



## BILATERAL PYELOPLASTY FOR BILATERAL PELVI URETERIC JUNCTION OBSTRUCTION IN A NEONATE: A CASE REPORT

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### ABSTRACT

The introduction and widespread use of antenatal ultrasonography has increased the diagnosis of fetal hydronephrosis in utero<sup>[1-3]</sup>. Antenatal ultrasound screening detects fetal hydronephrosis in around 1% of fetuses<sup>[1,4]</sup>. One of the most common causes of antenatally diagnosed hydronephrosis is ureteropelvic junction obstruction (UPJO)<sup>[3]</sup>. Here we report a neonate of 20days old with antenatally diagnosed bilateral hydronephrosis, who subsequently underwent bilateral open pyeloplasty with dj stenting.

#### Key words:

Hydronephrosis, obstruction, pelvis.

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### INTRODUCTION

Bilateral ureteropelvic junction (UPJ) obstruction occurs infrequently. When surgical management is deemed necessary, staged pyeloplasties traditionally have been recommended to minimize the morbidity associated with performing procedures concurrently. In children, bilateral ureteropelvic junction obstruction is present in approximately 10-40% of UPJ obstructions (8,9). Most bilateral cases are asymmetrical, with one side being more severely affected than the other. When surgical intervention is deemed necessary, staged pyeloplasties traditionally have been recommended. While the success of performing concurrent bilateral open pyeloplasties has been reported (10), many surgeons remain hesitant to perform this procedure because of the morbidity associated with operating on both kidneys concurrently and the potential for acute bilateral renal obstruction. As a result, staged pyeloplasty is often considered safer. However, it requires the need for the patient to undergo two separate operations, which are separated by a potentially prolonged recovery period.

Many reports deal with the unilateral idiopathic UPJO with a functionally, ultrasonographically, and renographically normal contralateral renal unit and many researchers manage their patients by initially conservative approaches with subsequent ultrasonographic or renographic follow-up<sup>[5-7]</sup>. Compared with unilateral UPJO, however, few published papers deal with the management protocol for neonatal

patients with prenatally diagnosed bilateral hydronephrosis that leads to the postnatal diagnosis of severe bilateral UPJO. Factors to be considered in planning the surgical treatment of neonatal severe bilateral UPJO are as follows. Would we operate urgently? If yes, would we operate on both renal units simultaneously or separately? If separately, which renal unit should be corrected first? How long can we wait to correct the later-operated renal unit after the initial pyeloplasty? Is it necessary to place percutaneous nephrostomy (PCN) tube drainage to the later-operated renal unit for the preservation of renal function during the waiting period? These questions have been on the minds of many pediatric urologists for a long time. But it is true that there is a paucity of clear recommendations regarding the management of severe bilateral UPJO. Therefore, we report a neonate of 20days old with antenatally diagnosed bilateral hydronephrosis, who subsequently underwent bilateral open pyeloplasty with dj stenting.

### CASE REPORT

A one day old male child was referred to us with bilateral hydronephrosis. On evaluation of the baby, the antenatal scans shows bilateral hydronephrosis and the post natal scans shows the same findings. MCU was done to rule out vesico ureteric reflux. Baby general condition was good, good urine output, serum creatine 0.7mg/dl. Baby was on close follow-up. On day 18 repeat ultrasound scan abdomen done which showed the increase of both A-P diameter of both pelvis. Nuclear imaging done which shows decrease of the left kidney differential function when compared to the opposite kidney. So decision of pyeloplasty made and was performed

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by open surgical procedure bilaterally by anderson hynes pyeloplasty at the same time, in order to avoid a second surgical procedure later on. Post operative was uneventful.



a



b

1 a&b USG day 1 showing bilateral hydronephrosis



a

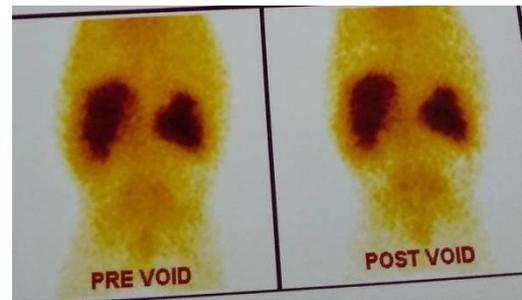


b

2a&b USG day 18 showing bilateral hydronephrosis where in the AP diameter of pelvis is increased



3 MCU showing no evidence of reflux



4 DTPA scan showing bilateral dilated pelvicalyceal system



a



b



c

5a,b&c Intra operative images showing dilated pelvis, dismembered pelvi ureteric region, anastomosis of pelvi ureteric junction

King *et al* reported that early correction of UPJO is advocated as soon as the diagnosis is established and that young infants show more rapid improvement in RRF than do older children<sup>[11]</sup>. Tapia and Gonzalez reported that pyeloplasty in children younger than 1 year with grades 3 or 4 hydronephrosis secondary to UPJO is effective at improving renal function and they recommended early pyeloplasty for children with reduced function of the involved kidney<sup>[12]</sup>

Recently, many institutes around the world have followed these trends in reserving pyeloplasty with conservative observation in the management of unilateral hydronephrosis with apparent UPJO. Compared with unilateral UPJO, however, few published management protocols exist for neonates with prenatally diagnosed bilateral hydronephrosis that leads to the postnatal diagnosis of severe bilateral UPJO. Theoretically, there are two possible approaches to these patients with severe bilateral UPJO: (1) initial conservative management followed by intervention when renal function

## DISCUSSION

The management of neonates with unilateral UPJO has remained a controversial issue for a long time, and this issue has stayed on the minds of many pediatric urologists.

deteriorates or progression of hydronephrosis occurs, and (2) early intervention independent of initial renal function.

There are many reports to suggest delayed surgical intervention followed by close, conservative observation focused on surveillance. Onen *et al* reported that only 35% of total renal units with prenatally diagnosed primary grade 3 to 4 bilateral hydronephrosis required unilateral or metachronous bilateral pyeloplasty, and the remaining 65% of renal units that were followed nonoperatively showed resolution or improvement of the hydronephrosis for a mean 54 month follow-up. Kim *et al* reported that patients who underwent early surgical correction were expected to show faster and reliable improvements in hydronephrosis, although not only the patients who underwent early surgical correction but also those treated by the conservative method could yield acceptable improvements. They concluded that early surgical intervention should be considered in patients with bilateral UPJO<sup>[13]</sup>.

Preservation of the optimal renal function of both units is a main goal of follow-up of a patient with bilateral UPJO. Previously published papers reported that although there was no consensus regarding such a cutoff value for the recommendation of early surgical correction, an initial RRF <30-40% can serve as an indication for early pyeloplasty<sup>[14,15]</sup>. However, these well-organized studies included mild hydronephrosis such as SFU grade 1 or 2 and enrolled cases of unilateral UPJO.

## CONCLUSION

Meticulous dissection and handling of the tissues helps us in achieving good surgical results and in performing bilateral open surgical procedure at the same time which in turn avoids a second procedure later on.

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