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Problems in managing the outcome of posterior urethral valves at LRH Hospital

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***Abstract*---**Aim: The goal of this study is to characterise the appearance of posterior urethral valves and evaluate the effectiveness of their treatment in settings with limited medical resources. Methods: The Department of Urology at lrh Peshawar performed a retrospective, descriptive research between Jan 2019 and Jan 2021. The presentation, duration of symptoms, complications, and treatment outcome were all considered. Results: There were 460 patients in total. Approximately three years old was the midpoint [02 days–10 years]. The average time from the onset of symptoms to diagnosis was [2.4 years]. 400 (90%) individuals reported urosepsis; 160 (34%) patients showed unilateral or bilateral reflux; 70 (16%) patients presented with big decompensated bladder, and 80 (18%) patients presented with substantial renal insufficiency. The radiological results verified the presumptive diagnosis of the posterior urethral valve. All patients underwent a cystoscopy and valve fulguration; some underwent further vesicostomy or ureterostomy procedures. Conclusion: According to the study, late presentation is common in

our setting. High rates of illness and death are linked to this. The medical community must work toward greater awareness and earlier diagnosis to slow the epidemic.

Keywords---vesicoureteral reflux, renal insufficiency, vesicostomy, ureterostomy.

Introduction

Posterior urethral valves (PUV) cause most LUTS blockage in male babies[1]. In our environment, the incidence of this congenital disability is unclear. Still, in the U.S. and Europe, it occurs in [1:7000 to 01:24,000] live male births and accounts for ten per cent of in-utero urinary obstructions[2]. Increasingly, impairment. Despite breakthroughs in the medicinal and surgical care of PUV, [12%-65%] of children still develop chronic renal failure [CRF] or end-stage renal disease [ESRD] during long-term follow-up3. The prenatal diagnosis of PUV hasn't helped. PUV includes the PUV cases \s2 are identified by prenatal pathophysiology, therapy effects Ultrasound This may be due to widespread ultrasound usage and improved technique[4]. Prenatal detection and termination of afflicted foetuses reduce posterior urethral valves' occurrence in certain communities. In 45% of instances, foetuses with valves were aborted. 3. Symptoms vary by age and valve type[5]. Sometimes the sole symptoms are repeated UTIs and failure to thrive. Lower urinary tract blockage causes back pressure on the kidneys, resulting in obstructive uropathy with unclear renal insufficiency. This research evaluates posterior urethral valves (PUV) in a developing nation, focusing on disease characteristics, outcome drivers, and treatment issues[6].

Patients and Methods

It's a retrospective descriptive research conducted in The Department of Urology at lrh Peshawar. This research comprised individuals whose PUV diagnosis was verified by voiding cystourethrogram, renal ultrasonography, or cystoscopy. Jan 2019 through Jan 2021 was the study's duration. The nephrology and urology units treated several renal failure patients: age, symptom duration, and any. The proforma included a list of complications and instructions for handling them. All basic tests (CBC, CUE, culture sensitivity, RPM, S/E) and diagnostic imaging (ultrasound abdomen, Voiding cystourethrogram, DTPA renal scan) were performed.

Temporary catheter drainage, antibiotics, and intravenous hydration stabilised patients. Peritoneal dialysis helped some individuals with renal failure. After initial stabilisation, all patients underwent cystoscopy and valve fulguration, and a Foley catheter was inserted for [02-05] days. On the second day, patients were released with four to [10] days of antibiotics. Routine follow-ups were at 02 weeks, 06 weeks, and 04 months. Every visit included RFT, CUE, culture sensitivity, and abdominal Ultrasound. Patients with unilateral or bilateral reflux and renal insufficiency had MCUG at 04 months and DTPA and DMSA renal scans at 06 months.

After fulguration, individuals with VUR who had recurrent UTIs or renal impairment underwent supravesical urinary diversion. Progressive renal failure patients were given medication, peritoneal, or haemodialysis in the paediatric nephrology ward. SPSS-24 analysed data.

Results

A total of 460 patients were enrolled in the research. The mean symptom duration was [02.56] years, and the median age at presentation was [02.70] years [02 days to 10 years]. Prenatal screenings detected the condition in just ten individuals (4.1%). Urinary retention was the most prevalent anomaly in all patients (100%) or nearly all (100%). Recurrent urinary tract infection with fever was the second most prevalent presentation, occurring in 414 patients (90 per cent) (most often Escherichia coli (63 per cent), Pseudomonas aeruginosa (8 per cent), and Klebsiella (13 per cent), whereas 16 per cent did not grow any organism. Two-hundred-thirty individuals (29%) were diagnosed with failure to thrive.

Exams revealed that 75% of patients (350) had a palpable bladder, 60% (262) had anaemia (haemoglobin 10 mg/dl), and 9% (40) had elevated blood pressure. One hundred and eighty patients presented with a serum creatinine level below [1.5mg/dl, whereas 100 patients presented with a level over [1.8mg/dl. Seventy patients (14% of the total) required peritoneal dialysis before surgery. Vesicoureteral reflux was detected by cystourethrogram in 160 patients (32 per cent), in 90 patients (21 per cent), and in 70 afflicted persons (14 per cent). Seventy patients, or around 16 per cent, had excessively big bladders and had been decompensated. If a patient is doing well 15-18 months following surgery, 64 per cent of them will stop being followed up. Seventy (30%) individuals had to be hospitalised and given intravenous antibiotics because they had so many urinary tract infections (>3 per year). Because of their vesicoureteral reflux, 10% of patients had one or both kidneys removed, 5% had a cutaneous ureterostomy, and 0% had a vesicostomy. Eighty-nine [18%] patients with chronic renal failure were kept alive with dialysis (22% on peritoneal dialysis, 7.0% on hemodialysis). For reasons including declining health and a lack of access to treatment, 70% of people with severe renal impairment have disappeared or are thought dead.

Figure 1: Statistics showing the age distribution of patients' presentation.

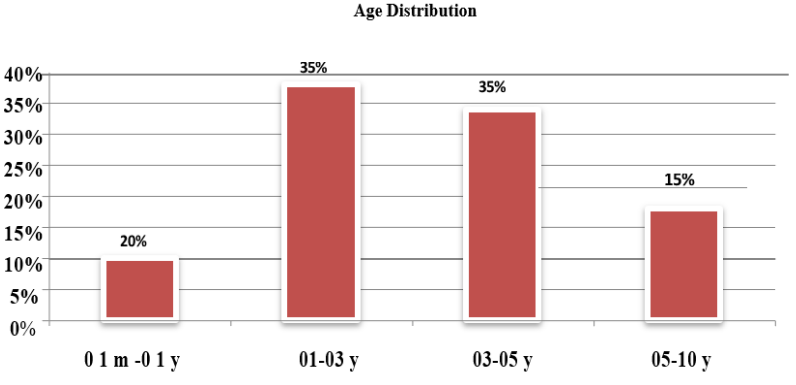
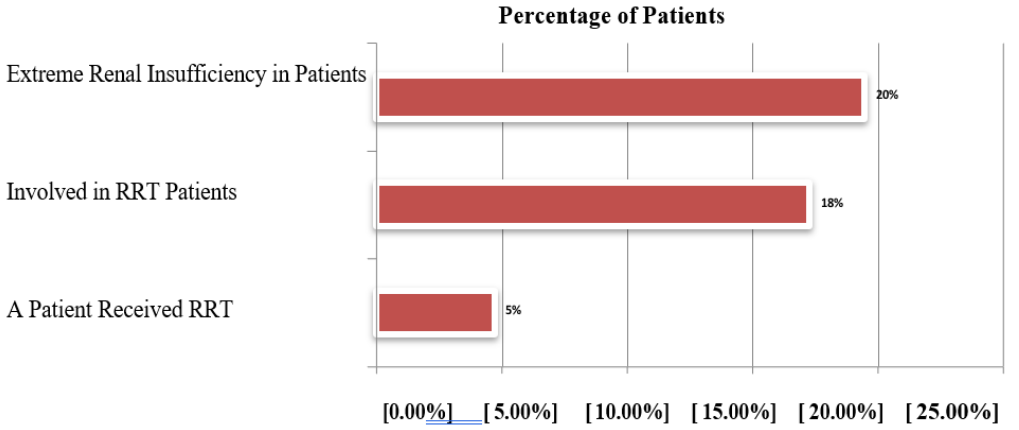


Figure 2- Kidney replacement therapy availability and accessibility



Discussion

One of the rare defects of the urinary system that provide a serious risk of death in the newborn era is congenital blockage of the urethra. Even with the best medical care, incontinence and impaired renal function are common long-term consequences of these injuries[7]. Patients' age when first diagnosed with PUV has been used to predict how their kidneys would perform down the line. Unfortunately, there is a lack of consistency in our data on this topic. The earlier a symptom presents, the sooner it may be diagnosed and treated. Because of this, renal function may be better preserved[8]. Hydronephrosis, increasing renal damage, and urine ascites are all consequences of obstructive uropathy that may be avoided with early diagnosis and treatment[9]. Prenatal diagnosis of PUV is possible12,13; however, only 10 (4.3% of our patients) had a prenatal diagnosis (Fig. 1). Major obstacles to prenatal ultrasound care include stigma, difficulty accessing care, and high costs.

Studies have indicated, however, that early detection is more common in severe degrees of hydronephrosis, which is reflected in poor functional outcomes[10]. In a study by Ansari and coworkers, 95 patients who were less than two years old at presentation were compared with a one-year-later presentation rate of 96 patients[10]. Patients who presented after age two had a higher rate of azotemia, a higher median blood creatinine, and a higher chance of end-stage renal disease[11]. Numerous studies have shown inconsistent results, suggesting that postnatal age upon diagnosis is not reliable in predicting prognosis for valve patients.

Urinary retention, weak stream, or dribbling urine was the most often reported symptom. In almost every one of our patients, this was noted[12].In our study, [90%] of patients with PUV also had recurrent urinary tract infections, which might be a presenting symptom. UTIs in this patient population have a convoluted and multi-factorial pathogenesis[13]. Several causes contribute to VUR, including urine stasis caused by anatomic or functional blockage, dysfunctional elimination syndrome, urinary tract instrumentation, and voiding dysfunction.

Renal scarring and the acceleration of CKD toward end-stage renal failure are also possible outcomes of UTIs[14].Patients with PUV who arrive with an elevated blood creatinine level had a worse prognosis, according to a study18. In newborns with PUVs, renal insufficiency affects around 24-45% before they reach puberty[15]. Creatinine increases, even temporarily after urinary tract drainage, are clinically relevant in infants with posterior urethral valves. It is a novel and consequential marker of prediction for the future.

As a result of elevated intravesical pressure, VUR occurs in one-third to one-half of individuals with this congenital condition. However, whereas milder cases of reflux clear up on their own, severe cases of reflux in a kidney with weak differential function often never clear up completely[16]; even though their kidney function remained steady throughout infancy, several individuals were found to develop ESRF once they hit puberty. Evidence linking other renal risk factors, such as VUR, UTI, and renal dysplasia, to ESRD is mounting (Fig. 2) [17]. Most of our patients had advanced stages of disease when they were first seen, including VUR (34% of cases) and renal failure (20% of cases) [18]. Our patients' prolonged absences from medical care are linked to the widespread poverty in the country. Lack of understanding that a weak urine stream may be temporary and that the infant may become better over time is another probable cause. The late presentation may occur because of the healthcare industry's subpar referral system. Therefore, it is anticipated that the prognosis would improve with the early presentation, diagnosis, and therapy[19]. The 65% survival rate reported here is much lower than that reported by other Asian and Western facilities (86% and 95.02–100%, respectively) [20]. The following are critical warning signs. To raise doctors' and nurses' levels of understanding, we should support medical education initiatives to do just that. Babies born to mothers who come to obstetricians with oligohydramnios should be tested for PUV. Those who appear with symptoms of a UTI should be thoroughly evaluated to rule out a urogenital abnormality[21].

Conclusion

The overall outcome of these patients is, therefore, crucially dependent on early diagnosis and prompt initiation of treatment. This is especially crucial in a low-resource setting when paediatric renal replacement treatment facilities are in short supply.

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