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REVIEW ARTICLE

Postnatal management of antenatally diagnosed ureteropelvic junction obstruction

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Abstract *Objective:* The management of antenatally diagnosed ureteropelvic junction obstruction (PUJO) is controversial. Here, we present our experience over a period of 13 years and discuss our management protocol.
Materials and methods: We reviewed the files of 234 patients with antenatally diagnosed congenital hydronephrosis due to PUJO. Management was tailored to each patient, based on a combination of diethylenetetraminepentacetic acid renogram outcome, pelvic diameter, as well as the patient's symptoms.
Results: Pyeloplasty was carried out early in 52 kidneys. Of the total, 182 patients were managed expectantly. Out of these, 45 underwent delayed pyeloplasty. The remaining 137 patients (189 units) were managed non-operatively. In patients who underwent early pyeloplasty, the mean split differential renal function was 37% before and 40.05% after surgery. In those with delayed intervention, the mean renal function was 37.8% before and 42.2% after surgery. In patients who did not have surgery, the mean differential renal function was 45.7% initially and 48.2% at the last accepted follow up. The overall operative success rate was 97.9%.
Conclusion: We believe that pyeloplasty is the proper treatment for babies with congenital PUJO and $< 40\%$ split differential function and/or pelvic diameter > 35 mm at the initial visit. In other patients a period of observation is warranted, and pyeloplasty should be carried out only if their kidney function deteriorates or the renogram curve does not show improvement. With the excellent results of pyeloplasty we believe that a safer approach is to operate on more kidneys rather than risk of losing valuable kidney function.

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Introduction

The use of ultrasonography (US) in antenatal diagnosis has presented us with new challenges in the care of the fetus and newborn [1]. There are far more cases diagnosed with hydronephrosis now than before the introduction of US for antenatal screening [2].

Experience has shown that not all hydronephrosis is obstructive [3,4]. This has initiated considerable research into the definition of obstruction and ways of differentiating obstructive from non-obstructive hydronephrosis. A general consensus on the management of this condition has not yet been reached. Here, we review our experience with 234 patients with ureteropelvic junction obstruction (PUJO), who were referred to us for surgical opinion between 1990 and 2003, and discuss our management protocol for this condition (see Fig. 1).

Material and methods

The records of 234 infants with antenatally diagnosed hydronephrosis, who presented to us between 1990 and 2003, were analyzed retrospectively. The number of patients who eventually had surgery, as well as the number of patients who were kept under observation until discharged, were noted. We looked at patient records for patients with unilateral hydronephrosis, and which side was affected, patients with bilateral hydronephrosis, and which side went on to have surgery, as well as the gender of patients and their age at surgery.

According to our protocol, patients with pelvic diameter >35 mm are subjected to a DTPA renogram during the first week of life. Although a renogram at this stage is not a real assessment of kidney function due to renal immaturity, we use it to compare function of the hydronephrotic kidney with function of the unaffected kidney. If the hydronephrotic kidney function is $<15\%$, we would opt for percutaneous nephrostomy and repeat the DTPA renogram after 1 month. Pyeloplasty is performed if there is function recovery; otherwise, a nephrectomy is performed. If the hydronephrotic kidney function is comparable with that of the other kidney but still the pelvic diameter is >35 mm, pyeloplasty is performed straight away.

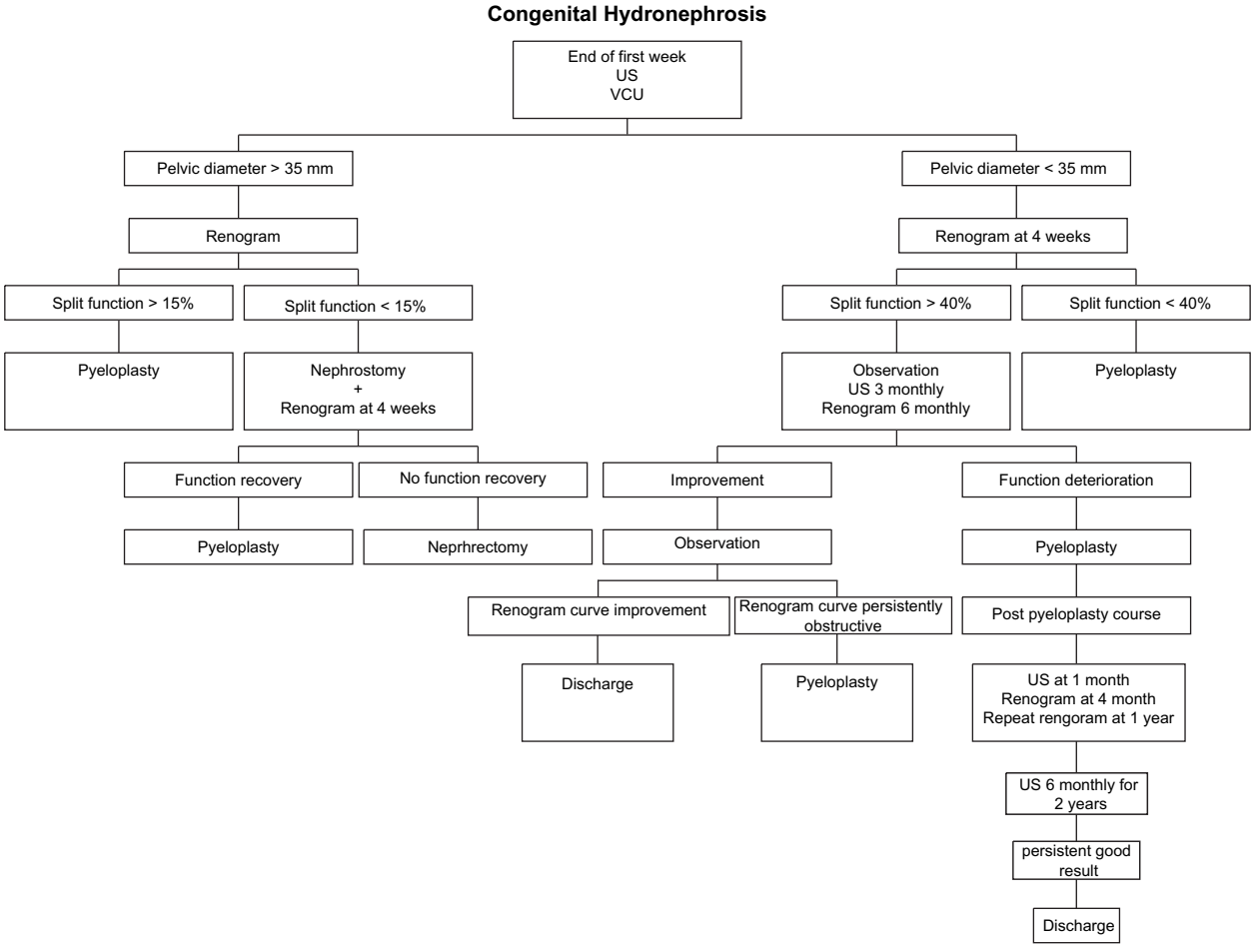

Figure 1 Management protocol for congenital hydronephrosis.