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Clinical Image

Recurrent Urinary Tract Infections in a 5-year old Girl

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A 5-years-old girl presented with a history of recurrent febrile urinary tract infections. Her past instances of her UTI were diagnosed clinically and managed by the patient's primary care general practitoner (GP). She was referred to my care for consultation.

Workup

Voiding cystourethrogram (VCUG): Revealed high grade right vesicuretral reflex (VUR) and left sided mild VUR.

Figure 1: The collecting system of the right kidney with VUR revealed the 'flowerpot' sign.

Ultrasounagraphy: Picture of right renal chronic pyelonephritic changes with dilated pelvicalyceal system and a normal left renal unit with a thickened bladder wall and significant postvoiding residual urine.

99mTc-DMSA renal scan

99m Tc-DTPA renal study revealed the left kidney showing fair perfusion and 91.4% functionality with adequate peaking while the right kidney was poorly perfused and showed almost lose of right renal functionality with about 9% remaning in addition to a GFR of 7.292 ml/min with poor peaking.

Figure 2

Filling cystometrogram demonstrated high amplitude detrusor overactivity (DO) starting within normal Urinary bladder (UB) capacity for age with maximum cystometric bladder capacity (MCBC) of 280 ml. It also higlighed intact of sensations and complaint urinary bladder near capacity with multiple phasic detrusor overactivity without provacation and without leak till full capacity. Higher filling pressure and no urodynamic stress urinary incontinece (SUI) observed at different UB volume.

For voiding cystometrogram (pressure-flow study), increased sphincter activity was noted with a postvoidual residue (PVR) of 39

ml and when the testing was redone, it still showed the same data of DO with long voiding time with a PVR of 39ml. This was associated with obstructed voiding pattern with compansated detrusor contractility, resembling a detrusor-external sphincter dyssynergia (DESD) like pattern.

Figure 3

Managed as follows

- Alpha blocker (Omnic Ocas 0.4 mg, once daily), anticholinergic (vesicare 5 mg tid or bid) and long term Antimicrobial therapy- Sulfamethoxazole and trimethoprim were intiated.

Followup protocol

1. Urine culture for cultrue and sentivity,
2. Ultrasoungraphy for Post voiding residual,
3. Cystometry for detrusor overactivity,
4. Nephrectomy to be considered once:
    a. A low intravesicule bladder pressure is achieved,
    b. No residual urine,
    c. Abscence of any degree of left VUR during the 3 to 6 months of montoring and followup.