Prenatally Diagnosed Hydronephrosis Clinical Practice Guideline

Urinary tract dilation (hydronephrosis, hydroureteronephrosis, pyelectasis, pyelocaliectasis) is detected on prenatal ultrasound in 1-5% of all pregnancies. The severity of prenatal hydronephrosis correlates well with prevalence of anomalies. The severity of postnatal hydronephrosis is classified based on the Anterior Posterior Diameter (APD) measurement of each kidney:

	Second Trimester	Third Trimester
Mild:	≤ 7 mm	≤ 9 mm
Moderate:	7-10 mm	9-15 mm
Severe:	≥ 10 mm	≥ 15 mm

Most prenatally diagnosed hydronephrosis resolves spontaneously and causes no long term effects. However, 20% of infants with prenatal hydronephrosis have significant uropathy. If diagnosis and treatment are delayed, persistent hydronephrosis can lead to permanent renal destruction.

Therefore, all fetal urinary tract dilation necessitates postnatal evaluation. Most cases of hydronephrosis are not detected by physical exam and, therefore, require renal ultrasound evaluation postnatally. This should be done urgently in cases of severe bilateral or severe unilateral hydronephrosis. In less severe cases, ultrasound can be delayed for 10-14 days to allow for increased urine production to fill the dilated systems and increase the accuracy of the imaging. If postnatal renal ultrasound demonstrates hydronephrosis, VCUG is necessary to evaluate for VUR or intravesicular obstruction.

GUIDELINE

Mild Bilateral or Mild-to-Moderate Unilateral Hydronephrosis on prenatal U/S

Yes

- Renal ultrasound 10-14 days after delivery
- Consider earlier evaluation in patients with significant parental anxiety or difficulty accessing appropriate outpatient ultrasound
- Counsel families to maintain high index of suspicion for UTI and review signs and sxs.

Normal or improved U/S

- Follow-up with PCP
- Recommend follow-up renal U/S at 6 months and 1 year of age

- **Moderate-to-Severe Bilateral or Severe Unilateral Hydronephrosis on prenatal U/S**
- **Male with a distended bladder**

Yes

- Consult Pediatric Nephrology, 207-662-5522, if not already involved
- Renal ultrasound within 24 hours of delivery
- Check BMP at 12 hours of age
- Catheterize if patient has not voided within 24 hours

Persistent Hydronephrosis | Persistent Hydronephrosis | Normal U/S

- Consider amoxicillin or cephalexin prophylaxis (10-25 mg/kg PO daily)
- VCUG as soon as possible

Normal | Abnormal

- Follow-up with PCP
- Recommend follow-up renal U/S at 10-14 days, 6 months, and 1 year of age

If signs of obstruction or grade 5 VUR, consult Urology

References:

1. Estrada C. "Prenatal Hydronephrosis: early evaluation." Curr Opin Urol 18 (2008):401-403.
2. Hubert K and J Palmer. "Current Diagnosis and Management of Fetal Genitourinary Abnormalities." Urol Clin N Am 34 (2007):89-101.
3. Kallen RJ. "Management options when fetal imaging shows possible urinary tract anomalies." AAP News 2008;29;12.

For questions regarding this guideline, please contact the Medical Director of the Newborn Nursery. Algorithms are not intended to replace providers' clinical judgment or to establish a single protocol. Some clinical problems may not be adequately addressed in this guideline. As always, clinicians are urged to document management strategies. Revised April 2012.

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