Vesicoureteral reflux

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V esicoureteral reflux (VUR) is the retrograde flow of urine from the bladder to the upper urinary tracts. Primary VUR occurs because of a congenitally short intravesical ureter, resulting in inadequate closure of the UVJ during bladder contractions, and is seen in 1% of newborns. Secondary VUR follows from elevated intravesical pressure and is typically caused by PUV or -

(a) (b) (c) (d) Figure 20.5 (a) Preoperative ultrasound of a right kidney with uretero

pelvic junction obstruction showing hydronephrosis. (b) Preoperative mercaptoacetyltriglycine (MAG-3) activity curve showing delayed excretion of the obstructed right kidney with a half-life of 26 minutes.

(c) Ultrasound image of the right kidney after a pyeloplasty showing resolution of the hydronephrosis. (d) Postoperative MAG-3 activity curve graph showing improved excretion with a

half-life of 7.6 minutes.

a neurogenic bladder. VUR may be seen with hydronephrosis on an antenatal ultrasound or with a symptomatic UTI postna tally . A voiding cystourethrogram establishes the diagnosis and severity of VUR (Figure 20.7). Mild VUR typically resolves spontaneously as the patient grows and the intravesical ur matures and lengthens. These children are managed with surveillance if toilet-trained or prophylactic antibiotics if they are not. Moderate-to-severe VUR less commonly resolves and recurrent UTIs may lead to pyelonephritis and renal paren chymal loss from scarring. Persistent or severe VUR can be managed with a subureteric Teflon injection (STING), which alters the anatomy at the UVJ and limits reflux, or with ureteric reimplantation. Long-term follow-up is r equired.

C B A Figure 20.6 A retrograde pyelogram showing a left-sided ureteroves ical junction obstruction (A), causing a megaureter (B) and hydro nephrosis (C) .

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