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# Posterior Urethral Valve Presentation, Management and Outcome

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*Abstract -* The most common cause of lower urinary tract obstruction in male infants is posterior urethral valves with an incidence about one patient in each 5000–8000 infants [1]. A better understanding of the exact cause of the congenital obstruction of the male posterior urethra, prevention of postnatal bladder and renal injury, and the development of safe methods to treat urethral obstruction prenatally (and thereby avoiding the bladder and renal damage due to obstructive uropathy) is the goals for the care of children with posterior urethral valves [2].

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# Posterior Urethral Valve Presentation, Management and Outcome

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## I. Introduction

The most common cause of lower urinary tract obstruction in male infants is posterior urethral valves with an incidence about one patient in each 5000–8000 infants [1]. A better understanding of the exact cause of the congenital obstruction of the male posterior urethra, prevention of postnatal bladder and renal injury, and the development of safe methods to treat urethral obstruction prenatally (and thereby avoiding the bladder and renal damage due to obstructive uropathy) is the goals for the care of children with posterior urethral valves [2].

## II. Objectives

- ✓ To know the presenting symptoms and signs of the PUV.
- ✓ To know the trends of management of PUV in Alribat military hospital.
- ✓ To estimate the post operative complication.
- ✓ To evaluate the outcome of the management.

## III. Patients and Methods

This is a retrospective prospective study descriptive done in Alribat National hospital in the period from January 2010 to June 2013. The data collected by filling questionnaire from patients records, follow up charts and by direct interview. The data were analyzed using statistical package for social sciences (SPSS).

## IV. Results

This study included forty four patient diagnosed as having PUV by VUCG and the diagnosis confirmed by cystoscopy. Routine investigations done for all patients. Most patients presented during the first year of life (84.1%). There was wide range of presenting complains with painfull micturition was the most frequent one in 84.1%. VUR found in 31.1%, hydronephrosis in 29.5%, and abnormal RFT in 15.9%. Renal scan done for 2.3% and represented unilateral nonfunctioning kidney.

Most patients treated by primary valve ablation (93.2%) using 8 F sheath and the valve ablated using 11 F resectoscope with a hook of cold knife, and the valves incised in position 5 and 7 o'clock. Most of the patients operated during their first year of life (68.2%). From those with abnormal RFT, 57.1% returned to normal RFT postoperatively. VUR disappear in 78.6%. Postoperative complications were septicemia, persistent ureamia, recurrent UTI, urethral stricture, and residual valve with frequency less than 7% for each. Mortality rate was 6.8%. Patients followed by VUCG, RFT, UG, and cystoscopy for few patients. Short term outcome was good in 84.8% in the sense of clinical, biochemical and radiological recovery.

## V. Discussion

In this study we tried to evaluate the common presentations, models of management, and the short term outcome of management of PUV. We found that most patients presented during the first year of life 29 neonates (65.9%), 8 infants (18.2%), and 7 old children (15.9%).Cass A *et al,* and Egami *et al* reported that most children with PUV present within the first year of life 50–70% of boys and 25–50% are initially seen in the neonatal period [3, 4].

There was wide range of clinical presentation of PUV as illustrated by our study with painfull micturition being the most common presenting complain in 84.1% of the patients. Lopez Pereira P (2004) and Agarwal S (1999) reported that patients of PUV may present with diurnal enuresis, infections, and severe voiding complaints, such as dribbling and retention, or hematuria [5, 6].

Lissauer D *et al* (2007) declared that VCUG is the gold standard for diagnosis of PUV [7]. In our study VUCG demonstrated a dilated posterior urethra due to obstructing membrane (PUV) and the presence of PUV is confirmed by cystoscopy, so VUCG showed 100% accuracy in diagnosing PUV. VUR internationally found in 19-72% of patients as reported by Kurth *et al* (1981)[8], while in this study VUR was found in 38.1%. Hydronephrosis found in 29.5% and this is quite different from that reported by Egami K *et al* in his series which is 90% [4]. Abnormal RFT was found in 15.9% of the patients, 57.1% of them returned to normal RFT postoperatively.

Smith GH *et al* (1996) concluded that primary valve ablation with surveillance was the preferred management for PUV. They proposed that by avoiding diversion in most cases, bladder function was preserved and the need for bladder augmentation decreased [9].Most of our patients treated by primary valve ablation

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(93.2%). Unfortunately there were no antenatal interventions because of the lack of these experiences in our country. Vesicostomy was the initial management in (6.2%) of patients with additional 4.5% treated by vesicostomy after the primary valve ablation because of persistent VUR. Most of the patients operated in their first year of life (68.2%), while the other operated in older age (31.8%).

Nijman RJM *et al* (1991) and Mayer DA *et al* reported that the percentage of complications post valve ablation is 5-25% for each [10,11]. We found our complication rate was less than 7% for each. Three patients died in the post operative period (6.8%) and this was slightly higher than the percentage reported by Connor JP (1990) [12] which is less than 5% and this difference because of lacking of full team work consisting of paediatric urologist, paediatric nephrologist, and neonatologist. VUR disappeared in 87.5%, Scott JRE reported that VUR resolves in more than 30% postoperatively [13].

The overall out come in this study was excellent. Most of the cases ended with good outcome (81.8%), reasonable outcome in (6.8%), and poor outcome in (11.4%). We found that the early the presentation of PUV, the worst the outcome. From those with poor outcome, 80% presented in the neonatal period, 20% infant. Hendren WH *et al* reported that early presentation of PUV was viewed as a poor prognostic sign and suggestive of a severe degree of obstruction. Late presentation suggested a lesser degree of obstruction with little clinical significance [14].

We tried to evaluate the association between the presence of VUR and the outcome and we found that the Presence of VUR does not significantly affect the outcome of management. Parkhouse HF *et al* showed that presence of VUR is poor prognostic sign [15]. This difference because in our study we did not differentiate between the presence of unilateral or bilateral VUR.

## VI. Conclusion

Most of the patients were treated by primary valve ablation and few by initial vesicostomy followed by valve ablation. Adjunctive therapy offered for those with renal insufficiency, septicemia and so. The outcome of management was good in most cases with few patients ended with poor outcome.

There is still much to be learned about PUV. There are many areas still deficient in our country. Long term follow up is not yet scheduled. This is important for long term assessment of outcome and complication of management. Also antenatal diagnosis and interventions are not well established.

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