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REVIEW ARTICLE

MANAGEMENT OF IATROGENIC URETHRAL INJURY

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ABSTRACT: INTRODUCTION: The most common form of iatrogenic urethral trauma is that caused by instruments. Most of the relevant urethral lesions caused by iatrogenic trauma are strictures. These strictures are of variable location and severity. They often require different management strategies. **METHOD:** This review of the iatrogenic urethral trauma is based on a critical review of the literature, using on-line searches of MEDLINE and other source documents. There is a lack of high-powered, randomized, controlled trials in this area and much available data are based on retrospective studies. **CONCLUSIONS:** Updated and critical review on iatrogenic Urethral Trauma is presented. The aim of this review is to provide support to the practicing urologist since iatrogenic urethral injuries carry substantial morbidity. The diversity of iatrogenic urethral injuries and availability of treatment options as well as their relative rarity contribute to the controversies in the management of iatrogenic urethral trauma.

KEYWORDS: Urethra, stricture, catheterization.

INTRODUCTION: Urethral instrumentation is the most common cause of Iatrogenic urethral injury. The consequences of the injury are strictures at different location and with variable severity. These require individualized management strategies as per location and severity.[1,2] Most iatrogenic lesions are secondary to improper catheterization and prolonged indwelling catheters.[3] These account for 32% of urethral strictures.[2]

The risk of urethral injury due to improper catheterization during a hospital stay is estimated to be 3.2 per 1000.[4] Urethral catheterization in males to be done only if necessary, especially patients who have previously underwent surgery for hypospadias. If required fine caliber catheters to be used. Transurethral resection of the prostate (TUR-P), and similar Transurethral procedures are other common cause of iatrogenic urethral lesions. Prolonged catheterization primarily affects the anterior urethra, the bladder neck is rarely affected.[3] Stricture formation with concomitant incontinence is possible due to sphincter damage.

Depending on the treatment used for prostate cancer, incidence of iatrogenic urethral trauma is estimated to be around 1.1–8.4%, highest risk being with radical prostatectomy or brachytherapy plus external beam radiotherapy.[6] Robotic assisted radical prostatectomy also have similar rate (2%) of urethral injury as open radical prostatectomy.[7] Abdominal and pelvic procedures also result in iatrogenic injuries to the urethra. Bladder catheterizations prior to surgery prevents or reveals these injuries if any.[8]

Diagnosis of iatrogenic urethral injury: The symptoms of urethral injury caused by improper catheterization or use of instruments are penile and/or perineal pain (100%) and urethral bleeding (86%).[4]

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MANAGEMENT: Prevention of urethral injuries is better than the management of the complications. Proper urethral catheterization technique under aseptic precautions is a must. Junior doctors and the nursing staff to be trained and supervised during their initial period of catheterization.

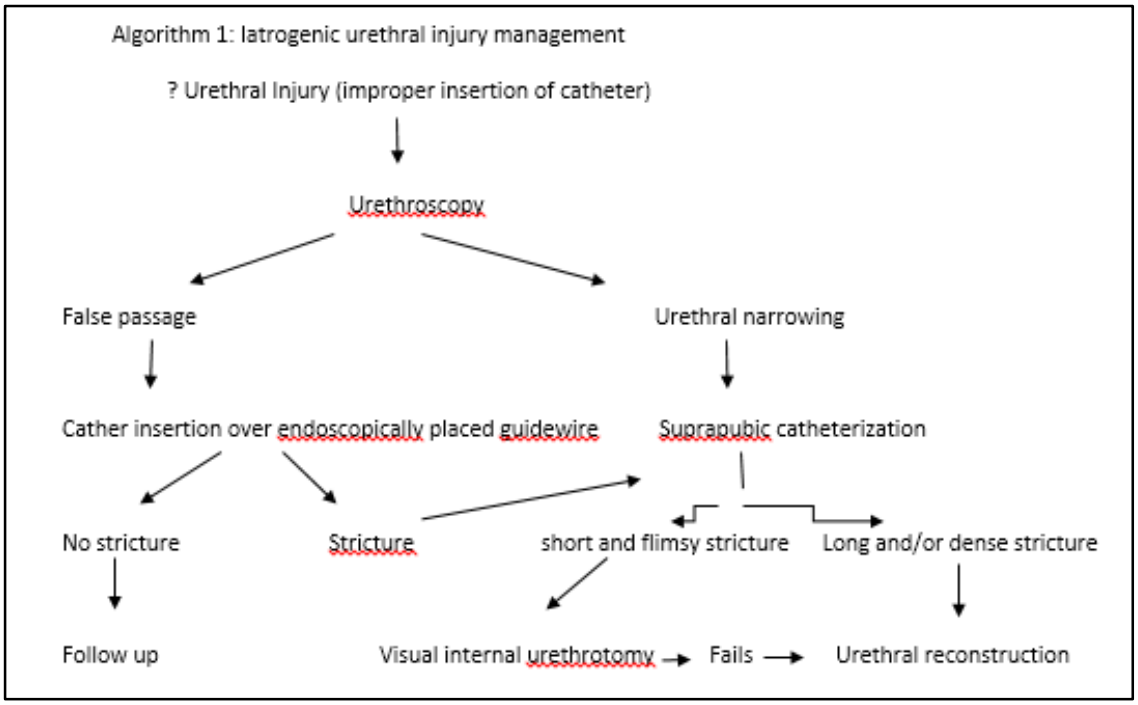
Acute false passage is treated by urethral stenting with an indwelling catheter with or without endoscopic assistance for a short period of time.[9] If urethral catheterisation is not possible, suprapubic catheter to be placed.[10]

Endoscopic management successfully treats the iatrogenic strictures after radical prostatectomy. Patient may need multiple sessions. Placement of urethral stents at the bladder neck together with the placement of an artificial sphincter has also been reported as a valid option in recurring strictures, but should be performed only in selected patients.[11,12] The alternatives are a permanent indwelling catheter, urethral dilatation, intermittent self-catheterization, or open procedures.

Open vesicourethral reanastomoses carry increased morbidity and are also associated with incontinence requiring an artificial sphincter.[13] endoscopic management, either by incision or resection Alternative procedures in recalcitrant cases and in post- TUR-P double sphincteric lesions (incontinence + stricture) are procedures that abandon the urethral outlet, such as urinary diversions, continent vesicostomy or permanent suprapubic catheter.[14,15]

Recommendations for avoiding iatrogenic urethral trauma:

- Avoid traumatic catheterization.
- Keep the length of time an indwelling catheter is present to a minimum.
- Major abdominal and pelvic surgery should be undertaken with a urethral catheter as a guide and protective structure.



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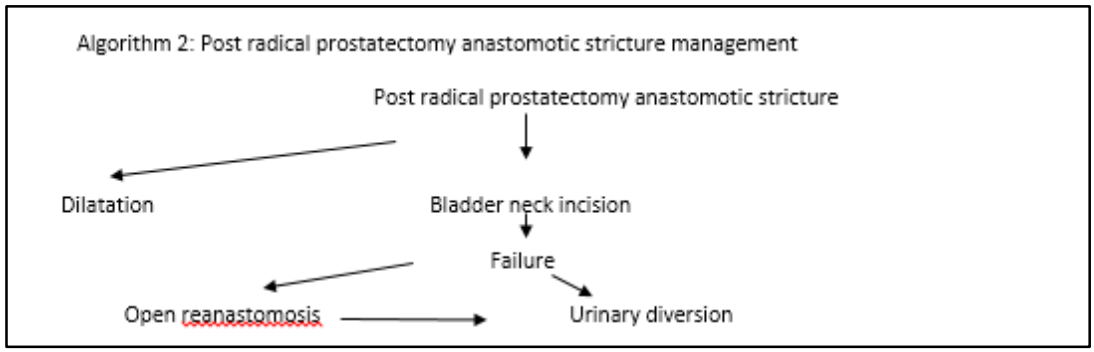

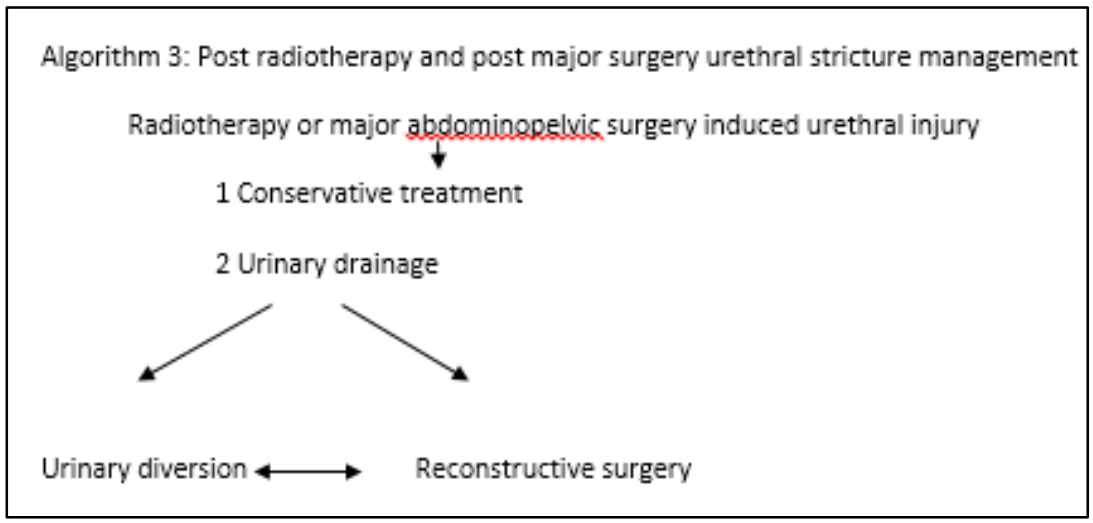

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