CASE REPORT

Recto-Urethral Fistula (RUF): A rare complication of endoscopic Posterior Urethral Valve (PUV) ablation in a child.

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ABSTRACT
BACKGROUND
The initial optimal surgical management of Posterior Urethral Valves (PUV) is Endoscopic valve ablation. Technology has advanced from the use of crochet hooks, cold knife, electrocautery to lasers. However, endoscopic valve ablation is not without complications. We report a rare case of recto-urethral fistula (RUF) in a child referred to us post endoscopic valve ablation. The child was managed in a staged approach including suprapubic catheterization (SPC), diverting colostomy, sigmoidoscopy, perineal repair, crural separation and buccal mucosa urethroplasty. Such a complication is yet to be reported. This highlights technical expertise and experience needed to avoid overzealous complications in a child.

Key-words: Posterior urethral valve, Recto urethral fistula, Endoscopic ablation.

INTRODUCTION
Posterior Urethral valves (PUV) is one of the most common pediatric conditions presented to an urologist with an incidence of 1:25,000 live births and 1:5,000 male infants.¹ Endoscopic valve ablation offers an initial standard tool of management in the urologist’s armamentarium. Techniques of valve ablation have evolved from the days of blind avulsion, crochet hook, cold knife, electrocautery to lasers.² Though endoscopic valve ablation appears to be a minor procedure, it is associated with complications, most notably posterior urethral stricture ranging between 0-25%.³

We report an unusual case of recto-urethral fistula (RUF) in a child referred from a peripheral hospital operated for PUV Fulguration, who was managed with staged approach including suprapubic catheterization (SPC), diverting colostomy, sigmoidoscopy, perineal repair, crural separation and buccal mucosa urethroplasty.

CASE HISTORY
A four year old child was referred to us with complaint of urinating per rectally. He had a history of multiple episodes of urinary tract infection (UTI) for which he was investigated and managed as a case of PUV. He was operated for endoscopic PUV ablation around six months back in a peripheral hospital and was discharged on per-urethral catheter (PUC) and suprapubic catheter (SPC). PUC was removed first followed by SPC at around four months post-operatively in the hospital, following which he developed faecaluria and was subsequently referred to us. On examination, he was continent for both urine and faeces and strained while passing urine rectally. The per-op details were not available. The child was afebrile and was feeding well. Haemogram and serum Creatinine were normal. Ultrasound abdomen showed normal upper tracts. Retrograde Urethrogram depicted posterior urethral stricture. MRI Pelvis with rectal contrast showed a possible ano-urethral fistulous communication. [Figure1a] Sigmoidoscopy showed a rectal fistula. The child was planned for a staged repair. Diverting transverse colostomy was performed. One month later, he was taken for an open perineal RUF repair. First, a guide wire was placed per-rectally under

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endoscopic guidance, through the fistula into the urethra. [Figure 1b] Perineal exploration was done, the fistula identified at the level of prostato-membranous urethra communicating with rectum, was resected and closed with vicryl3-0. [Figure2a] Stricture distal bulbo-membranous urethra was excised, crural separation was done and buccal mucosa graft augmented anastomotic urethroplasty was performed. SPC and PUC were placed. 3 weeks later, a check cystourethroscopy showed a healthy scar line, and SPC was removed followed by SPC. [Figure2b] The child is continent and doing well and is being followed up. This distressing miserable presentation in a young child made us think how serious can an overzealous ablation of PUV be.

DISCUSSION
PUV represent a common male pediatric urological problem. Young has classified PUV into three types. The presentation can be acute life threatening emergency in newborns or can be minor voiding dysfunction or recurrent UTI in older boys. PUV induced renal dysplasia and other urological complications remain of concern. Antenatal Ultrasound abdomen and Voiding Cystourethrography (VCUG) remain the main stay of diagnosis. Initial bladder drainage and stabilizing the child remain priority in acute cases. After successful bladder drainage, endoscopic valve ablation is required to improve the obstructive uropathy and lessen bladder dysfunction. The goal is to incise the valves so as to relieve obstruction to the urine flow. Technology has advanced from blind ablation, crochet hooks, balloon catheter, infant resectoscope, electrocautery to laser ablation. Yet complications such as hematuria, urethral
A rare complication of endoscopic Posterior Urethral Valve (PUV) ablation in a child

stricture, incontinence are possible. Therefore, correct anatomical identification and technical scrupulence remain the key to success. The majority of newborn urethras accommodate 7.5 or eight French instrument, ten French for older children. Endoscopic visualization of PUV is best done with full bladder and the tip of the cystoscope at the external sphincter. The bladder is pressed suprapubically with the drainage valve open on the cystoscope, to fill the valve leaflets. The site of valve fulguration has been the matter of debate. Some advocate twelve o’clock fulguration citing the anterior fusion of the valves to be the most significant element of obstruction. While many centers ablate at five and seven o’clock in view of best visualization and safety. Electrode ablation is done by engaging the medial edge of the leaflet with Bugbee electrode, gently pushing towards the bladder and briefly applying pure current at twenty-five Watts. This leaves the valve incompetent and the remnant leaflets flutter with the expressed urine flow. Repeat fulguration is needed to ablate residual obstructive tissue. Hematuria, incomplete valve ablation, urethral stricture, incontinence, decreased erectile function have been reported post ablation. We report probably the first case of RUF post PUV ablation. RUF have been etiologically classified into five types by Culp & Calhoon: Congenital, Iatrogenic, Inflammatory, Traumatic and Neoplastic. RUF are suspected with fecaluria, pneumaturia, abnormal urethral discharge and leakage of urine per rectally during micturition. The most common iatrogenic causes are procedures related to benign and malignant prostatic conditions, urethral instrumentation etc. Temporary urinary and faecal diversion by SPC and colostomy and correction of stricture urethra distal to the fistula are essential. Single-staged repairs are advocated for iatrogenic, small and uninfected RUF, while staged repairs are essential for large and infected fistulas. Perineal, Posterior-sagittal, anterior trans ano-rec tal and combined approaches are the various surgical modalities. Goodwin described the perineal approach allowing repair of RUF and interposition of levator ani muscles between the urinary tract and rectum. A variety of surgical techniques exist requiring a greater surgical skill and experience.

CONCLUSION

Any urethral instrumentation in a child should be done with utmost tissue respect as it can affect the future growth and development and quality of life. PUV endoscopic ablation, if adhered to good surgical principles, is a technically simple surgery. However, iatrogenic complications can be difficult to manage for both the surgeon and the parents and a miserable condition for the child.

REFERENCES