

Original Article

Posterior Urethral Valve: Effects of Delay in Presentation

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Objectives: Evaluation of effects of delay in presentation on the growth and general health of patients of PUV.

Material and Methods: Clinical data of consecutive 25, radiologically diagnosed and endoscopically confirmed cases of posterior urethral valve was collected from the hospital record to study referral pattern, age at presentation, state of health (weight, height, hemoglobin level and serum creatinine level) at the time of presentation and severity of disease.

Results: A little more than 50% of patients were referred by adult urologists while 20% patients came through their pediatricians. Only 2 patients presented in the neonatal age. Those who presented in the neonatal age had their weight and height well within normal range while 61% of patients presenting beyond neonatal age had their weight below the 3rd percentile for age and 65% of them had their height below the third percentile. Similarly those patients who presented in the neonatal age had their hemoglobin levels within normal range while 74% of patients presenting beyond neonatal life were anaemic. Serum creatinine level was raised in both the neonates but returned to normal or near normal after treatment while it persisted at a level above normal for patients who presented beyond neonatal age.

Conclusion: There seems to be a need to improve awareness about this disease within the profession as well in the general public. Delay in referral significantly interferes with the growth and development of these patients.

Key Words: Posterior urethral valve, COPUM.

Introduction

There is no disease in pediatric urology which is as devastating and yet as common as posterior urethral valve in a male child. Although the name 'valve' has been challenged and in its place the term congenital obstructive posterior urethral membrane (COPUM) has been suggested,^{1,2} the principles of treatment have remained unchanged. Antenatal diagnosis³ and early relief of obstruction are the most important components of management but unfortunately late presentation still mars the final outcome of this treatable condition. This paper attempts to study the clinical course of this disease in patients presenting at a district level.

Material and Methods

A retrospective study was conducted on 25 consecutive patients of posterior urethral valve, treated over a period of two and a half years (between June 2000 and December 2002). The following data was retrieved from the patient record files and analyzed:

Mode of referral (referred by a pediatrician, pediatric surgeon, adult urologist, general surgeon, family physician or others) was looked for and this was available in 20 cases.

Age at the time of presentation was studied in all the 25 cases and patients were divided into two groups, those who presented in the neonatal age were placed in one group and those who presented after neonatal age were placed in another group and their weight, height, hemoglobin levels and serum creatinine levels before and after the treatment were compared.

Weight at the time of presentation was studied in 25 patients as plotted on percentile chart for the age and patients were divided into two groups and compared; those at or below the 3rd percentile for age were placed in one group and those above 3rd percentile for age were placed in another group.

Height at the time of presentation could be studied in 18 cases out of 25 and these patients were divided into two groups and compared. One group comprised of those at or below 3rd percentile for age and the other group consisted of those who were above the 3rd percentile for age.

Hemoglobin level, at the time of presentation could be studied in 20 patients. Patients were again divided into 2 groups and compared, those having hemoglobin at or above 10 g/dl and those having their hemoglobin value below 10 g/dl.

Serum creatinine level, as noted at the time of presentation could be retrieved in 23 patients. Again

two groups of patients were made, those having serum creatinine level at or below 1 mg/dl and those having their serum creatinine above 1 mg/dl.

Results

Out of 25, 13 (52%) patients were referred to us by adult urologists whereas 3 (12%) patients came to us through pediatricians. One patient each was referred by a general surgeon, a family physician and a trainee resident of pediatric surgery. Remaining 6 patients sought treatment on their own.

Twenty three (92%) patients presented to us beyond the neonatal age whereas 2 (8%) patients sought treatment within 4 weeks of delivery. Those patients who presented in the neonatal age had their weight well above the third percentile (25th and 36th percentile) while in the group that presented beyond neonatal age, only 9 (39%) patients had their weight above the third percentile for the age.

Height record could be found in 19 patients. Both the patients who had presented in the neonatal life had their height near 55th percentile while 11 (65%) out of 17 patients presenting after neonatal life had their height below the 3rd percentile for the age.

Record of hemoglobin estimation was available in 21 patients. Both the patients presenting within neonatal age had their hemoglobin level above 15 g/dl (well within normal range for the age) while 14 (74%) of the patients presenting beyond neonatal age were anaemic (hemoglobin level below 12 g/dl).

Serum creatinine estimation record was available in 23 patients. This was raised at the time of presentation in both the neonates (4.4 mg/dl and 0.9 mg/dl) and returned to near normal or normal (0.7 mg/dl and 0.4 mg/dl respectively) after treatment. In the group that presented late, serum creatinine was above 1.0 mg/dl in 9 (43%) out of 21 patients and persisted above normal in 4 (19%) cases.

Discussion

A very interesting referral pattern has been observed in this study. Generally, pediatrician is considered as the family physician of pediatric age group and he is expected to refer such patients to an appropriate professional. Our experience however, has been quite different. We received more than 50% of our patients through adult urologists while only 12% of patients came through a pediatrician. Thirty six percent of patients came through other sources. As we regularly receive all other pediatric surgical cases from most of the pediatricians of the region, this may reflect underestimation of the presenting

features by colleagues from within the profession.

It is reported with great concern that only 8% of patients suffering from a disease which could have very easily been picked during antenatal ultrasound scans reached us in the neonatal age. This compares poorly with the pattern of presentation in the developed world where 25-50% of patients present in the neonatal life.^{4,5} One reason of this could be poor access of majority of our mothers to an antenatal service. However this could also suggest that those who are performing antenatal ultrasound scans need more training to improve their diagnostic skills.

The fact that both the patients who presented in neonatal age had their weight, height and hemoglobin levels within normal limits further stresses on the need for early diagnosis and referral of this treatable disease. Those patients who are denied proper treatment for long start lagging behind in their growth and may find it difficult to catch up with the healthy population.

Though majority of our patients presented late, more than 50% of our patients had their serum creatinine at or below 1 mg/dl at the time of admission. However, out of those patients in whom serum creatinine was raised above normal at the time of presentation, neonates showed a better recovery than those who presented late. Serum creatinine does not seem to correlate very well with the somatic growth⁶ and merits to be evaluated further.

Conclusion

There is an urgent need for creating awareness regarding antenatal diagnosis of this disease both within our profession and in the community.

If definitive treatment is denied for long, this form of obstructive uropathy can adversely affect the growth and general health of the patients.

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