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
   - Is the problem a priority?

2. Desirable Effects
   - How substantial are the desirable anticipated effects?

3. Undesirable Effects
   - How substantial are the undesirable anticipated effects?

4. Certainty of Evidence
   - What is the overall certainty of the evidence of effects?

5. Values
   - Is there important uncertainty about or variability in how much people value the main outcomes?

6. Balance of Effects
   - Does the balance between desirable and undesirable effects favor the intervention or the comparison?

7. Resources Required
   - How large are the resource requirements (costs)?

8. Certainty of Evidence of Required Resources
   - What is the certainty of the evidence of resource requirements (costs)?

9. Cost Effectiveness
   - Does the cost-effectiveness of the intervention favor the intervention or the comparison?

10. Equity
    - What would be the impact on health equity?

11. Acceptability
    - Is the intervention acceptable to key stakeholders?

12. Feasibility
    - 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

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

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 sclerosus)
  – 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 intraluminal 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
- Prostato-symphysial 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