

Management of Acute Ischemic Priapism: Guidelines and Beyond

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Disclosure

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- Coloplast
- Biote

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- Boston Scientific
- Progyny

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- Boston Scientific
- Coloplast
- Endo

49 year old man with a painful erection for 4 days after using cocaine at a party and taking “erection pills” from a “friend”. He was too embarrassed to seek sooner treatment.

Outline



- Defining priapism
- Evaluation and diagnosis
- Treatment (guideline-based, 2022)
 - Acute Management
 - Surgical Management
- A training curriculum for priapism management Urology and Emergency Medicine providers

Definitions

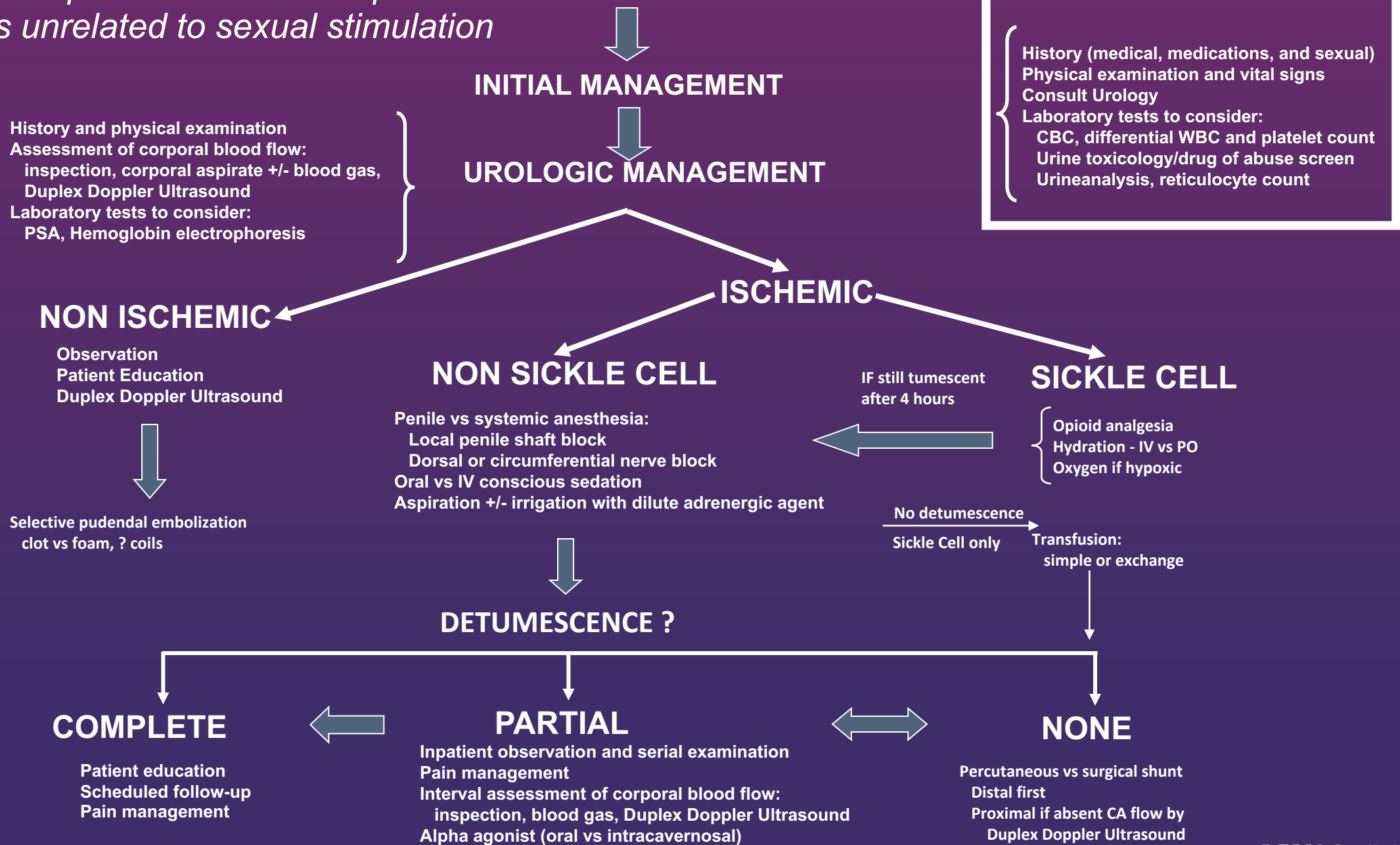
Priapism is an unwanted erection that persists beyond or is **unrelated to sexual stimulation**. It may be a full or partial erection and typically lasts beyond 4hrs.

It is the utter bane of the practicing urologist's existence

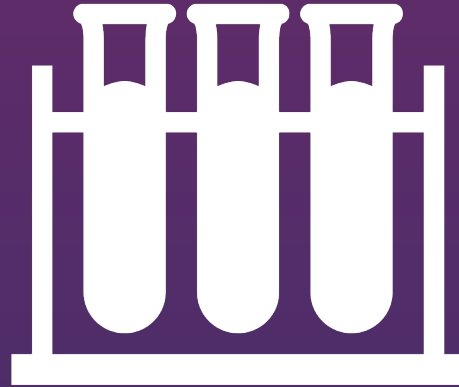
- A true urologic emergency
- Treatment episodes require hours of time and are highly specialized
- Treatment is resource intensive and often spans multiple delivery sites

Unwanted penile erection that persists beyond or is unrelated to sexual stimulation

PRIAPISM



Evaluation and diagnosis



Ischemic Priapism

Painful

- Corpora cavernosa fully rigid
- Venous outflow occlusion → cessation of arterial inflow
- Compartment syndrome

Time-dependent changes

- Hypoxia, hypercarbia, acidosis
- 12 hours: trabecular interstitial edema
- 24 hours: destruction of sinusoidal endothelium, exposure of basement membrane, and thrombocyte adherence
- 48 hours: sinusoidal thrombosis, smooth muscle cell necrosis, fibroblast-like cell transformation.

Emergency! (?)

Long Term Sequelae: Erectile dysfunction

Duration of Priapism	No. of patients	Potency preserved (%)
<1 day	24	22 (92)
>1-2 days	39	27 (69)
>2-4 days	34	18 (53)
>4-7 days	18	6 (33)
>7 days	9	2 (22)
Total	124	75 (61)

Risks associated priapism and bedside treatment

- Pain
- Bleeding, hematoma formation
- Infection
- Recurrence
- Conversion from ischemic to non-ischemic
- Urethral injury, urethral fistula
- Long-term erectile dysfunction
 - About **35%** if managed with systemic treatment alone

Acute management of ischemic priapism

Stepwise approach: “PAIIN”

1) Penile Block

2) Aspiration

3) Irrigation

4) Injection

5) Neutralize

While you are driving in...

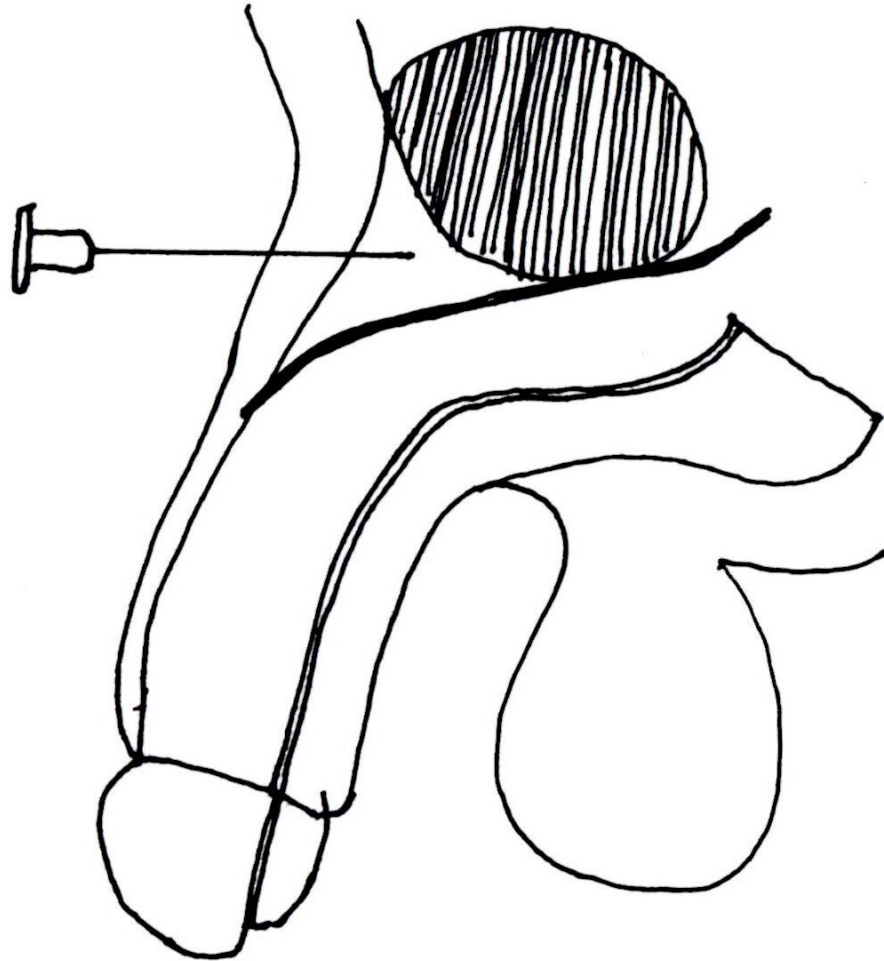
ER Staff

- BP monitor
- EKG monitor
- Peripheral IV
- Pain medication
- A second pair of hands

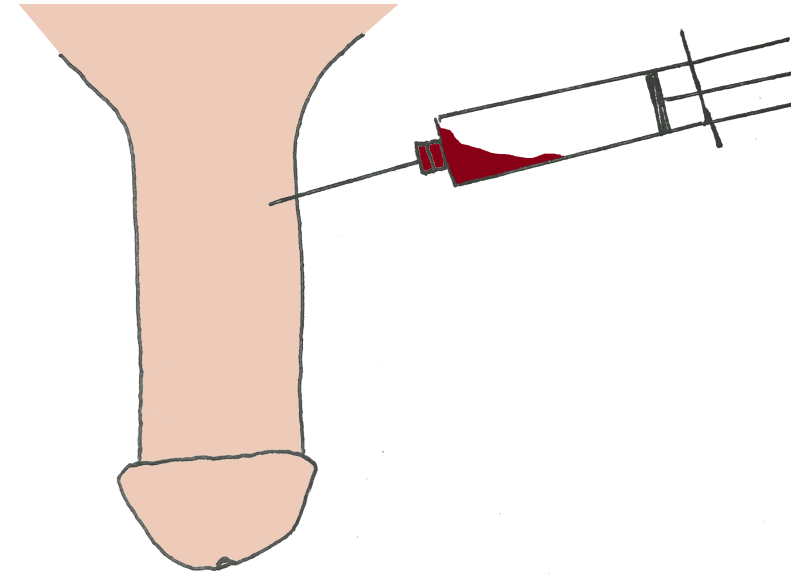
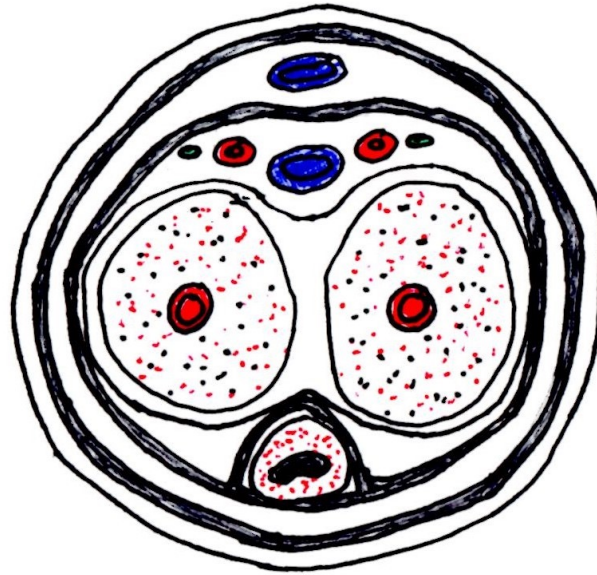
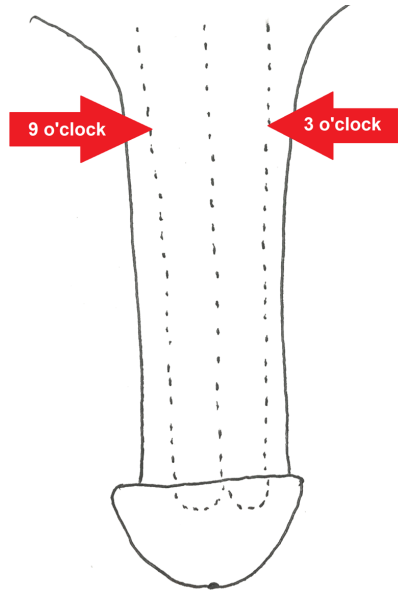
Urology Supplies

- Injectable Normal Saline (50mL)
- Local anesthetic
- 10mg vial phenylephrine (1ml)
- 25g hypodermic needles
- Syringes: 10 mL Control
- Betadine or alcohol swabs
- ABG kit
- Butterfly needle (19 or 21g) x 2
- Sterile towels or drapes
- Labels

1) Penile Block



2) Corporal Aspiration



- Decreases intracavernosal pressure, relieves pain
- Ischemic priapism resolved in **36%** treated with aspiration alone
- “make space” within the corpora cavernosa

3) Corporal Irrigation (+/-)

- Often performed with corporal aspiration
- May help to clear old, stagnant blood and clot
- Shown to improve resolution rate in some studies
 - 66%: corporal aspiration + irrigation
 - 24%: corporal aspiration alone

4) Intracavernosal Injection of Sympathomimetic Agents

Phenylephrine: α_1 -selective agonist

- Side effects: HTN, bradycardia, HA, sweating, palpitations, arrhythmia
- Dose: 100-500 ug/mL → 1 mL q 3-5 min
- Patient should be on monitors

Walsh Recipe: draw 10mg/1mg PE into 10mL Control syringe. Dilute to 10mL with NS. Waist 5mL. Dilute to 10mL with NS = 500mcg/mL PE solution. Inject 0.5 or 1.0 mL while assessing for symptoms and HR

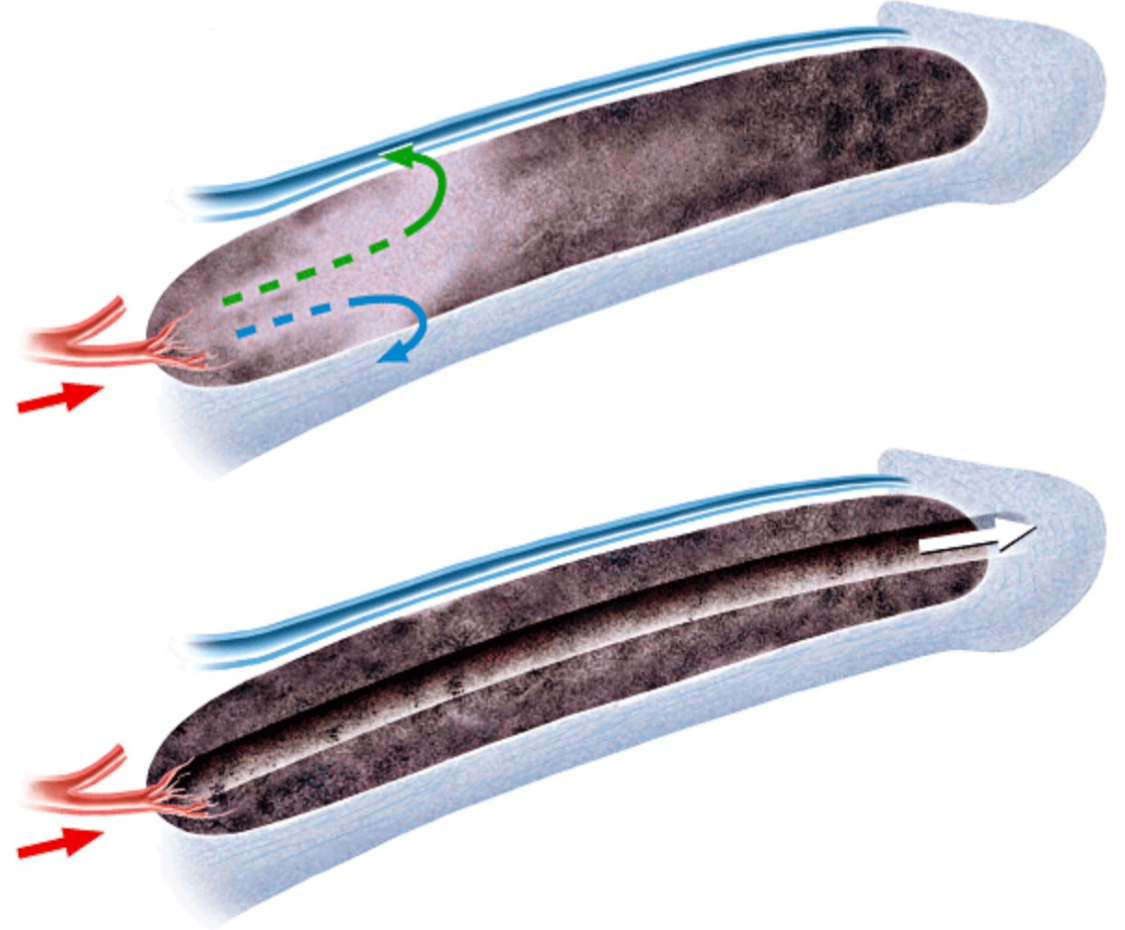
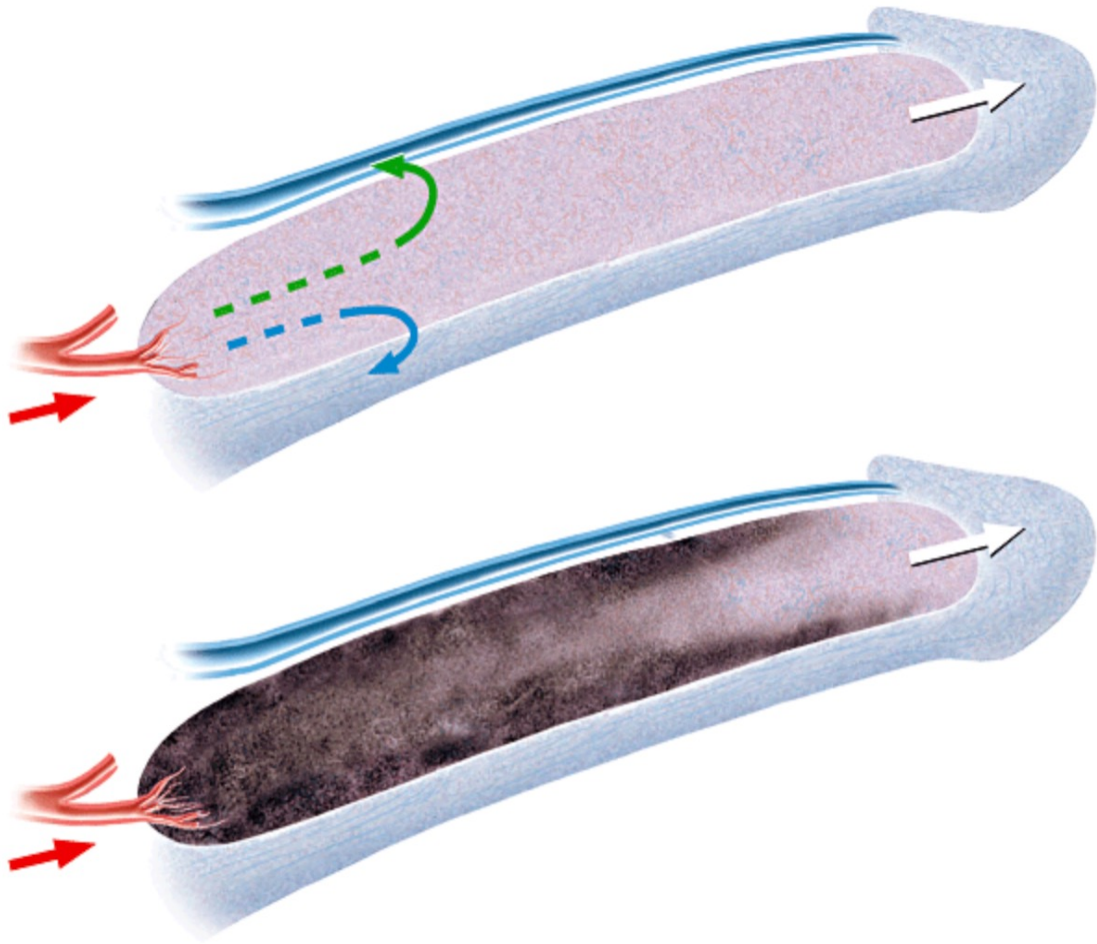
~77% resolution rate w/injection after aspiration + irrigation

- Less successful in priapism lasting > 48-72 hours

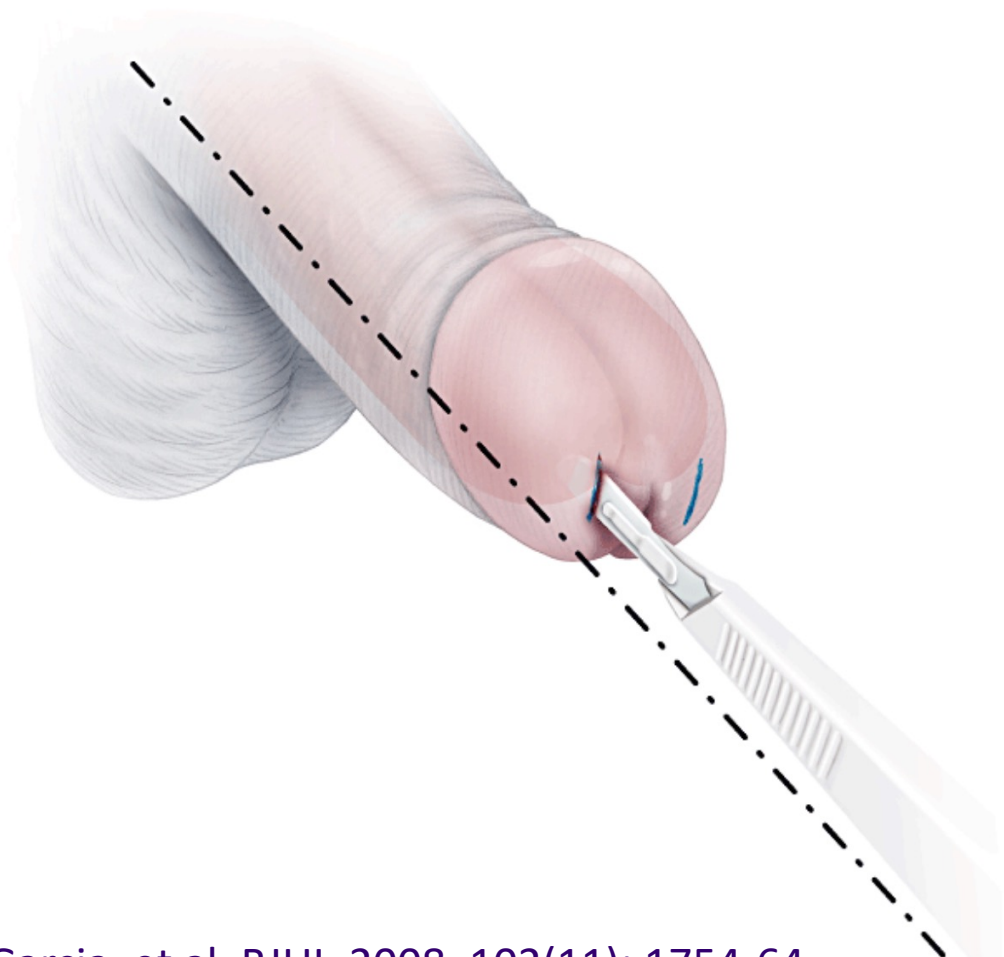
Surgical management: T Shunt (Lue)

“P - A - I - I” has failed, what now?

1. Clinicians should perform a distal corporoglanular shunt, with or without tunneling
2. If priapism persists or returns, consider tunneling
3. Inadequate evidence for the benefit of proximal shunts of any kind



Garcia, et al. BJUI; 2008, 102(11): 1754-64.



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Priapism neutralized

How do we make this easier?



- Acute ischemic priapism:
 - Urologic emergency
 - 5.34/100,000 men annually
 - Managed by ED and Urology
- Effective trainee education is imperative
 - Uncommon entity
 - Time-sensitive management
- No commercially available priapism training models

Hotdogs and Redvines®: Pilot of a Cost-Effective Simulation-Based Curriculum for Acute Ischemic Priapism Management

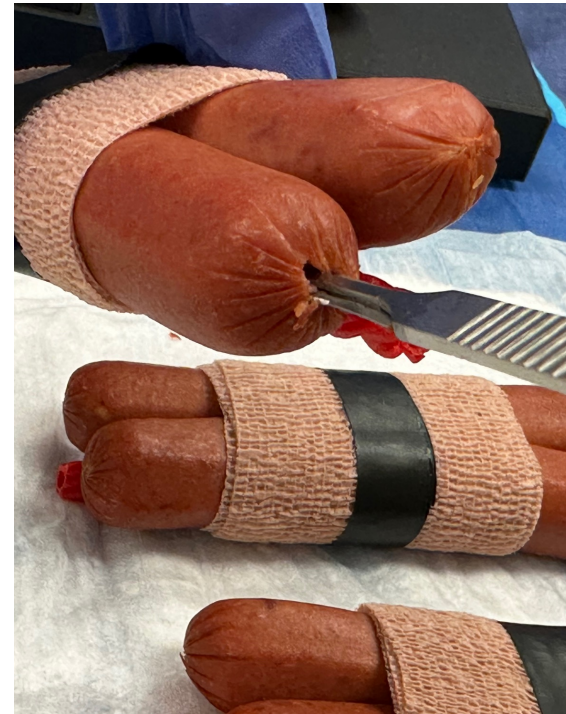
Objectives: To develop an effective low-fidelity task trainer and simulation curriculum

- Easily reproducible
- Low cost
- Versatile for practice with corporal aspiration, distal shunt, and corporal tunneling maneuvers

60 minute curriculum (or less)

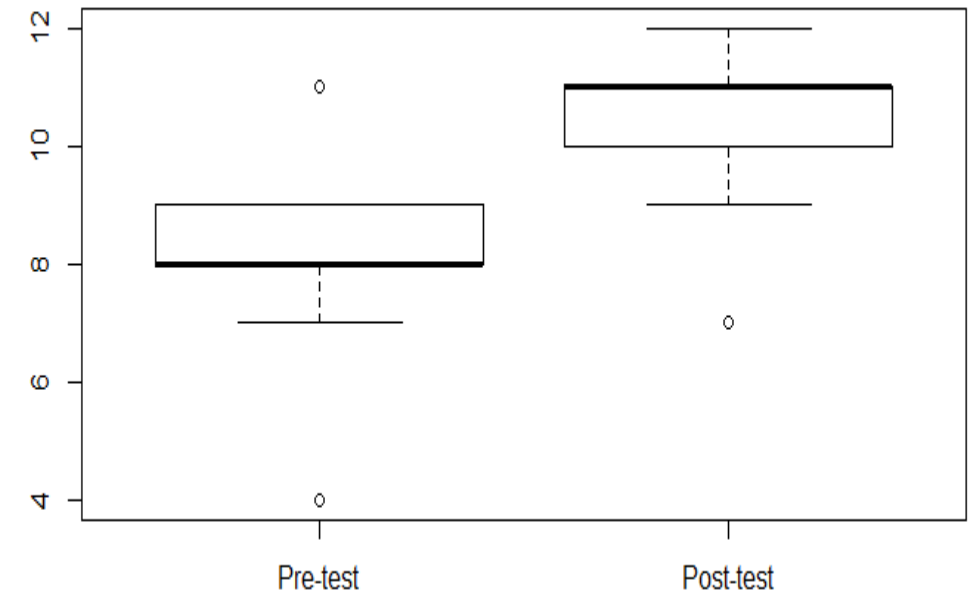
Cognitive skills training: AUA Guideline-based didactics (30 minutes)

Technical skills training: Simulation session task (30 minutes)



Cognitive test scores before and after simulation curriculum and feedback evaluation of the overall educational session (curriculum + simulation) from participants

Metric	1 "Not at all"	2 "Minimally"	3 "Somewhat"	4 "Very much"	Average score
Helpfulness of didactic materials	-	-	2	7	3.78
Helpfulness of simulation	-	2	4	3	3.11
Improvement in self-confidence	-	1	3	4	3.4



Cognitive post-test scores improved by 15% on average from pre-test baseline ($p=0.002$).

Summary

- Prompt evaluation and treatment
- Discuss erectile dysfunction
- Remember the “PAIIN”
- Consider including the Hotdogs and Redvines low fidelity simulator in your own practice.

THE LEGENDARY BACK BOWLS 11,250'



QUESTIONS?



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