



Canadian Urologic Association Urethral Stricture Guideline Recommendations



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Why a Urethral Stricture Guideline?

- Costly disease (>\$200 million)
- Relatively common (0.6%) and likely increasing
- Frequently associated with complications (~40%)
- Reduced patient quality of life



GRADE Methodology

- **Steps:**

1. Generate focused clinical questions – PICO format
2. Rank clinically important outcomes
3. Systematic review and meta-analysis per outcome
4. Assess quality of body of evidence per outcome

- **Evidence to Decision Framework (EtD)**



Evidence to Decision Framework

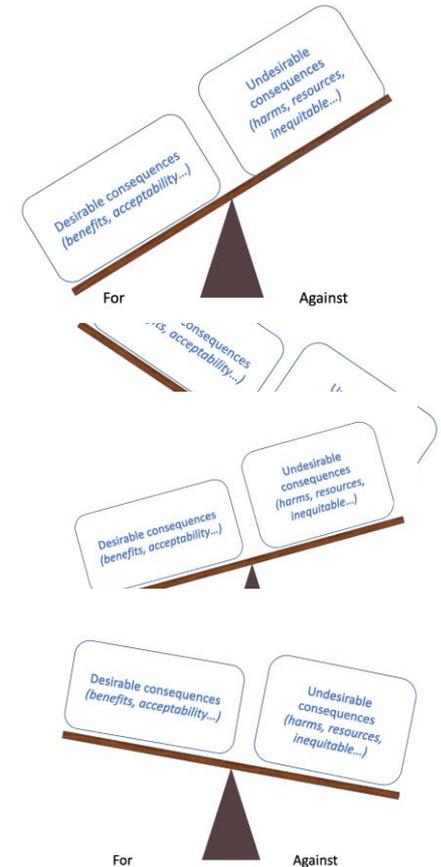
Multiple criteria are considered when making recommendations

- 1 Problem**ⁱ
Is the problem a priority?
- 2 Desirable Effects**ⁱ
How substantial are the desirable anticipated effects?
- 3 Undesirable Effects**ⁱ
How substantial are the undesirable anticipated effects?
- 4 Certainty of evidence**ⁱ
What is the overall certainty of the evidence of effects?
- 5 Values**ⁱ
Is there important uncertainty about or variability in how much people value the main outcomes?
- 6 Balance of effects**ⁱ
Does the balance between desirable and undesirable effects favor the intervention or the comparison?
- 7 Resources required**ⁱ
How large are the resource requirements (costs)?
- 8 Certainty of evidence of required resources**ⁱ
What is the certainty of the evidence of resource requirements (costs)?
- 9 Cost effectiveness**ⁱ
Does the cost-effectiveness of the intervention favor the intervention or the comparison?
- 10 Equity**ⁱ
What would be the impact on health equity?
- 11 Acceptability**ⁱ
Is the intervention acceptable to key stakeholders?
- 12 Feasibility**ⁱ
Is the intervention feasible to implement?



Recommendation Can Be:

- **Strong for** an intervention
- **Strong against** an intervention
- **Conditional for** an intervention
- **Conditional against** an intervention





Strong vs. Conditional Recommendation

Strong recommendation	Conditional recommendation
<p>Clinicians should provide the intervention to all or almost all patients in all or almost all circumstances</p> <p>Thorough review of the evidence and detailed discussion with patient not necessary</p>	<p>Clinicians should provide the intervention to most patients, but not all</p> <p>Consider key factors (or conditions), understand the evidence, and discuss with the patient to make a decision</p>



Signs and Symptoms

- LUTS >90%
- Genitourinary Pain (Dysuria, Suprapubic, Genital) – 23%
- Urinary tract infection (UTI) – 20%
- Gross hematuria – 11%
- Elevated post void residual urine
- Ejaculatory dysfunction
- Incontinence



Initial Assessment

- History & physical examination
- Urinalysis, Urine C&S
- Optional: Patient reported measures (IPSS, IIEF, SHIM, etc.)
- Optional: Uroflowmetry
- Optional: Post void residual (ultrasound) assessment



Diagnostic Investigations

- Cystoscopy
- Retrograde Urethrogram (RUG)
- Voiding Cystourethrogram (VCUG)
- Sonourethrogram (SUG)
- MR Urethrogram (MRU)



AUA Guideline Statement: Diagnosis

- “Clinicians should use urethro-cystoscopy, retrograde urethrography, voiding cystourethrography or ultrasound urethrography to make a diagnosis of urethral stricture”
- Does not specify which or imply superiority of one individual test
- Not an actionable recommendation



PICO Question 1

- **Should men with suspected urethral stricture undergo cystoscopy as the most accurate method to diagnose a clinically significant urethral stricture?**

P - Men with suspected urethral stricture

I - Cystoscopy

C - Urethrogram or other

O - Diagnosis of urethral stricture

O - Urine infection, pain or patient comfort



PICO 1: Recommendations

- **We suggest using cystoscopy rather than urethrography for the initial diagnosis of suspected stricture**
Conditional recommendation, low certainty in evidence of effects
- **We suggest performing retrograde urethrography to further stage a urethral stricture or referral to a centre of expertise in reconstructive urology, when a recurrent stricture is suspected**
Conditional recommendation, low certainty in evidence of effects



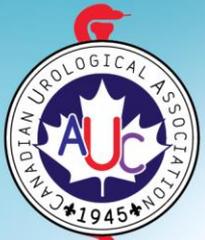
Diagnosis vs. Staging

Diagnosis
(Cystoscopy)

Vs.

Staging
(RUG +/- VCUG)





PICO 1: Recommendations

- We suggest **against** using magnetic resonance urethrography for routine initial diagnosis of suspected stricture.
Conditional recommendation, low certainty in evidence of effects
- ***Best reserved for select cases:***
 - Complex trauma (PFUI, Straddle)
 - Suspected malignancy
 - Radiotherapy induced urethral stenosis
 - Associated rectourethral fistula





PICO 1: Justification

- Cystoscopy is **widely available** in most clinical settings, and requires **fewer resources** (such as costs, equipment and training) than Urethrography or MRU
- The use of Urethrography or MRU at initial diagnosis may lead to greater numbers of **missed cases of urethral stricture** (2 to 4 more per 100 men) and **unnecessary treatment** (0 to 6 more per 100 men) than when performing cystoscopy



AUA Guideline Statement: Treatment

- “Clinicians planning non-urgent intervention for a known stricture should determine the length and location of the urethral stricture”
- Non-urgent = Imaging
- This is seldom practical



PICO Question 2

- **Should men with the INITIAL diagnosis of urethral stricture undergo endoscopic treatment compared to urethroplasty?**

P - Men with (undifferentiated) initial diagnosis of stricture

I - Endoscopic management (dilation or DVIU)

C - Urethroplasty

O - Stricture recurrence and risk of complications



PICO 2: Clinically Important Outcomes

1. Improvement in LUTS
2. Health Related-QOL
3. Need for Further Procedures
4. Complications (stricture and procedure related)
5. Sexual Dysfunction
6. Genitourinary Pain



PICO 2: Recommendation

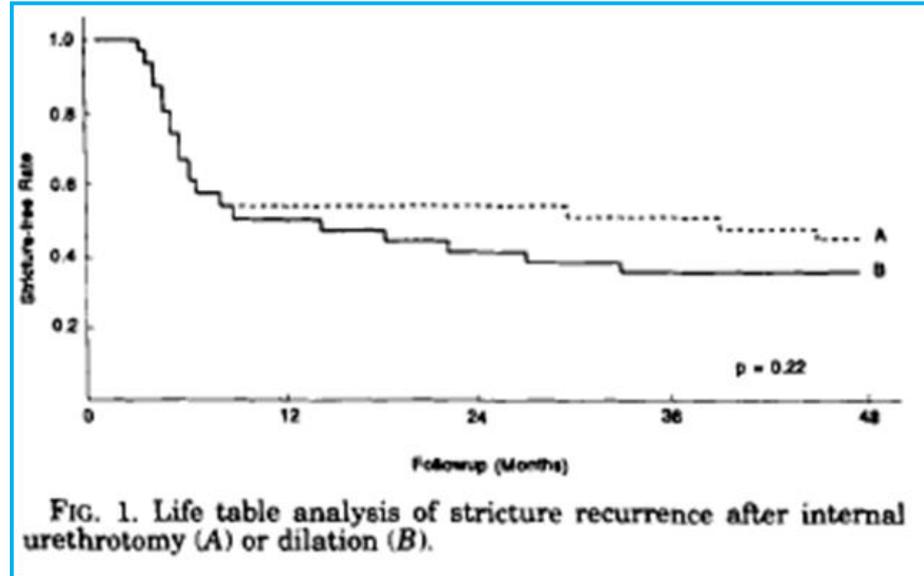
- **We suggest providing endoscopic management rather than urethroplasty for the INITIAL treatment of urethral stricture**
Conditional recommendation, very low certainty evidence in effects
 - Endoscopic management includes either DVIU or dilation
 - This recommendation applies to men with undifferentiated urethral stricture
 - But does not apply to trauma-related urethral injuries, penile urethral strictures (hypospadias, lichen sclerosus) or suspected urethral malignancy



PICO 2: Outcomes

- Urethral dilation and DVIU have equivalent clinical efficacy

A: Dilation
B: DVIU



Steenkamp, Heyns and de Kock: J Urol 1997.



PICO 2: Justifications

- The **benefits** of urethroplasty may be moderately greater than with endoscopic management
 - 15% recurrence versus 30-50%, respectively
- But there may be an **increase (4% more) in complications** with urethroplasty than with endoscopic management
- The **initial costs** of urethroplasty may be moderately greater than endoscopic management



PICO 2: Justifications

- **Equity:** Urethroplasty is less widely available than endoscopic management and urethroplasty requires additional training
- **Patient Values and Preference:** Most men will likely prefer not to wait for a referral for treatment, and therefore urethroplasty will probably be less acceptable than endoscopic management



PICO 2: Urethroplasty as Initial Treatment

- May be appropriate for strictures at higher risk of recurrence:
 - Penile urethral strictures (hypospadias, lichen sclerosis)
 - Acute trauma
 - Complete obliteration
 - Longer strictures



PICO Question 3

- Should men with RECURRENT urethral stricture undergo urethroplasty as compared to endoscopic management as the best treatment option?

P - Men with **recurrent** urethral stricture

I - Urethroplasty

C - Endoscopic Treatment (Either dilation or DVIU)

O - Stricture recurrence and risk of complications



PICO 3: Recommendation

- **We suggest performing urethroplasty rather than endoscopic management (DVIU or dilation) for the treatment of recurrent strictures.**
- *Conditional recommendation, very low certainty in evidence of effects*



PICO 3: Justifications

- The **benefits** of urethroplasty may be moderately greater than endoscopic management with approximately 20% recurrence versus 50%, respectively
- There may also be a **reduction in complications** (5% fewer) in complications with urethroplasty than with endoscopic management
- The initial **cost** of urethroplasty may be moderately greater but with stricture recurrence urethroplasty is more cost-effective



PICO 3: Justifications

- **Equity:** Urethroplasty is less widely available than endoscopic management, and urethroplasty requires additional training
- **Patient Preference:** Most men who have multiple recurrences may prefer urethroplasty, however, preferences may be variable



PICO 3: Patient Preference

- Most men who have poor quality of life due to recurrent stricture will likely choose urethroplasty
- Men who are frail with multiple co-morbidities, who want to avoid an in-hospital operative procedure, scheduling, timing or hospital stay, may choose DVIU or dilation for a recurrent stricture
- A shared decision making model will help to understand patients' values and preferences



PICO 3: Repeat Endoscopic Treatment

- Unlikely to be successful
- May increase stricture complexity
- May be appropriate for:
 - Poor urethroplasty candidates (comorbidities, patient preference, etc.)
 - Select short (<2cm) bulbar strictures with “durable” prior response



Pelvic Fracture Urethral Injury (PFUI)

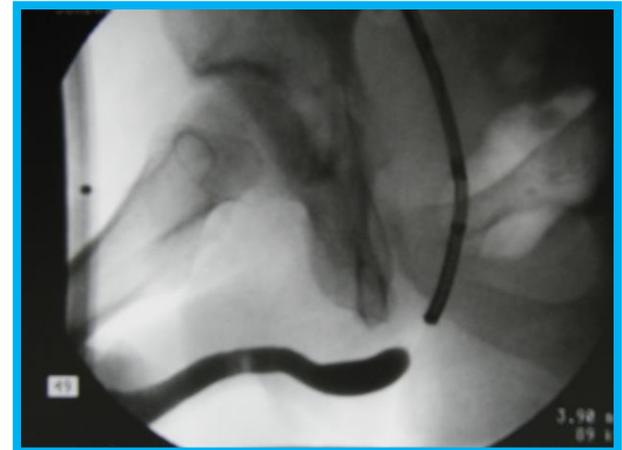
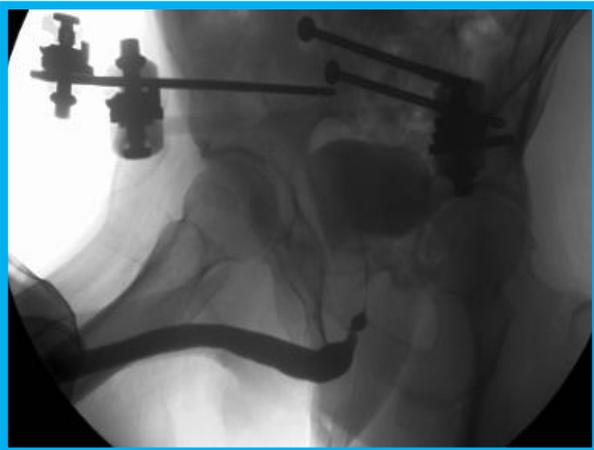
- **Managed acutely with either SPC or Aligning catheter**
 - SPC alone is safe and reliable
 - Endoscopic alignment is generally safe and may reduce or shorten urethral stenosis length
- Ideal timing of reconstruction is not known
 - Allow time for orthopedic injuries to heal
 - Approximately ~3months





Pelvic Fracture Urethral Injury (PFUI)

- Pre-operative assessment with combined urethrogram, cystogram and cystoscopy





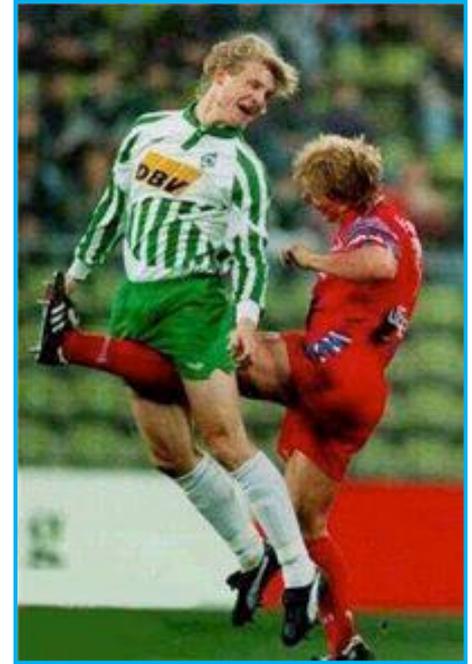
Pelvic Fracture Urethral Injury (PFUI)

- **Should be treated with delayed urethroplasty**
 - ~95% can be approached with single-stage perineal operation
 - 80-90% long-term success rate
- **Not with delayed endoscopic procedures**
 - Poor outcomes
 - Delays and complicates definitive treatment
 - Significant associated risks (I.e. “cut to the rectum”)



Straddle Injury

- Poor outcomes with immediate repair
 - Extensive soft-tissue injury
- Suprapubic diversion (x 3 months)
- **Delayed urethroplasty**
 - Excision & Primary Anastomosis
 - Rarely buccal mucosa graft onlay urethroplasty





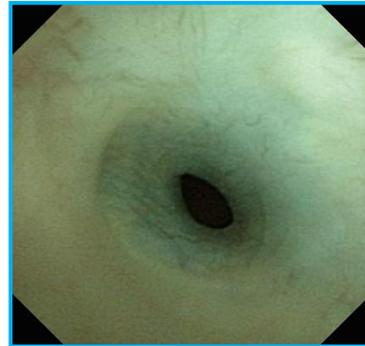
Hypospadias Associated Urethral Strictures (HAUS)

- Common complication of hypospadias
- Frequently associated with:
 - Urethrocutaneous fistula
 - Chordee
 - UTI/Hair bearing urethra
 - Lack of skin/spongiosum
- **Unlikely to respond to endoscopic treatments**
- **Urethroplasty recommended but often requires several surgeries and multiple techniques**
 - Not for “dabblers” in urethral surgery



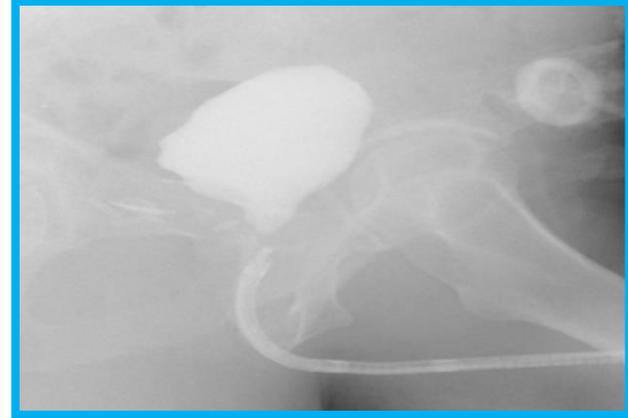
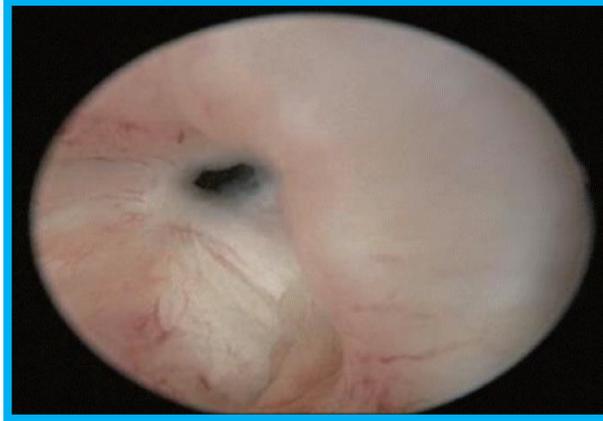
Bladder Neck Contracture

- Occurs after TURP (i.e. not radical prostatectomy)
- Incidence ~5%
- **Likely to respond to endoscopic treatments**
 - Urethral Dilation
 - Cold knife incision
 - Hot-knife incision
 - Holmium laser incision
- Y-V plasty of bladder neck for recalcitrant cases





VesicoUrethral Anastomotic Stenosis (VUAS)



- Occurs after radical prostatectomy ~5% (0.4-32%)
- Frequently associated with RT and Incontinence
- **Generally amenable to endoscopic treatment (>90%)**
 - May require multiple endoscopic treatments (1-3)
 - Possible role of intralesional agents (Mitomycin C)



Vesicourethral Anastomotic Stenosis (VUAS)

- **Reconstruction:**

- After 3 failed endoscopic attempts
- Or vesicourethral obliteration
- Subsequent incontinence treatment

- **Urinary diversion:**

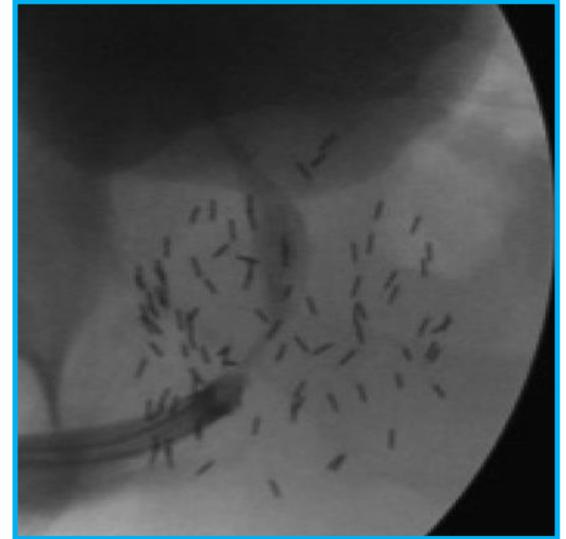
- Small bladder capacity (<200ml)
- Extensive necrosis/Cavitation
- Osteomyelitis
- Prostatesymphyseal fistulae





Radiation Stenoses/Strictures

- Incidence 3-8%
- Insidious onset (>5 years after treatment)
- Infrequently an isolated entity
- **Refractory to endoscopic treatments**
- **Reconstruction is generally successful (but)**
 - Less return to “normal” voiding function
 - Risk of ED and Incontinence (especially if prior TURP)
- Urinary diversion can often be avoided





Lichen Sclerosus (aka BXO)



- A **chronic inflammatory, lymphocyte mediated skin disease** with a predilection for the anogenital area
- **Symptoms:** Leucoderma, Itching, Penile Pain, Phimosis
- **Initial Treatment:**
 - Clobetasol bid (0.05%) x 8-12 weeks most commonly used
 - 40-90% improvement in cutaneous manifestations
- **~2-8% lifetime risk of malignancy (SCC)**
 - Mean time to diagnosis of penile cancer 12 years
 - Needs follow-up



Lichen Sclerosus Strictures

- Urethral involvement in 20-30% of patients with LS
- Insidious and progressive
 - May involve long segments of urethra
- Dense fibrosis and inflammation
- LS strictures are a challenge
- Perineal urethrostomy can be a good option
- Do not use skin (grafts/flaps) for Lichen Sclerosus strictures

