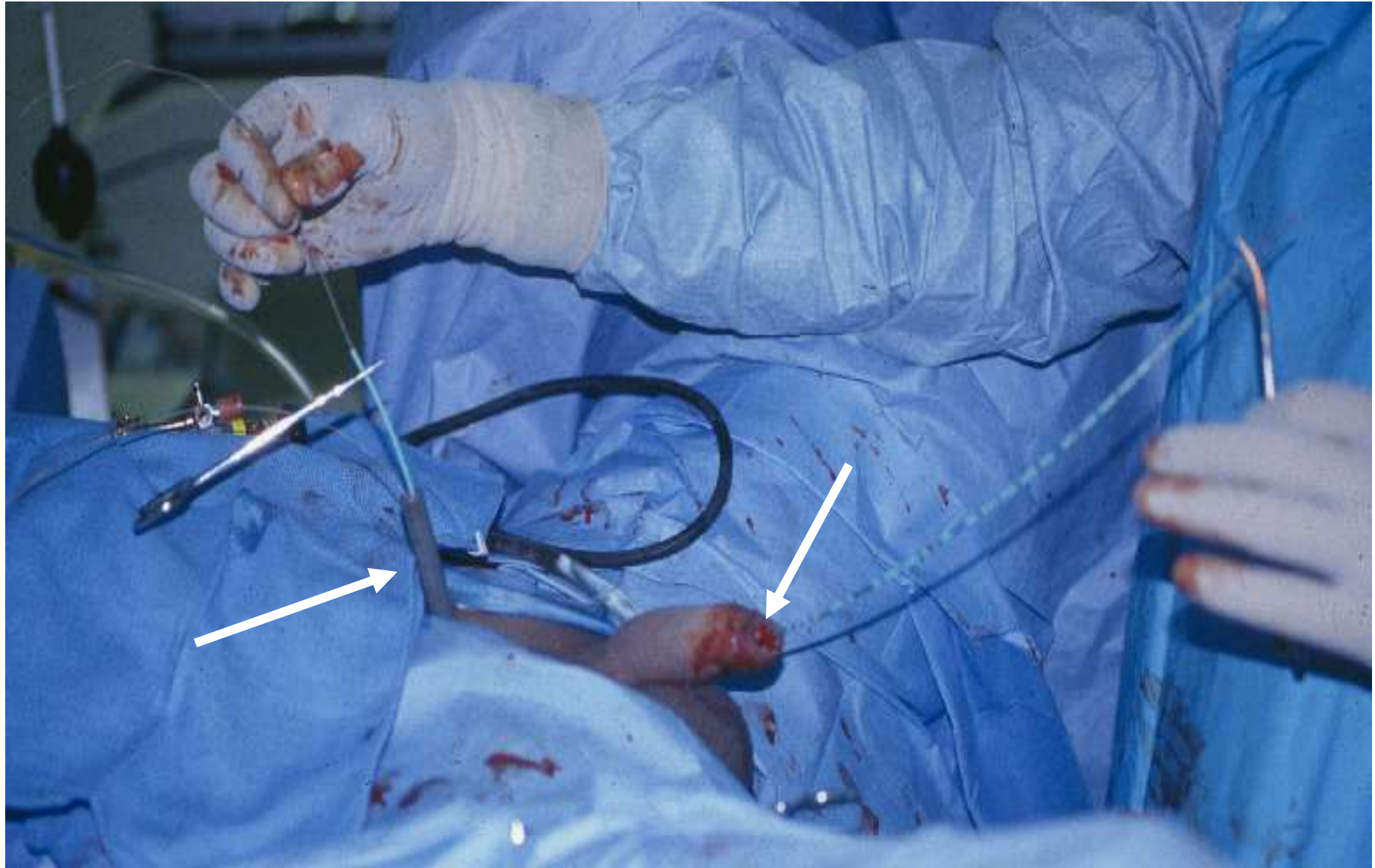
Anterior urethral injuries have
two layers for containment
Buck's Fascia
Colles Fascia
(continues as
Scarpa's)

Urethral Trauma



Endoscopic Realignment

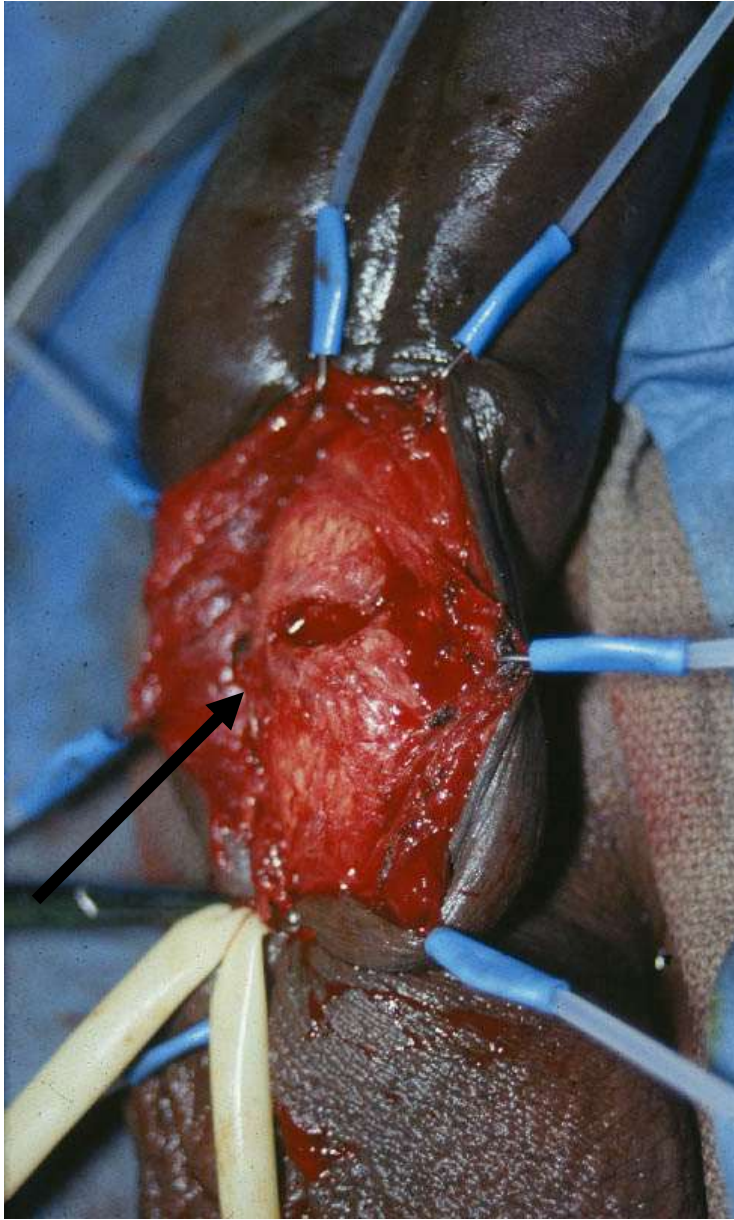




Urotrauma Guidelines - Penile

- Suspect penile fracture based on Hx, PEx(B)
- Promptly explore and repair penile fracture(B)
- Evaluate concomitant urethral injury(B)
- Perform prompt penile replantation for amputation injuries(B)

Blunt fracture of the penis: during sexual activity

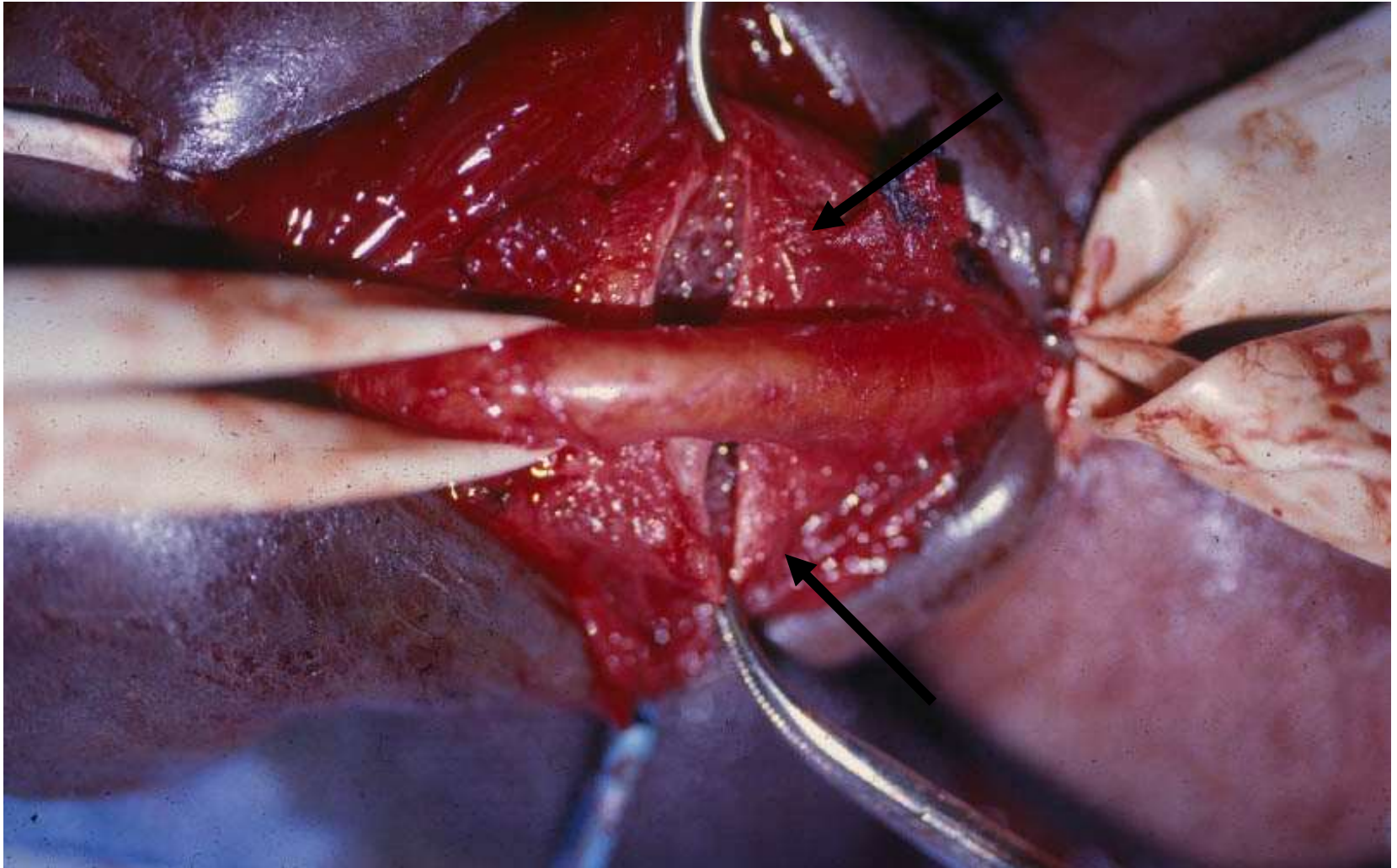


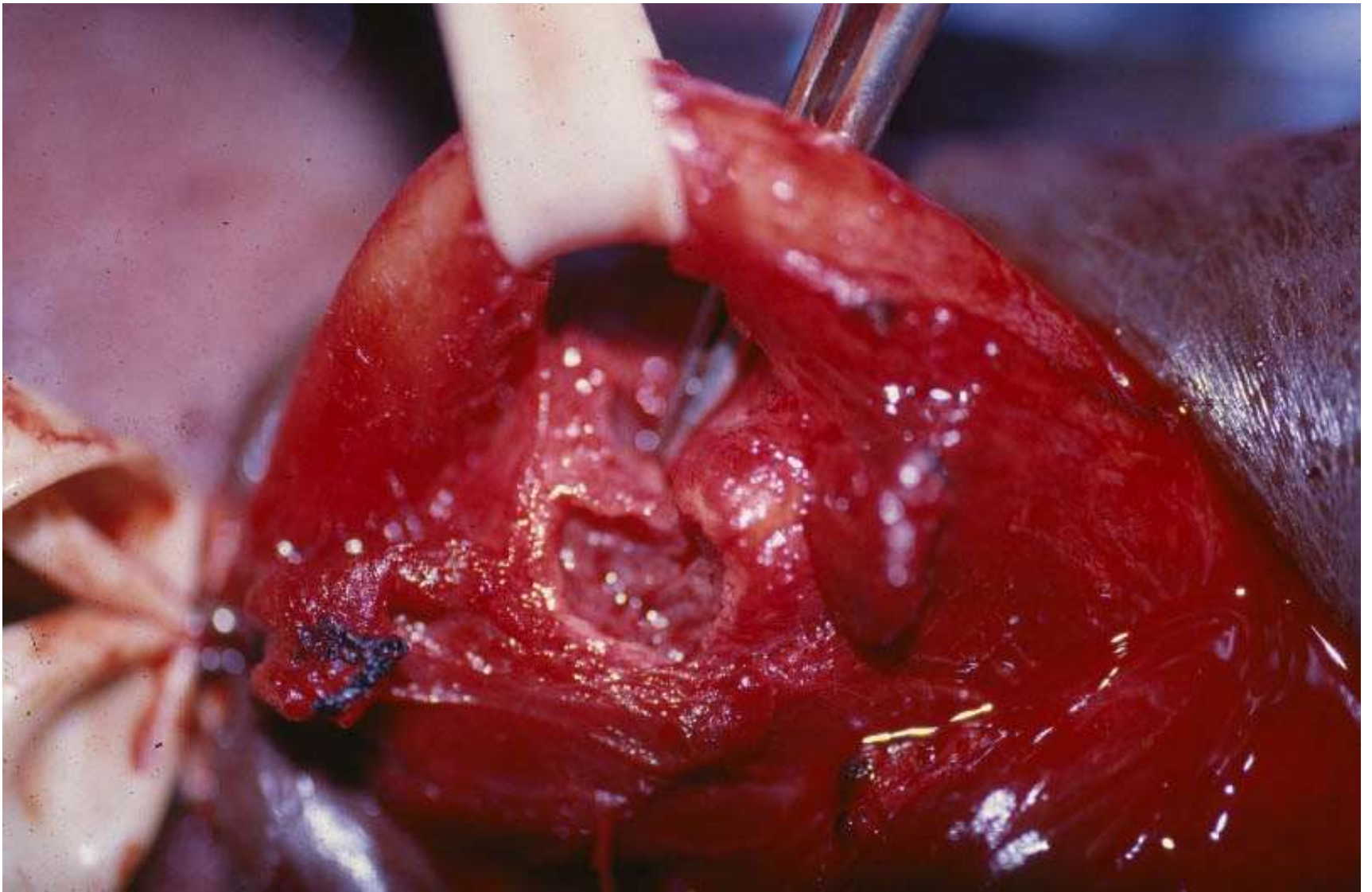
Ventral penoscrotal approach

Exposure of tunica albuginea
laceration

Repair with absorbable suture

Bilateral cavernosal injury; mobilization of urethra for exposure

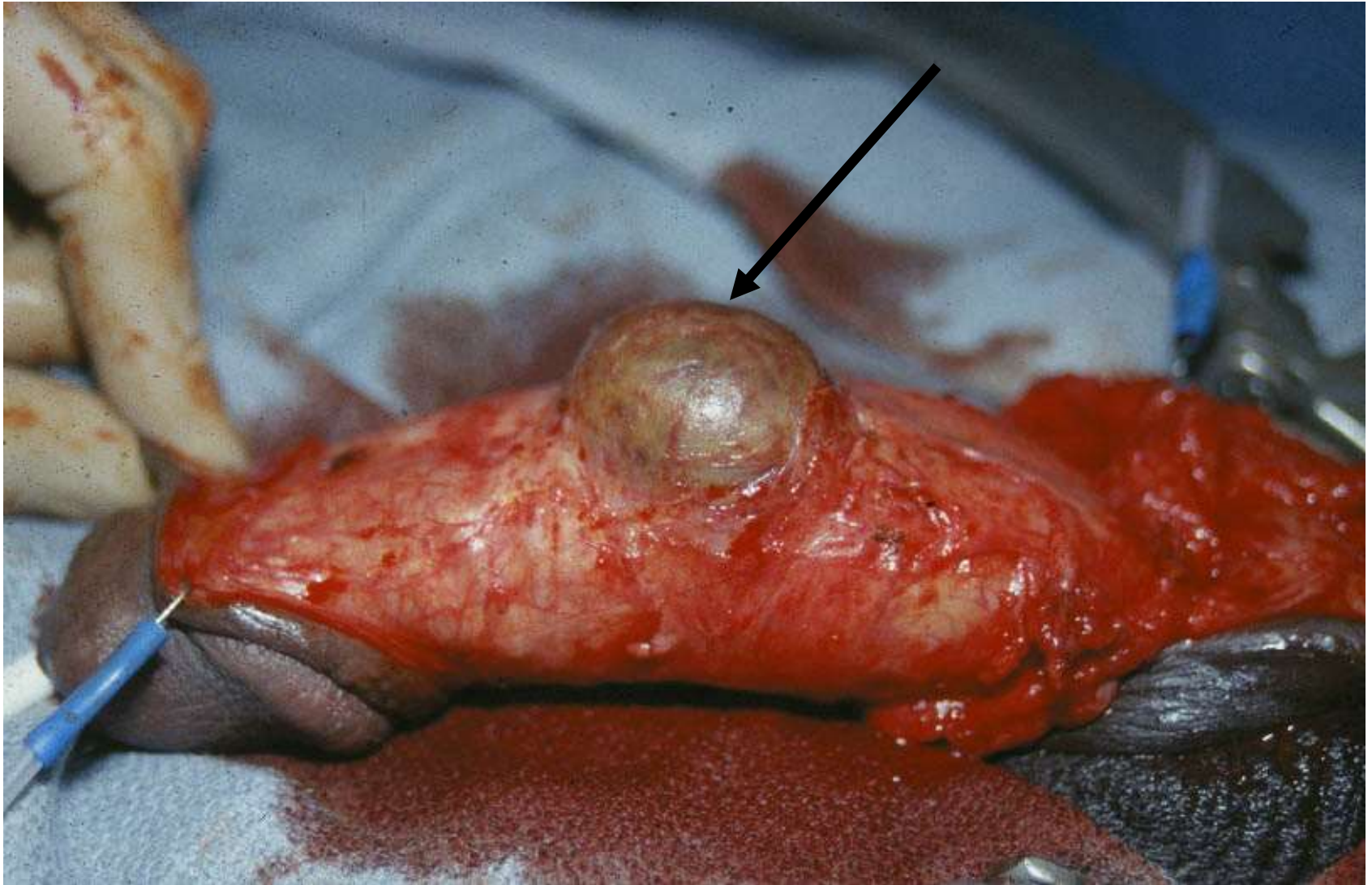




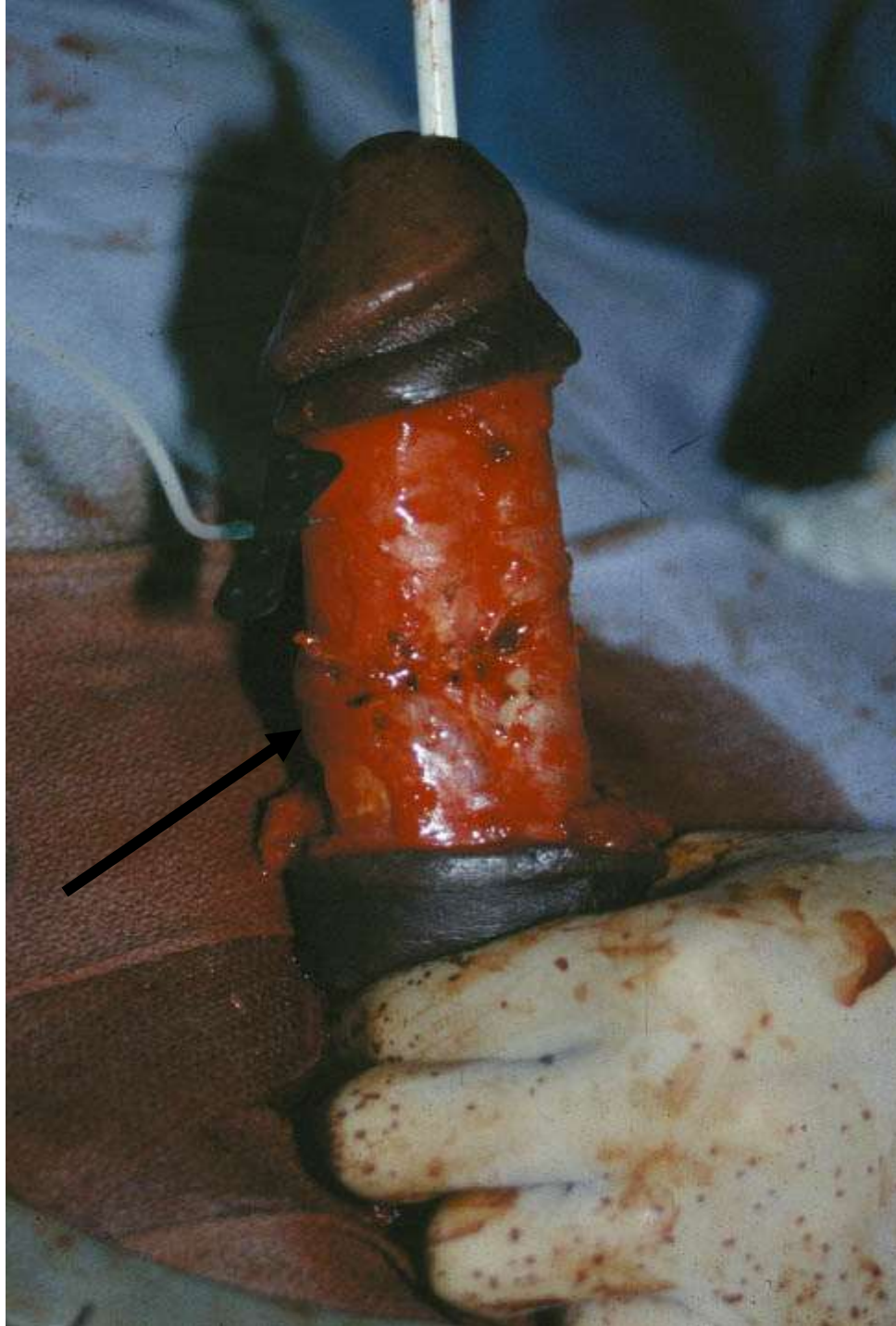
Lateral view of injury



Delayed presentation of penile fracture: pain, angulation



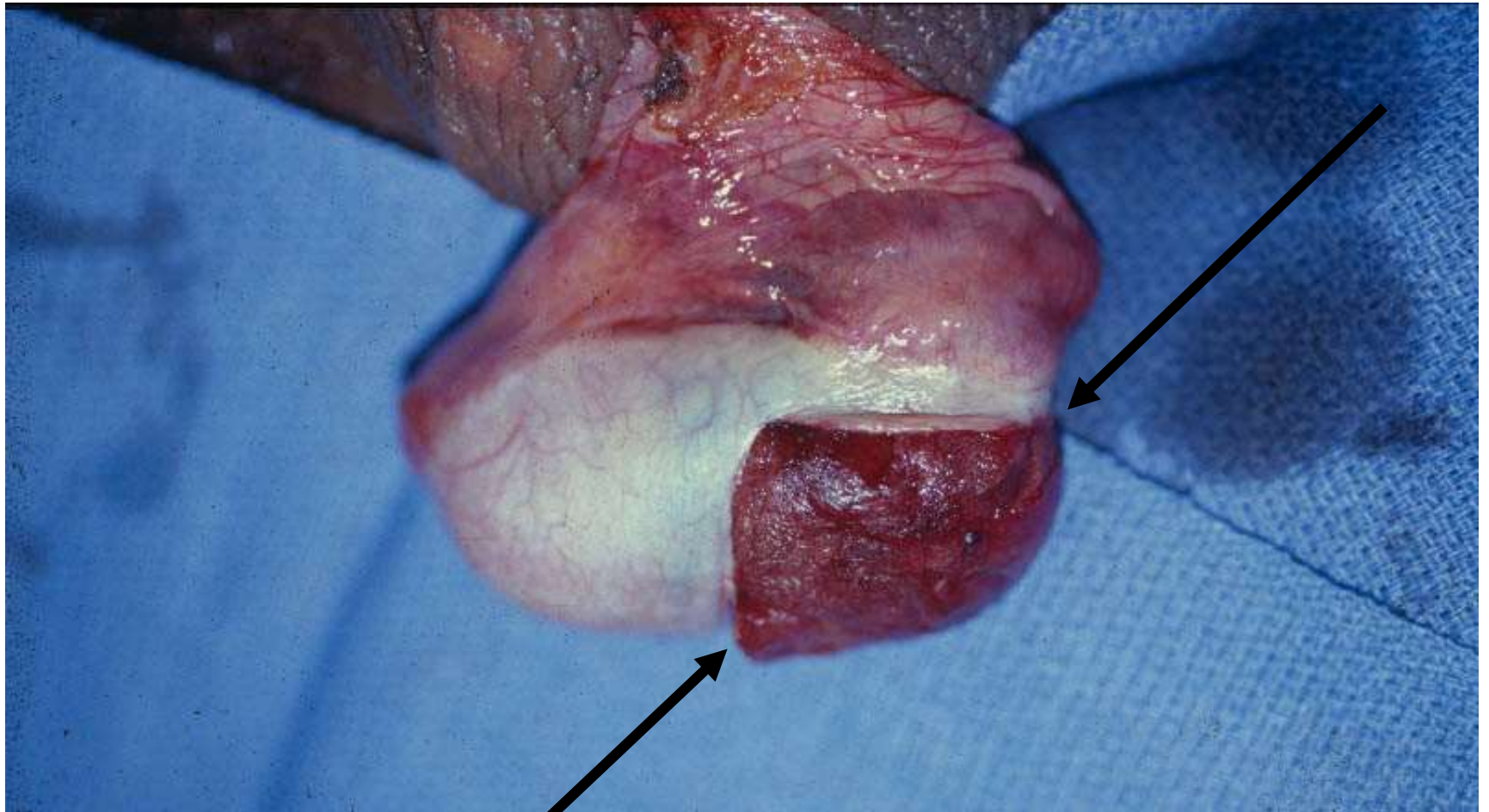
Pseudoaneurysm of corpus cavernosum



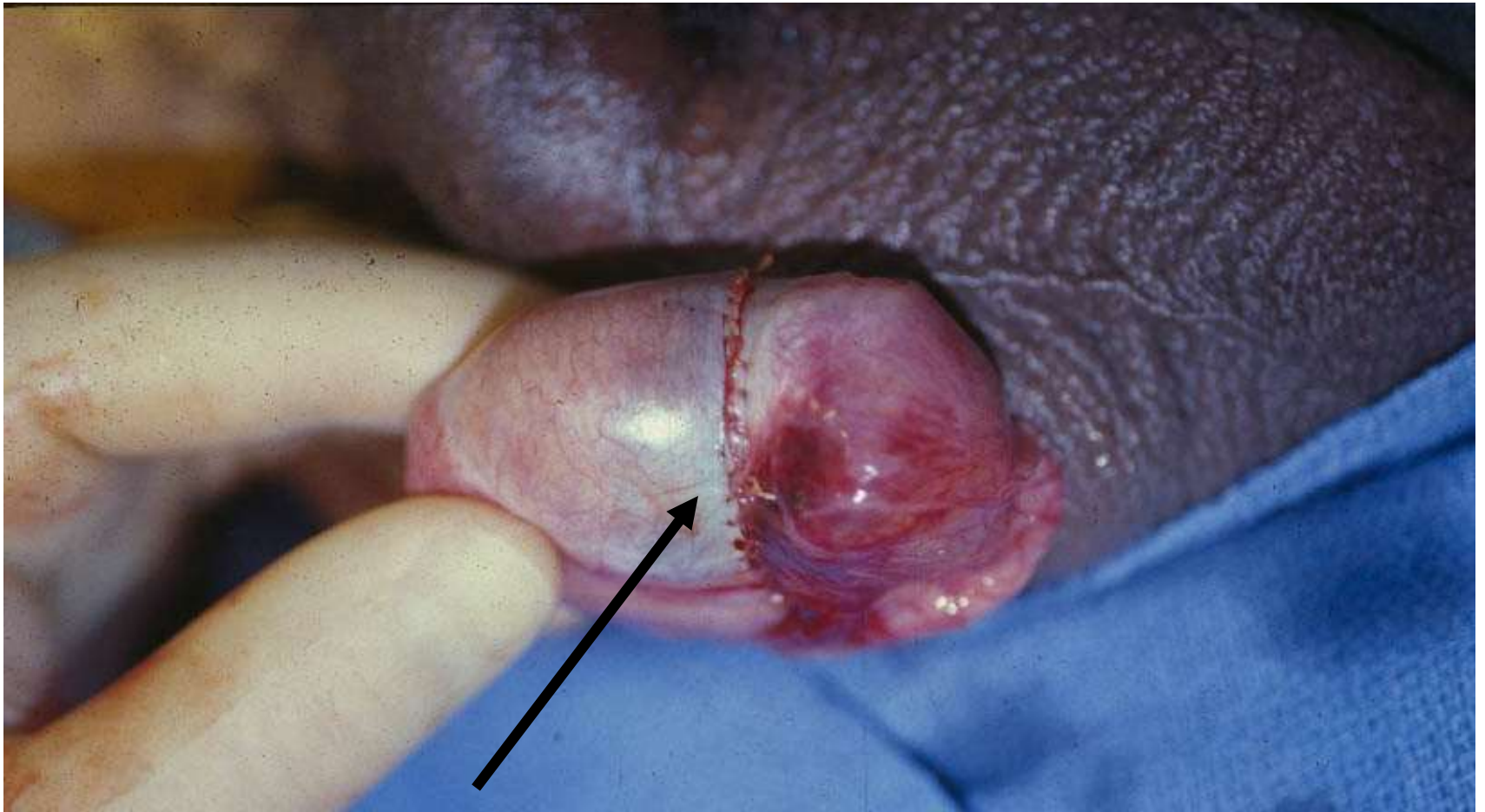
Surgical repair
Circumcising incision
Resect lesion
Artificial erection
Be prepared to patch

Urotrauma Guidelines – Testicular, Genital

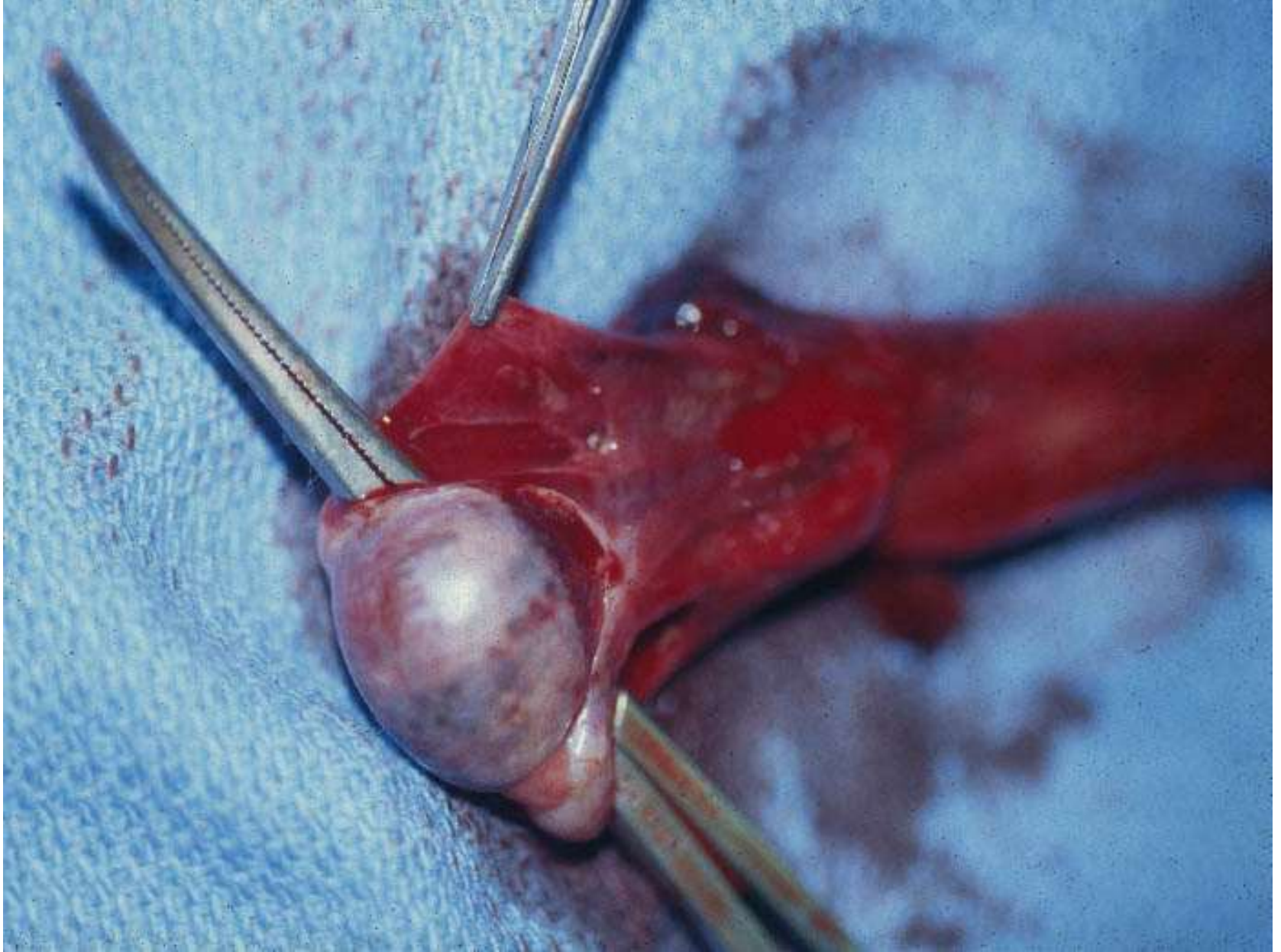
- For suspected or confirmed testicular rupture, perform scrotal exploration(B)
- For testicular rupture, perform limited debridement of non-viable tissue with tunical repair or orchiectomy when non-salvageable(B)
- Perform exploration and limited debridement of non-viable tissue for processes resulting in extensive genital skin and soft tissue loss(B)



Most common configuration of laceration: transverse

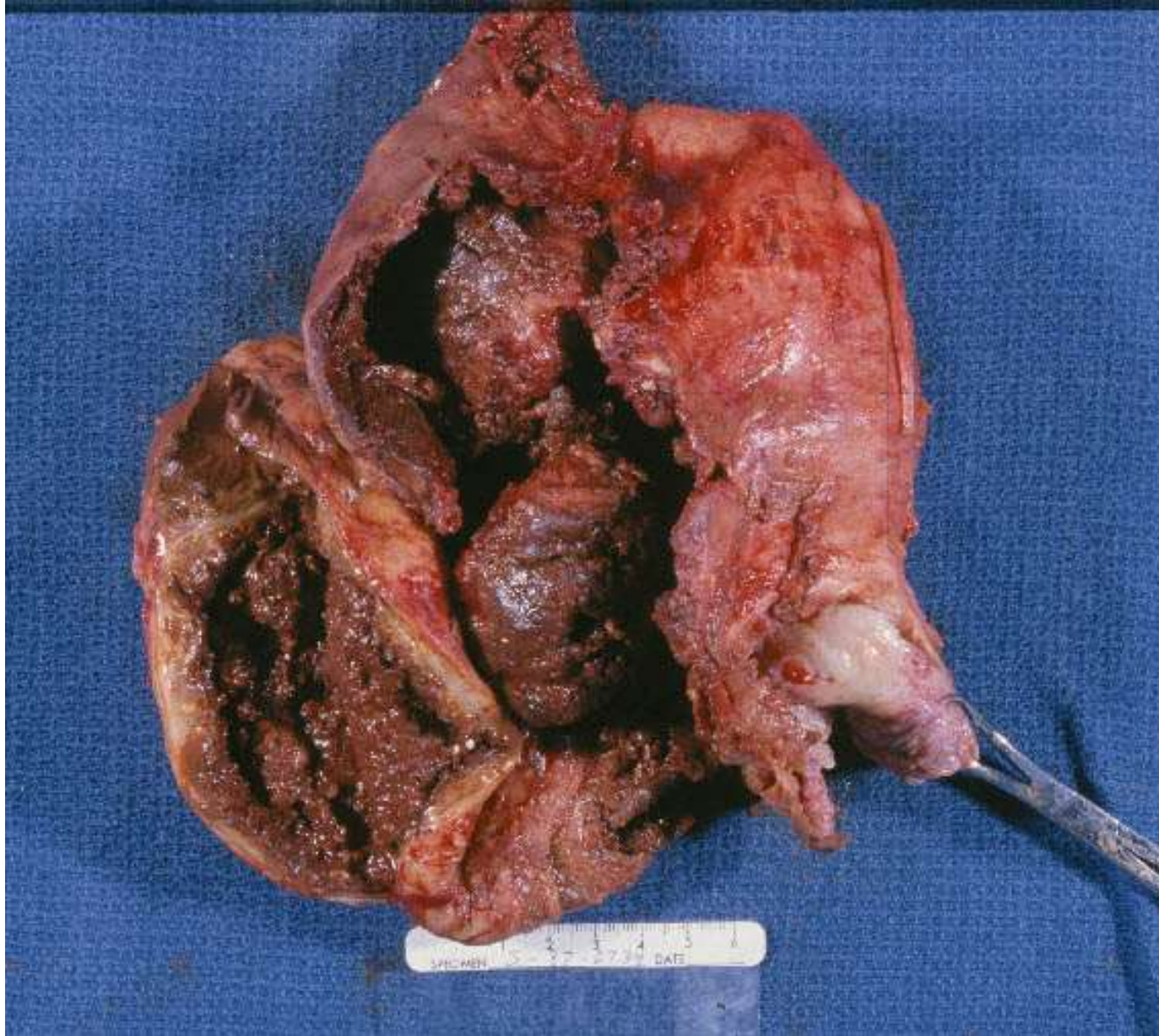


Straightforward repair; running absorbable suture
No debridement necessary



When is orchiectomy indicated?

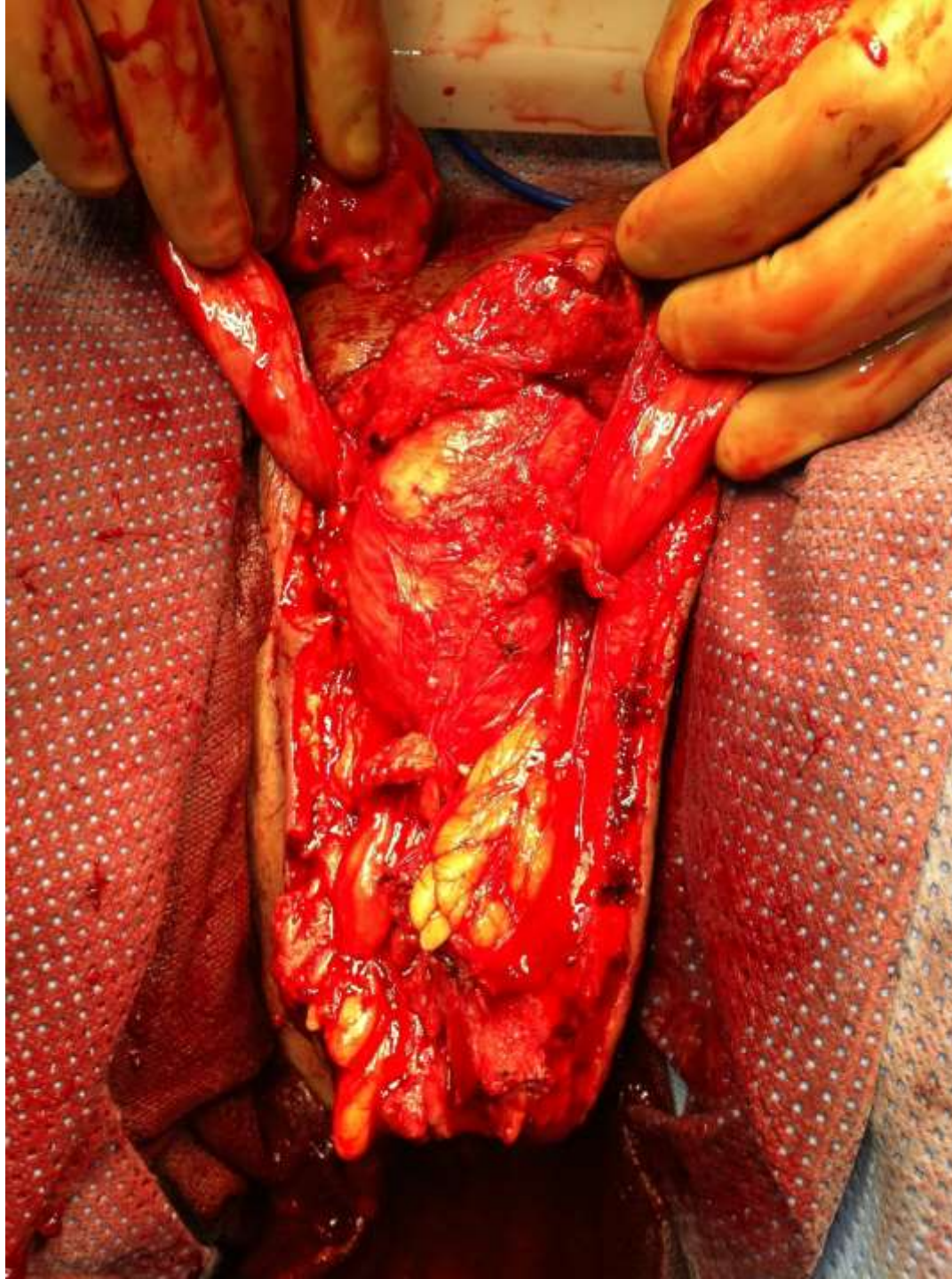
When no significant viable parenchyma due to laceration, vascular injury



Nonoperative management of major testicular laceration:
Delayed orchiectomy, calcified hematoma, no viable testicle







AUA Guidelines

- Newly Released Guidelines
 - [Cryptorchidism](#)
 - [Medical Management of Kidney Stones](#)
 - [Urotrauma](#)
- 2014 Newly Amended Guidelines
 - [Castration-Resistant Prostate Cancer](#)
 - [Interstitial Cystitis/Bladder Pain Syndrome](#)
 - [Overactive Bladder](#)

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