



Functional Lower Urinary Tract Obstruction (LUTO) Mimicking Posterior Urethral Valves; A Report of Two Children

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Disclosures

- **None**



Background



- **Congenital LUTO associated with urologic morbidity, CKD**
- **In-utero sonographic findings:**
 - Megacystis
 - Urethral dilation
 - Hydronephrosis
 - Oligohydramnios
- **Posterior Urethral Valves (PUV) most common etiology**

Case 1 – Prenatal Course



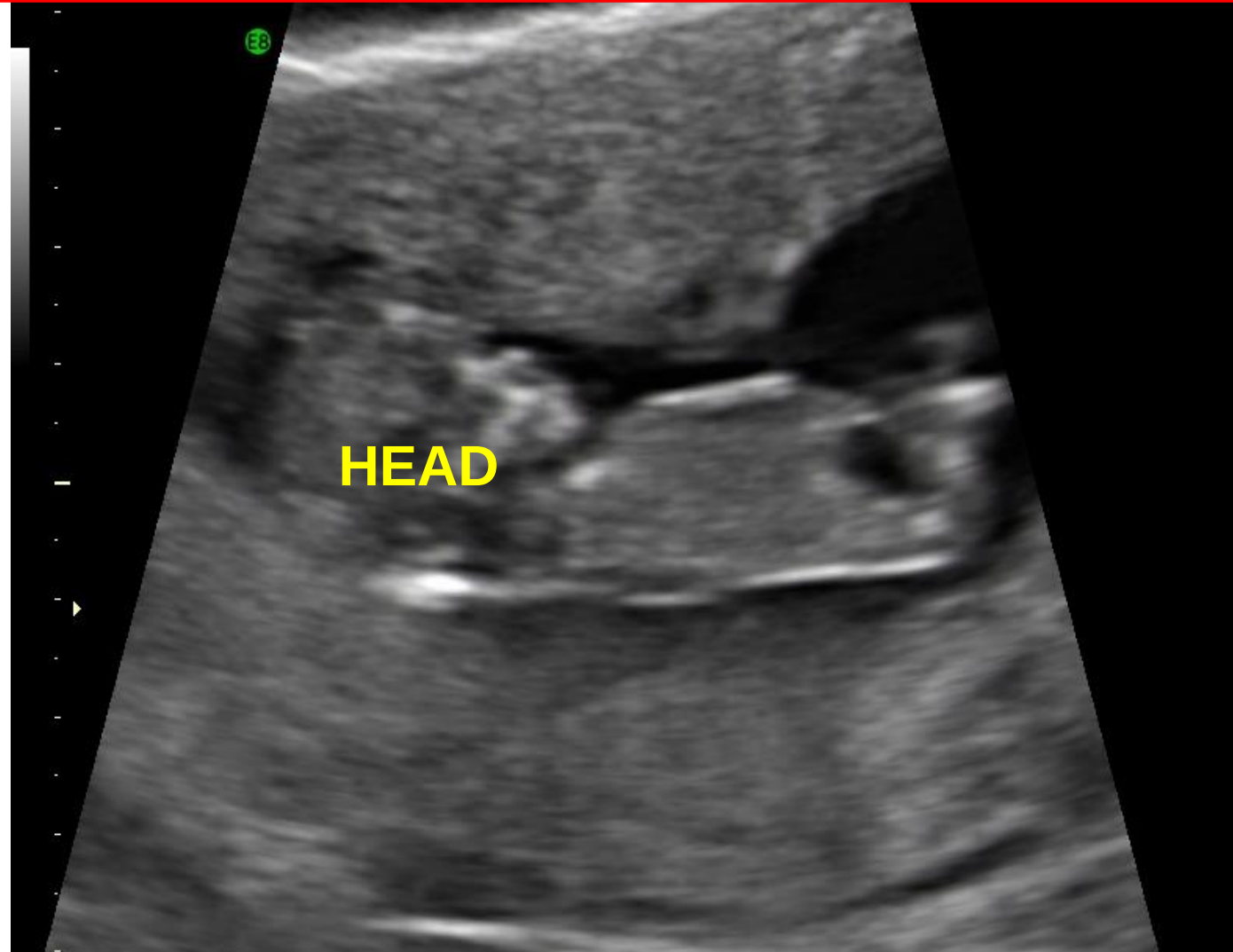
**Gestational
Age**

12 weeks

16 weeks

39 weeks

- **36y, G5P2 mother**
- **Megacystis**



Case 1 – Prenatal Course



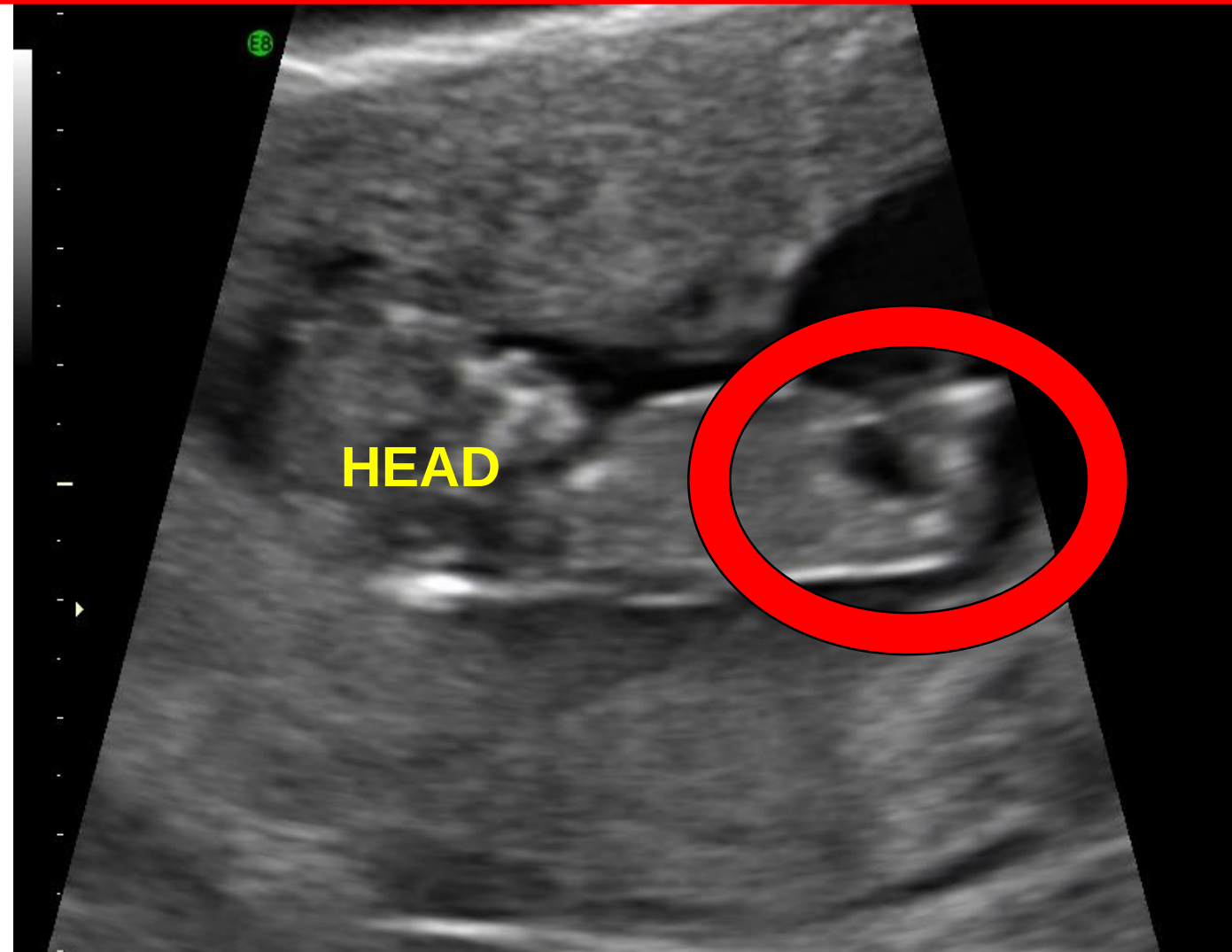
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Case 1 – Prenatal Course



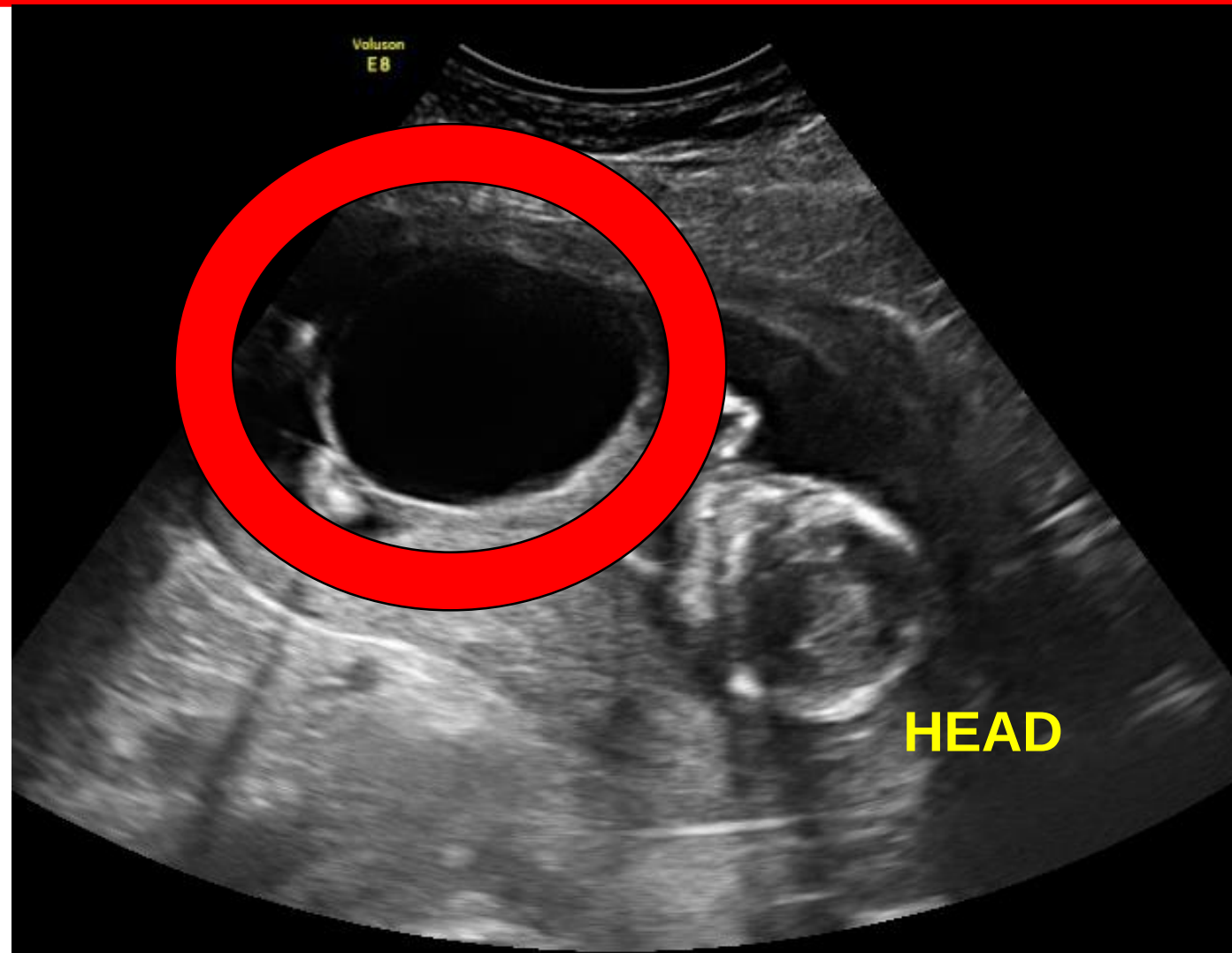
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Case 1 – Prenatal Course



**Gestational
Age**

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16 weeks

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- **36y, G5P2
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- **Megacystis**
 - Posterior urethral
dilation
 - Bilateral
caliectasis



Case 1 – Prenatal Course



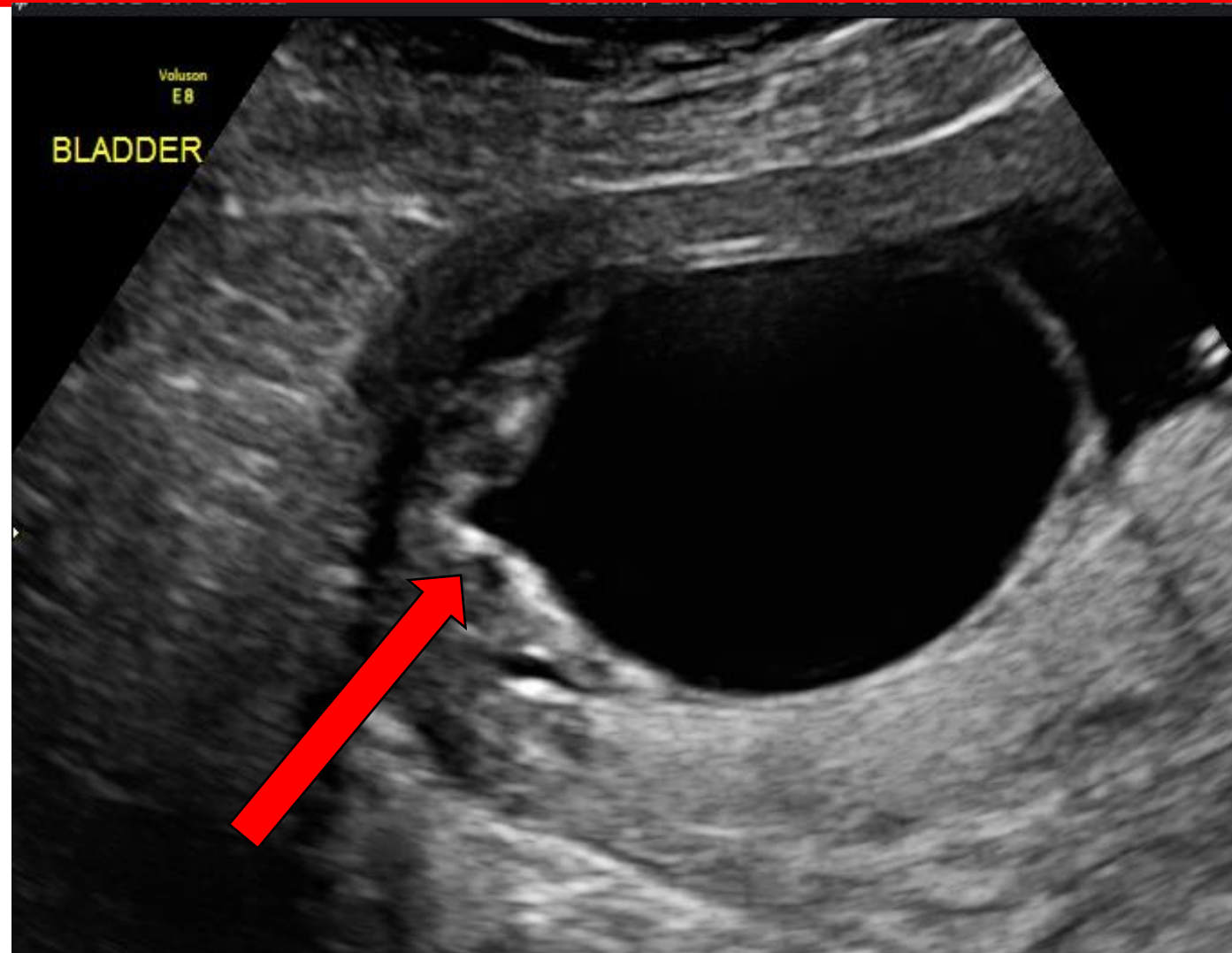
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Case 1 – Prenatal Course



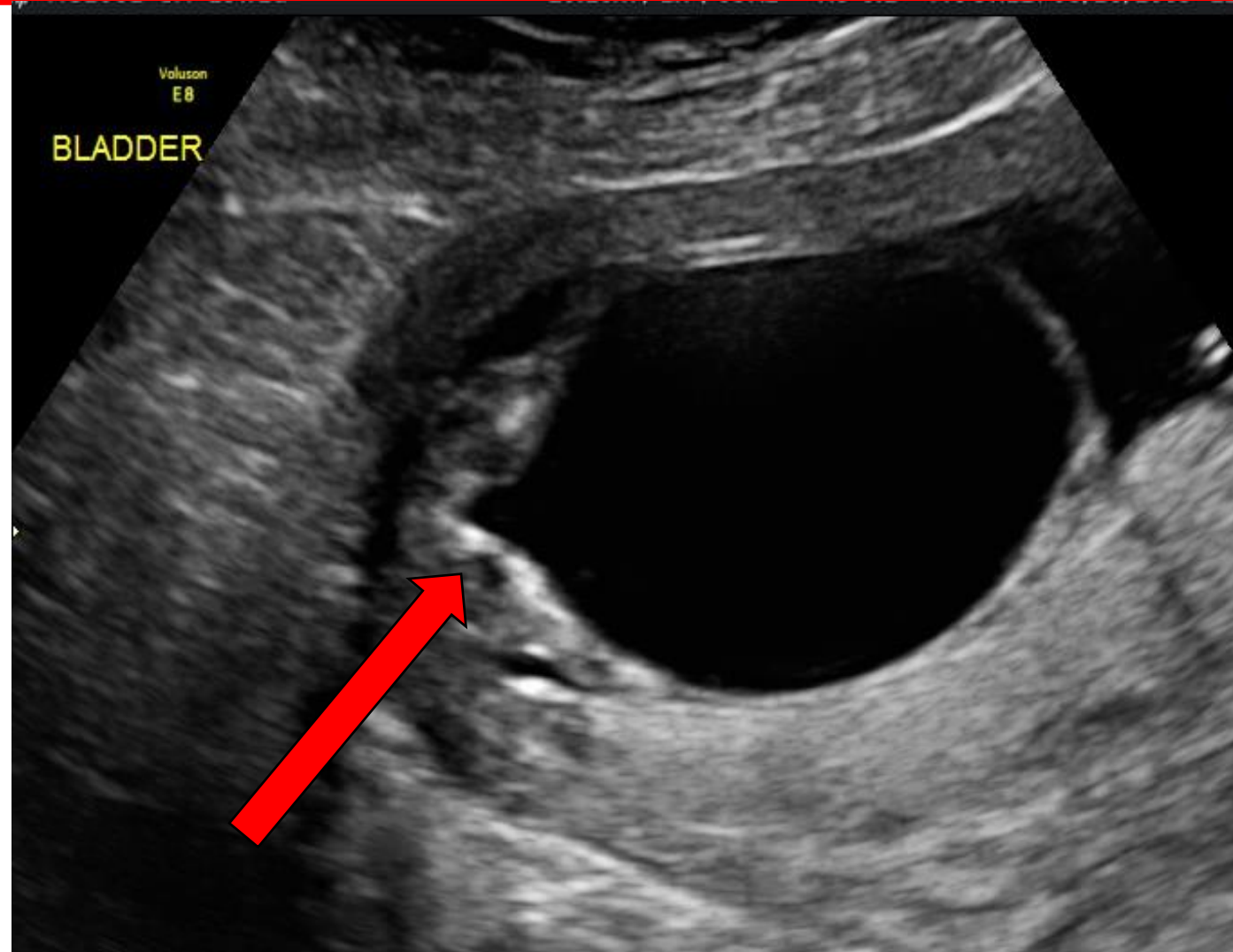
**Gestational
Age**

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16 weeks

39 weeks

- **36y, G5P2 mother**
- **Megacystis**
 - Posterior urethral dilation
 - Bilateral caliectasis
- **Normal electrolytes**



Case 1 – Perinatal Course



Gestational Age

12 weeks

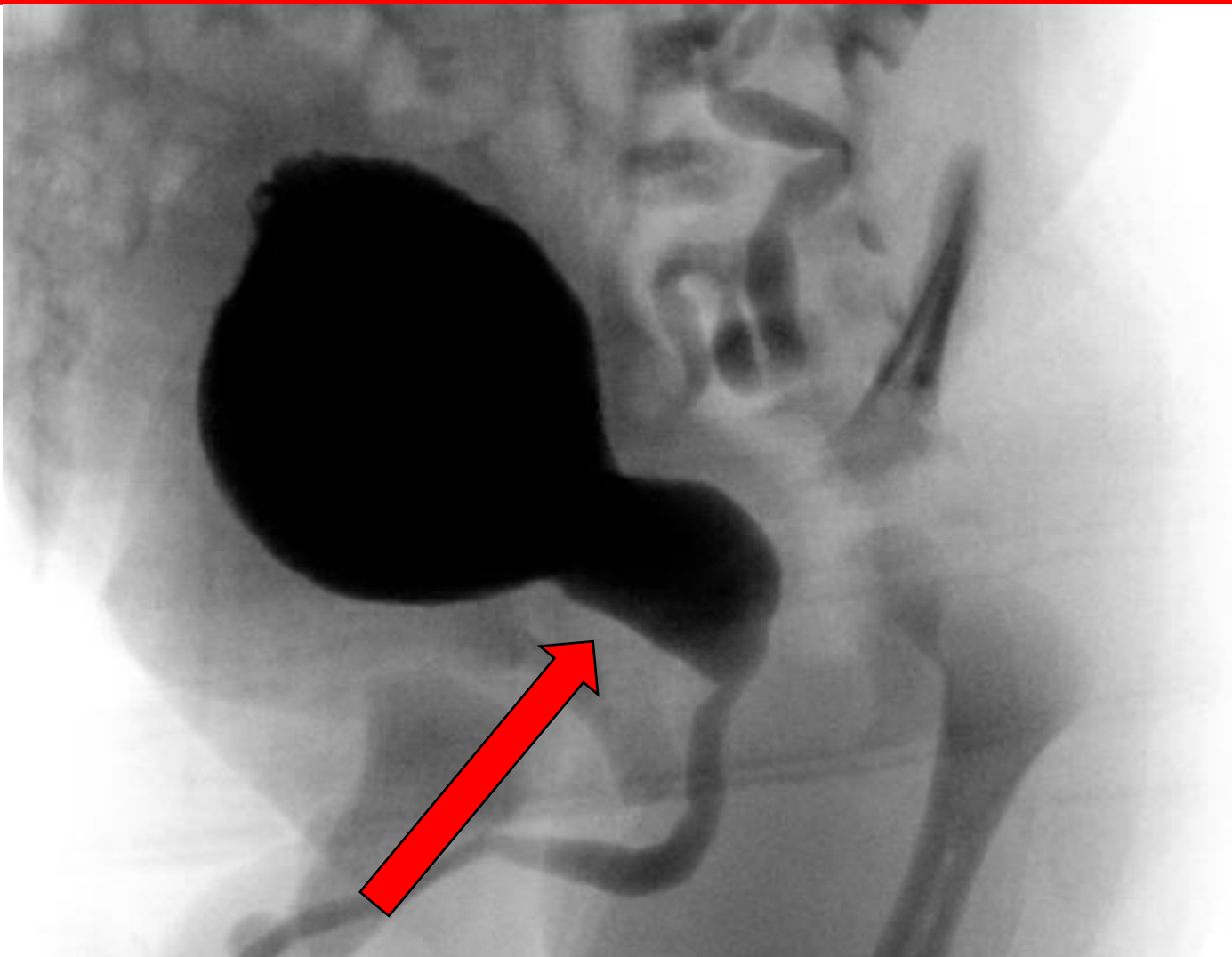
16 weeks

39 weeks

- **Scheduled induction of labor**
 - APGARs 7 | 9
 - Spontaneous voiding
 - Normal abdomen, respiration

Case 1 – Postnatal Course

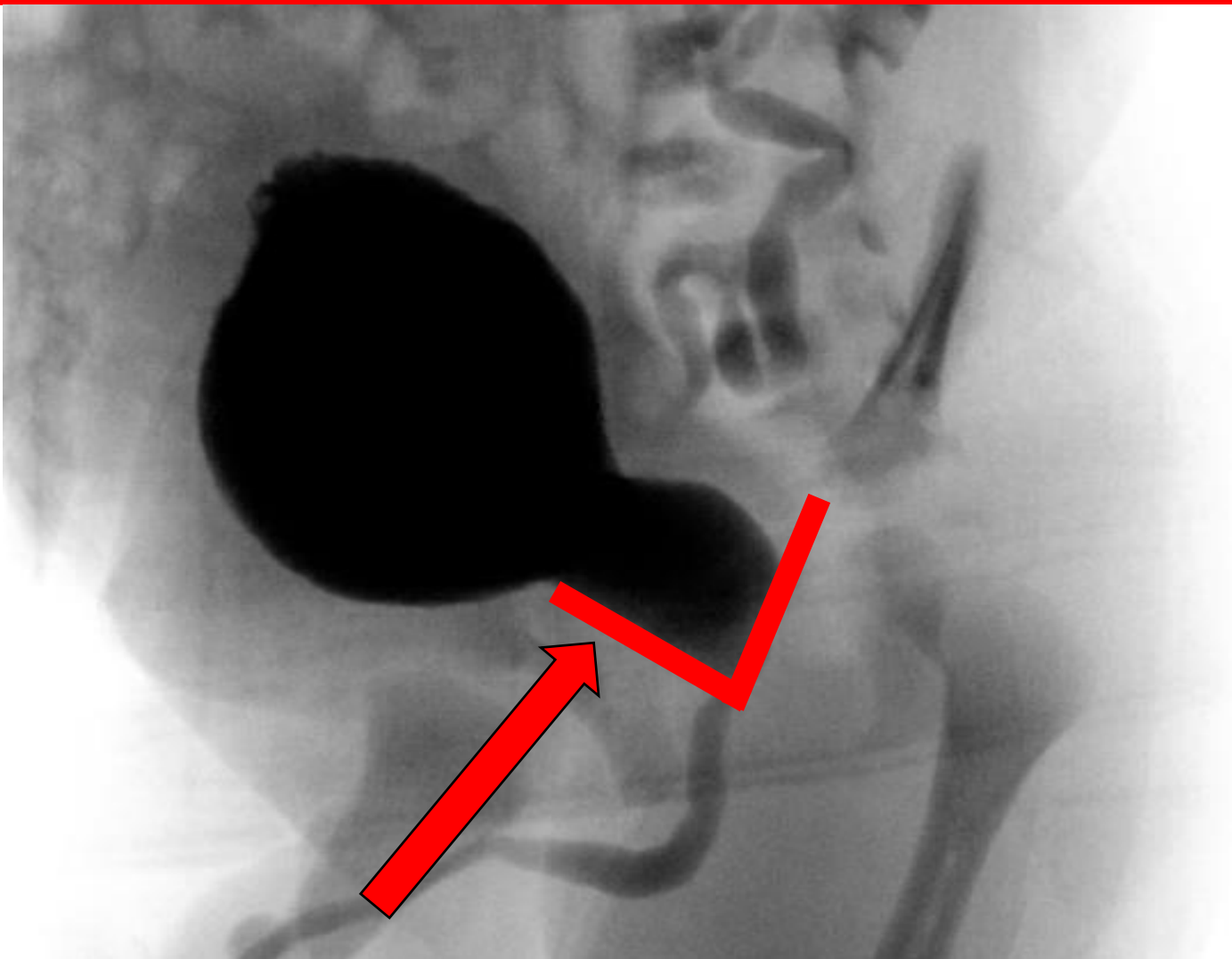


Age	• VCUG – Posterior urethral dilation	
3 days		
6 days		
18-19 mo.		

Case 1 – Postnatal Course

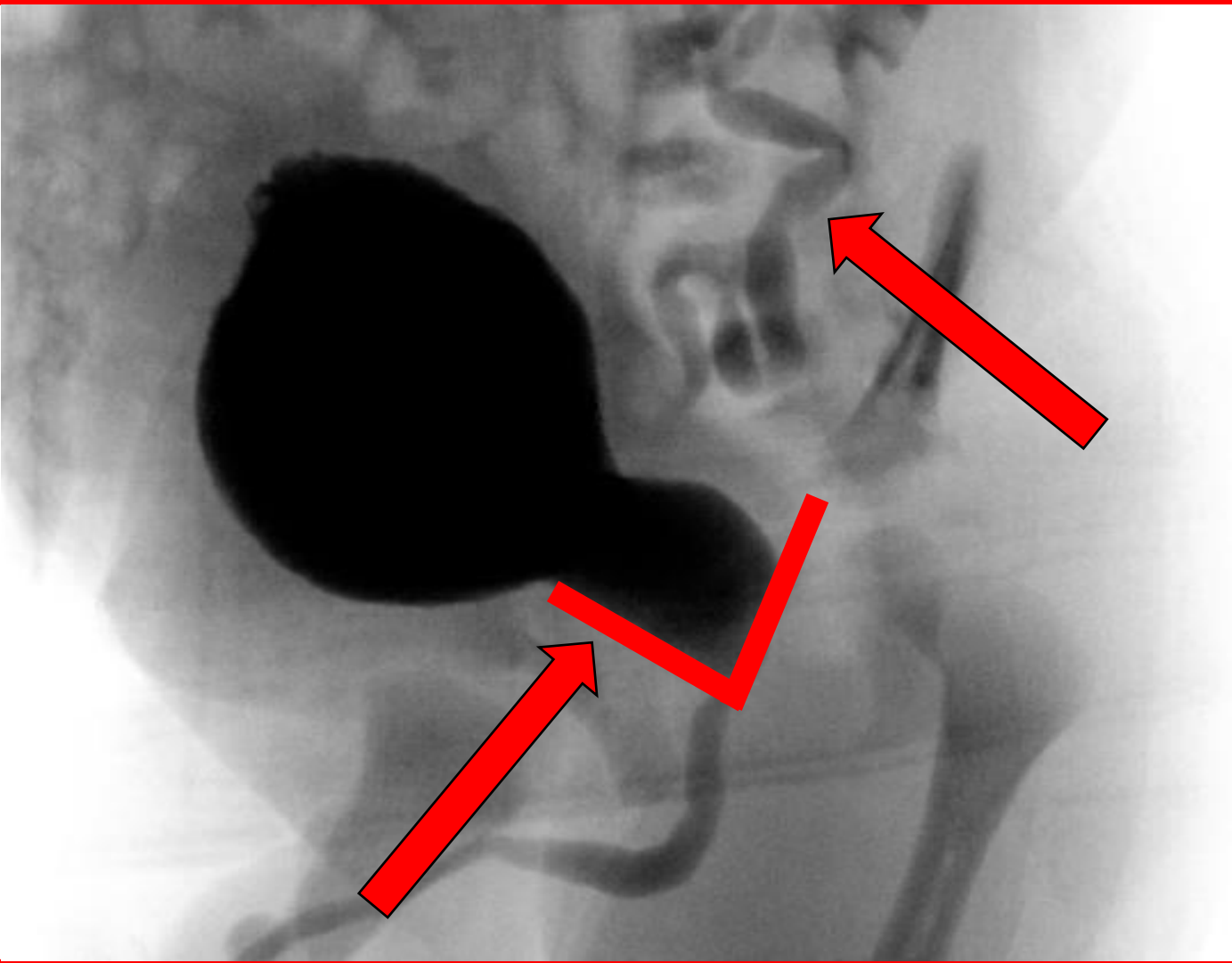


Age	• VCUG – Posterior urethral dilation	
3 days		
6 days		
18-19 mo.		

A grayscale VCUG (Voiding Cystourethrogram) image showing the urinary tract. The bladder is a large, dark, rounded structure. The ureter is visible as a thin line extending from the bladder. A red arrow points to the posterior urethral dilation, which is a dark, elongated structure extending from the bladder. A red checkmark is placed next to the arrow, indicating a successful outcome or confirmation of the finding.

Case 1 – Postnatal Course



Age	• VCUG	
3 days	– Posterior urethral dilation – Grade IV reflux	
6 days		
18-19 mo.		

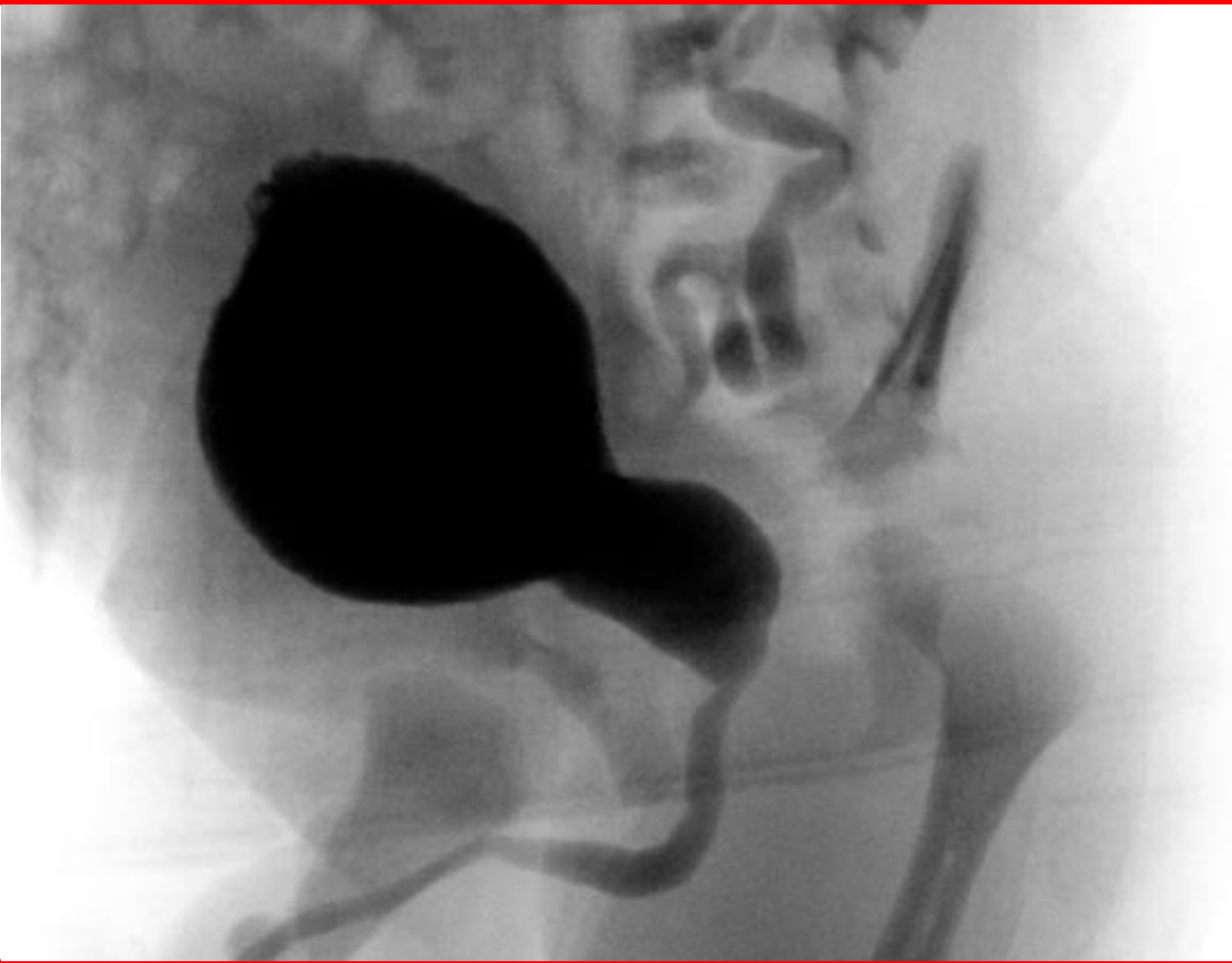
Case 1 – Postnatal Course



Age		
3 days	• VCUG – Posterior urethral dilation – Grade IV reflux • RBUS – Thickened bladder wall	 A grayscale VCUG image showing a large, dark, rounded bladder. Two red arrows point to the posterior urethra and the bladder wall, indicating areas of interest.
6 days		
18-19 mo.		

Case 1 – Postnatal Course

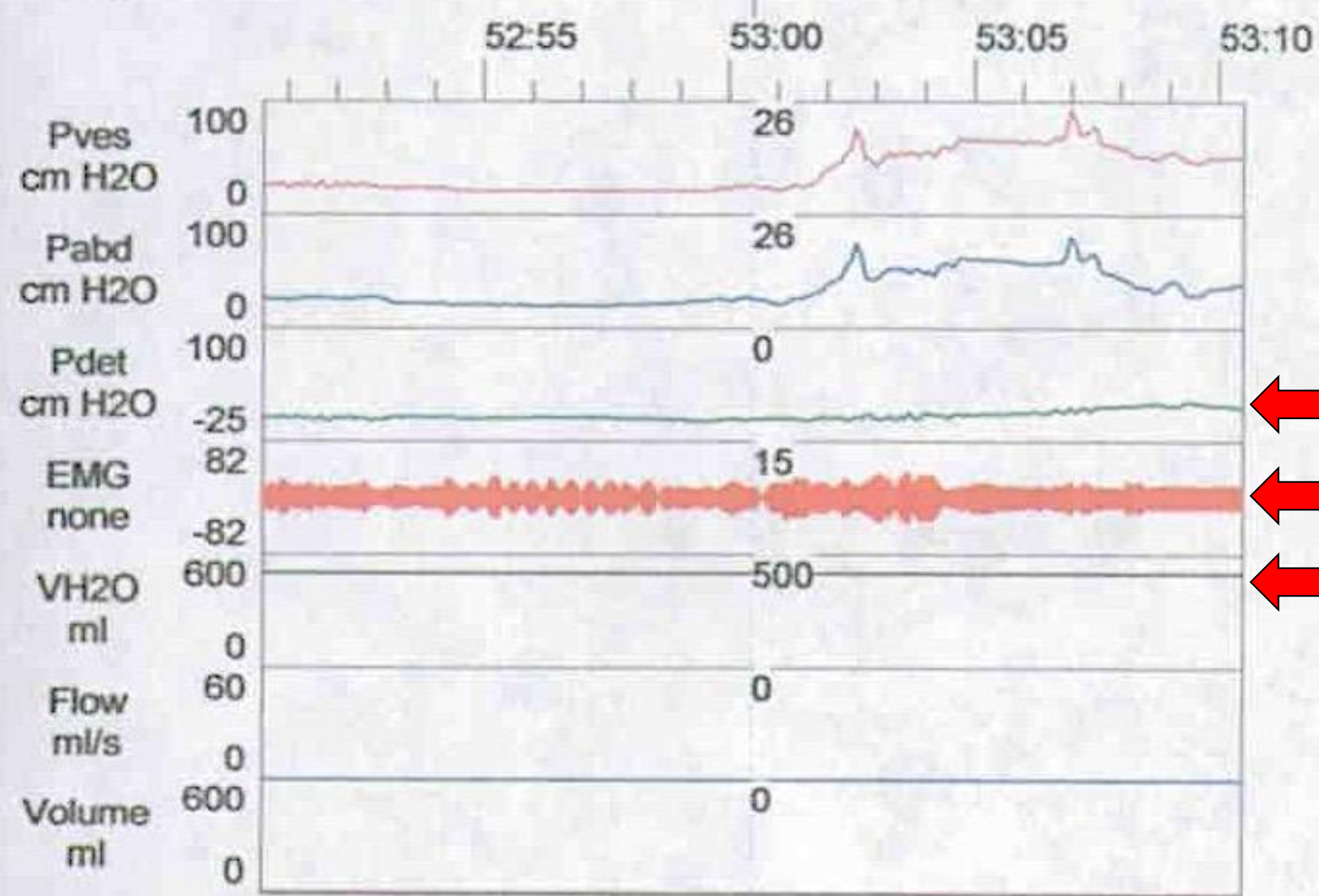


Age	• Cystoscopy – No valves – Normal bladder – Dilated, normal posterior urethra	 A black and white cystoscopic image showing a dark, rounded bladder and a thin, curved urethra.
3 days		
6 days		
18-19 mo.		

Case 1 – Postnatal Course

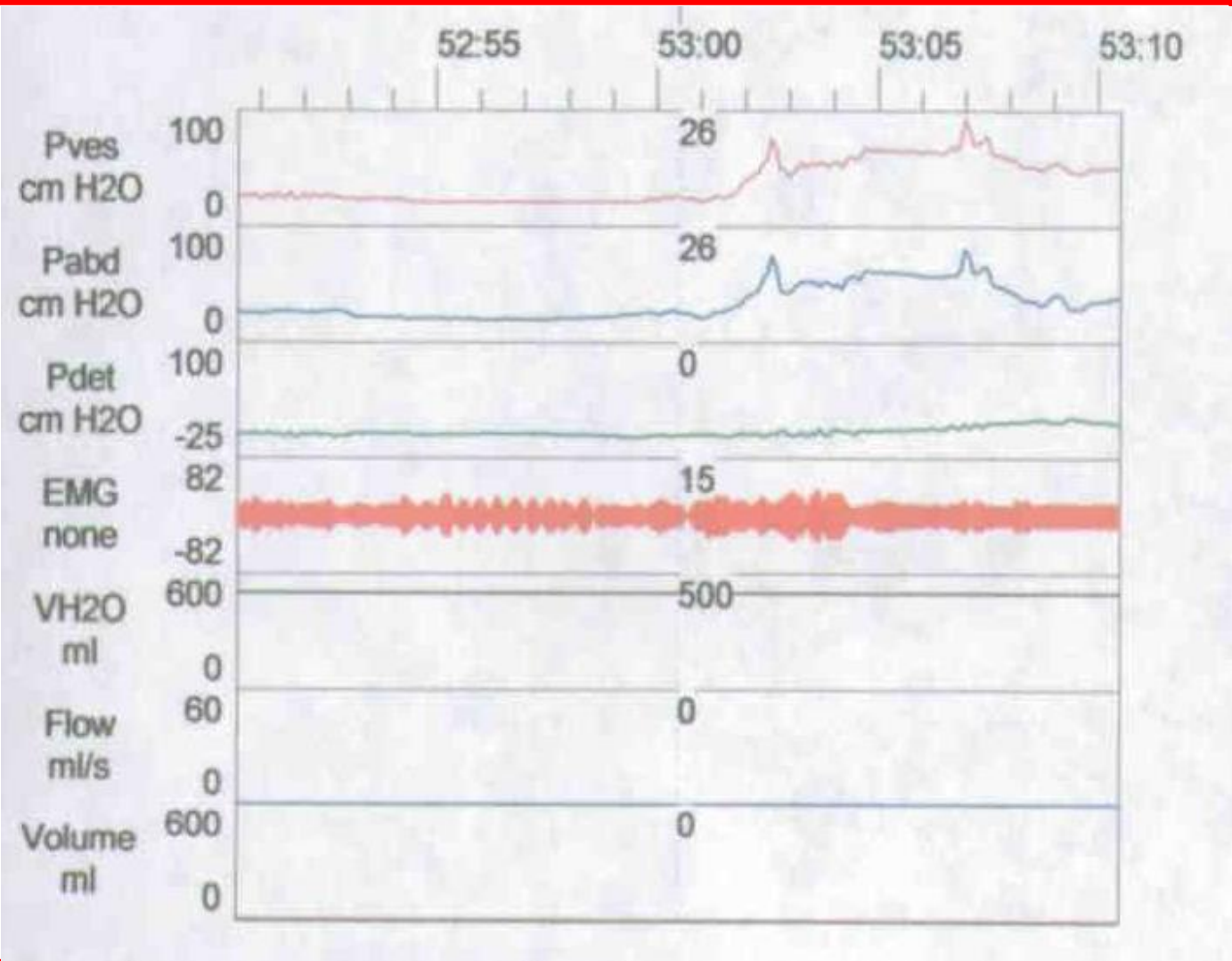


Age	
3 days	• Recurrent UTI • Retention • Urodynamics
6 days	
18-19 mo.	



Case 1 – Postnatal Course



Age	• Recurrent UTI	 The graph displays six physiological parameters over a time interval from 52:55 to 53:10. The parameters and their corresponding y-axis scales are: Pves (cm H2O, 0-100), Pabd (cm H2O, 0-100), Pdet (cm H2O, -25 to 100), EMG (none, -82 to 82), VH2O (ml, 0-600), and Flow (ml/s, 0-60). The x-axis is marked with time: 52:55, 53:00, 53:05, and 53:10. Numerical values are provided for each parameter at 53:00: Pves=26, Pabd=26, Pdet=0, EMG=15, VH2O=500, and Flow=0. The Pves and Pabd traces show a significant increase starting around 53:00, peaking near 100 cm H2O. The EMG trace shows a dense band of activity around 15. The VH2O and Flow traces show a sharp increase starting around 53:00, peaking near 600 ml and 60 ml/s respectively.
3 days	• Retention • Urodynamics – 800cc capacity	
6 days	– Hypocontractile detrusor	
18-19 mo.	– Dysfunctional sphincter • Vesicostomy	

Case 2 – Prenatal Course



**Gestational
Age**

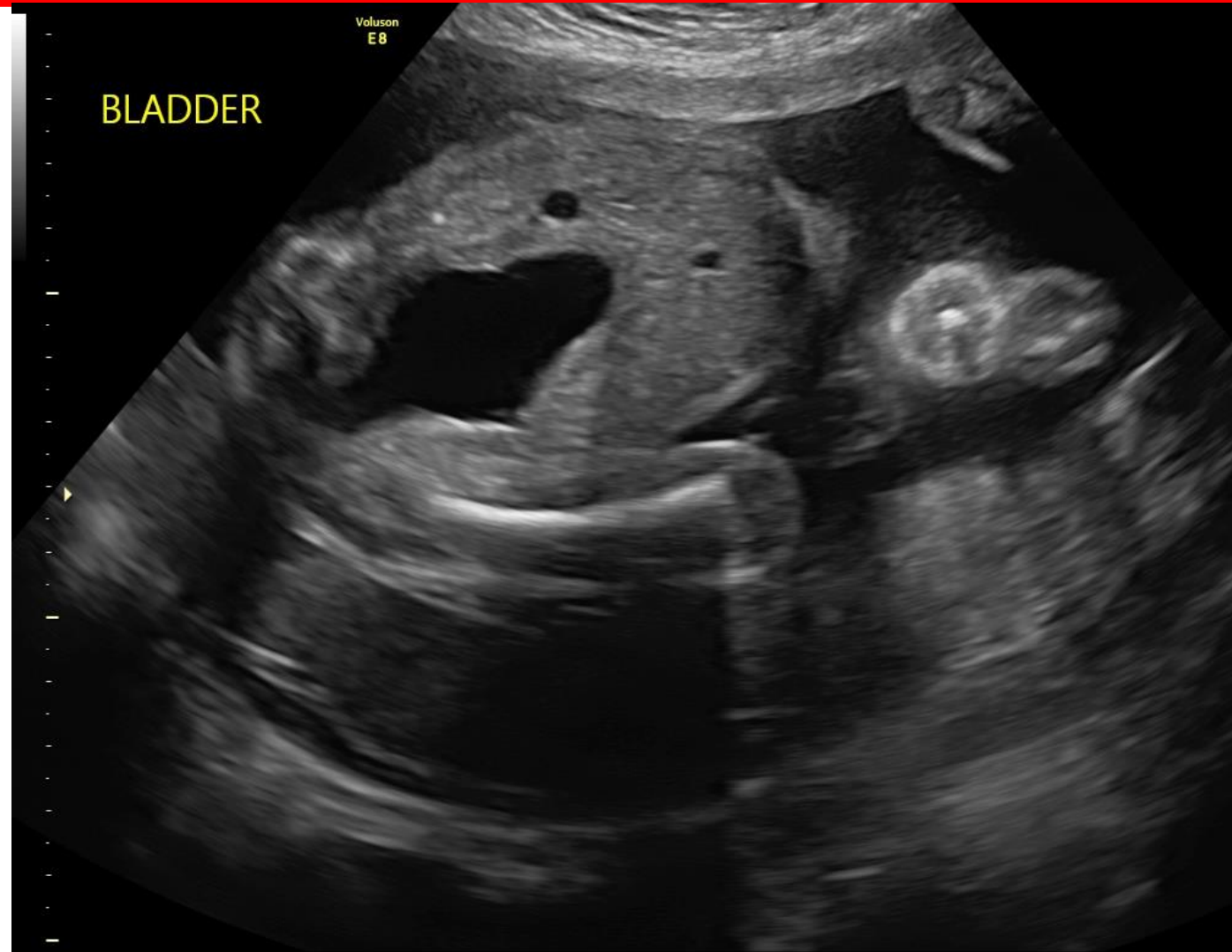
19 weeks

40 weeks

3 days

6+ days

- **27y, G2P1
mother**
- **Megacystis**



Case 2 – Prenatal Course



**Gestational
Age**

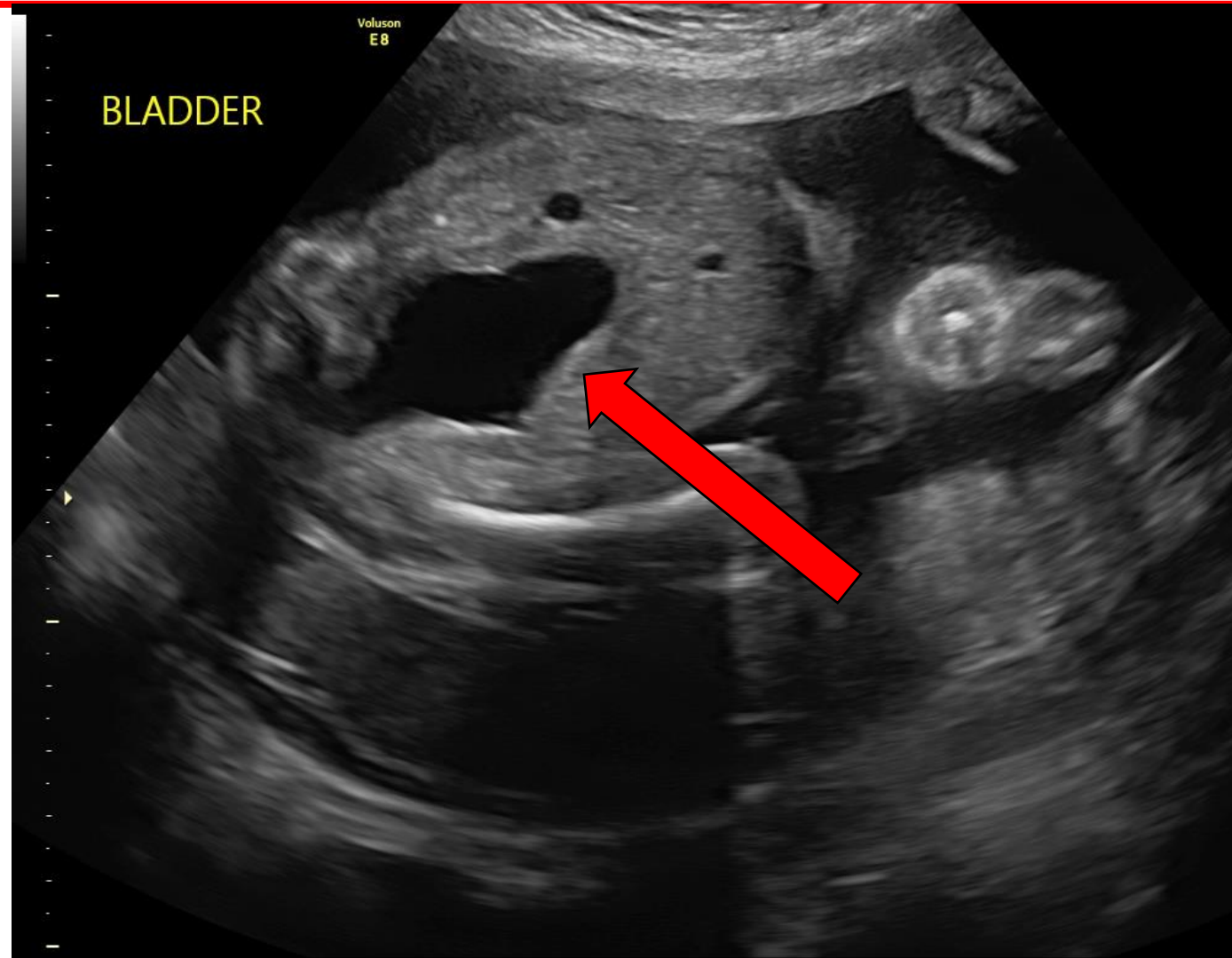
19 weeks

40 weeks

3 days

6+ days

- **27y, G2P1
mother**
- **Megacystis**



Case 2 – Prenatal Course



**Gestational
Age**

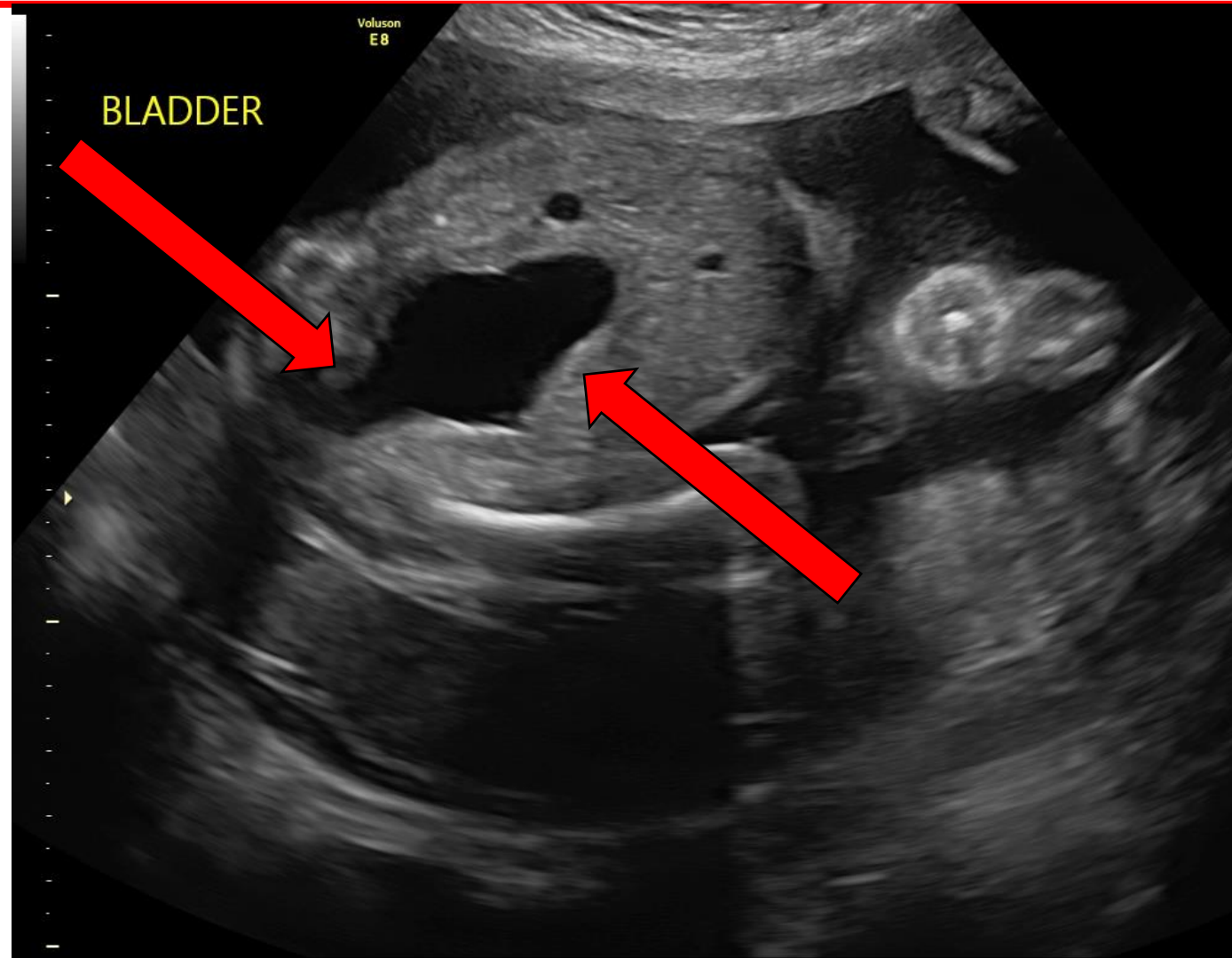
19 weeks

40 weeks

3 days

6+ days

- **27y, G2P1 mother**
- **Megacystis**
 - Posterior urethral dilation
 - Hydrouretero-nephrosis



Case 2 – Perinatal Course



**Gestational
Age**

19 weeks

40 weeks

3 days

6+ days

- **Spontaneous vaginal delivery**
 - APGARs 9 | 9
 - Spontaneously voiding

Case 2 – Postnatal Course



- **VCUG**

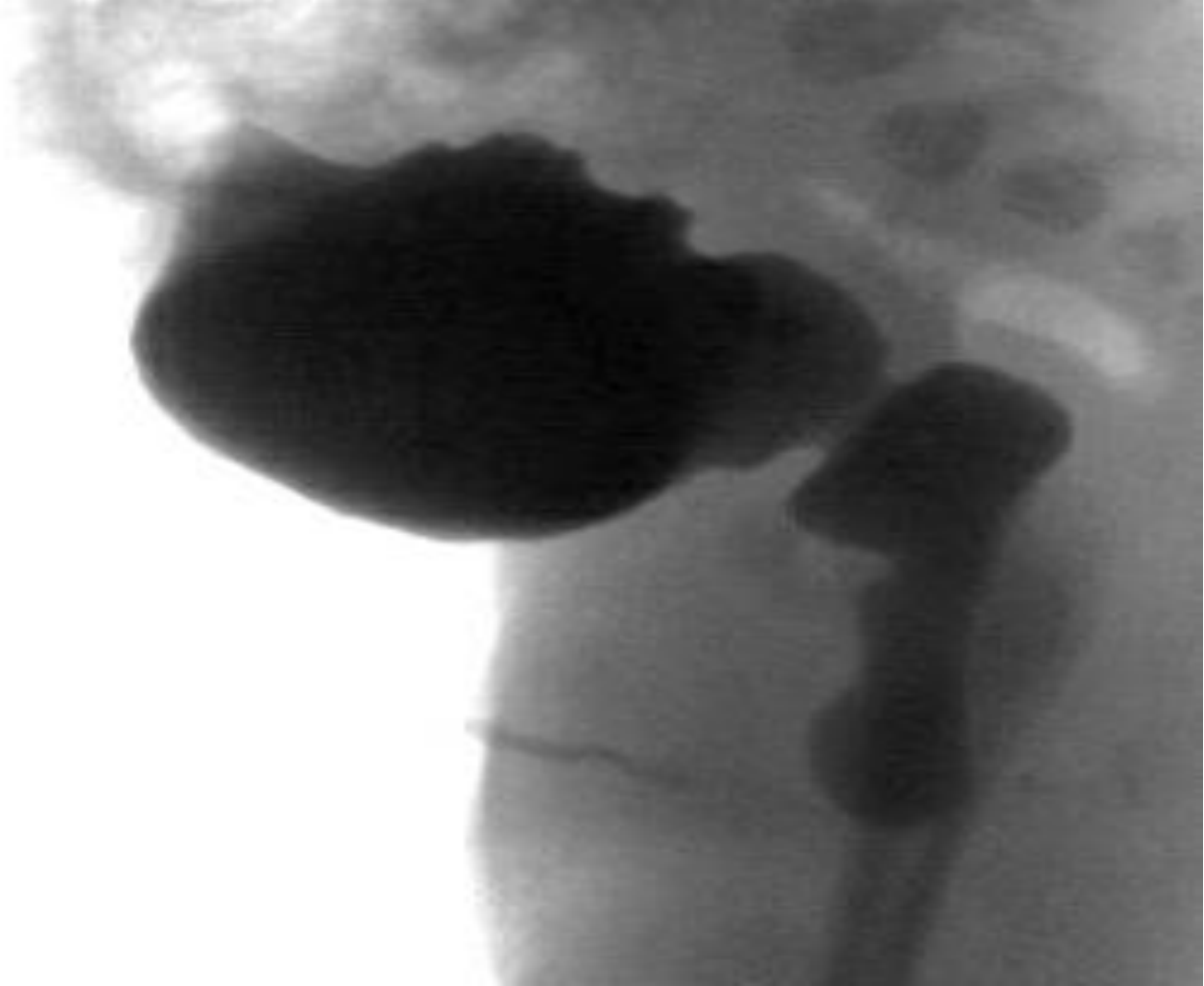
Age

19 weeks

40 weeks

3 days

6+ days



Case 2 – Postnatal Course



Age	• VCUG – Dilated proximal through bulbar urethra  A grayscale VCUG (Voiding Cystourethrogram) image showing a dilated proximal urethra. A red arrow points to the dilated area.
19 weeks	
40 weeks	
3 days	
6+ days	

Case 2 – Postnatal Course



Age		
19 weeks	• VCUG – Dilated proximal through bulbar urethra	 A grayscale VCUG (Voiding Cystourethrogram) image. It shows a large, dark, rounded structure representing the bladder. Below it, a dark, elongated structure represents the ureter. A red arrow points to the bulbar urethra, which appears dilated.
40 weeks	• Spine US – Negative	
3 days		
6+ days		

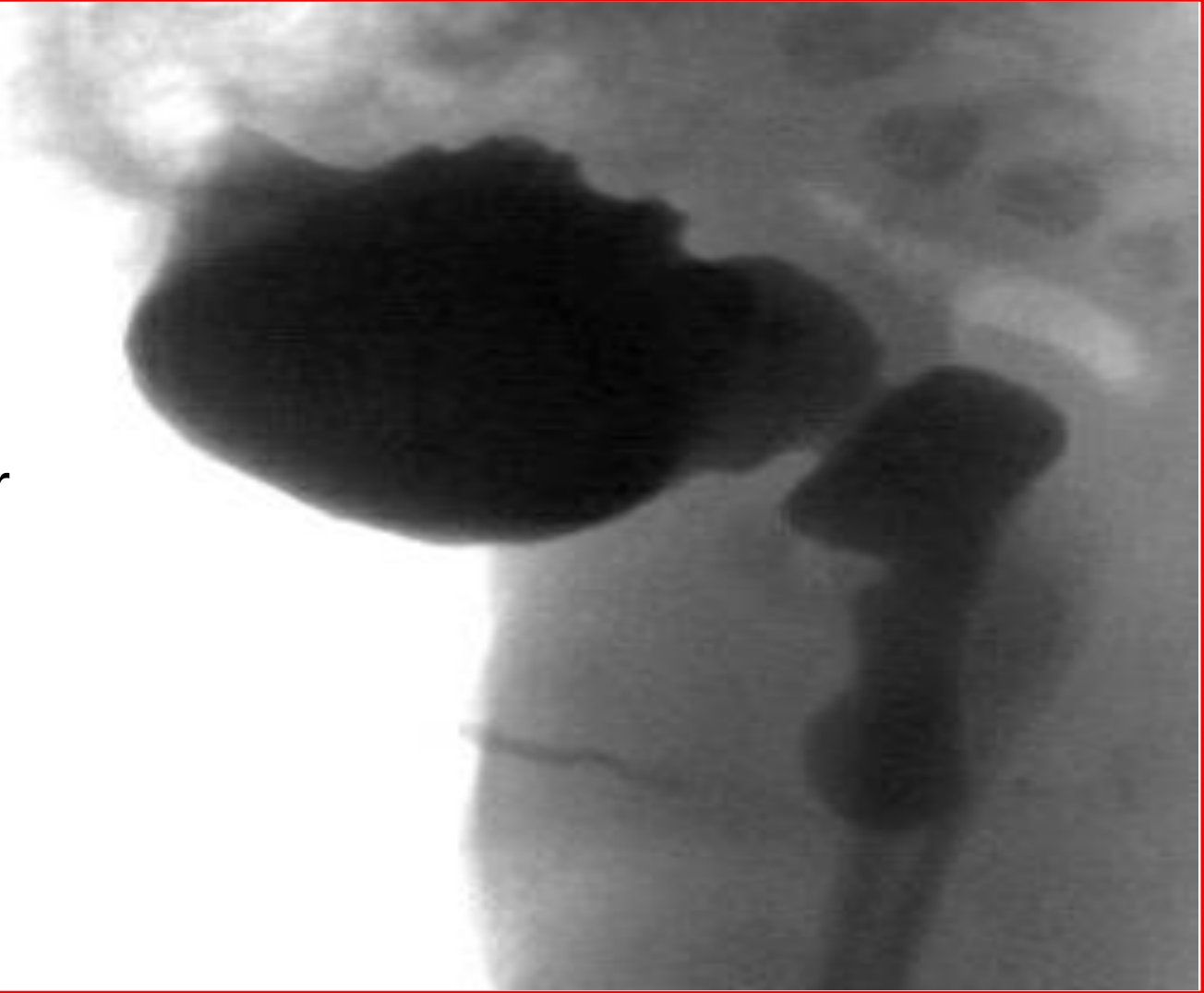
Case 2 – Postnatal Course



Age	Cystoscopy – Absence of valves – Dilated posterior urethra – Trabeculated bladder – Circumferentially thickened sphincter	
19 weeks		
40 weeks		
3 days		
6+ days		

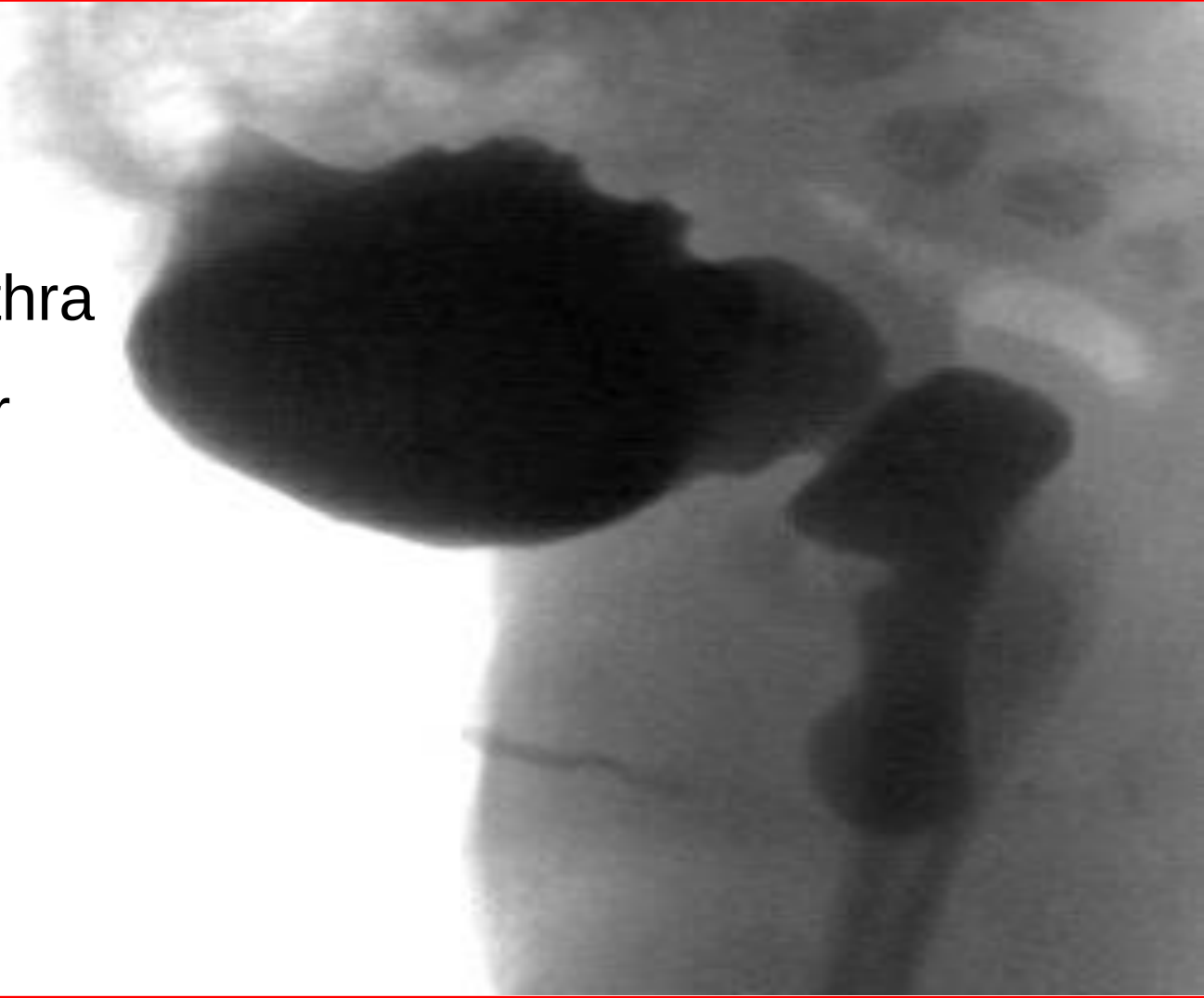
Case 2 – Postnatal Course



Age	• Cystoscopy – Absence of valves – Dilated posterior urethra – Trabeculated bladder – Thickened sphincter • Vesicostomy 
19 weeks	
40 weeks	
3 days	
6+ days	

Case 2 – Postnatal Course



Age	• Cystoscopy – Absence of valves – Dilated posterior urethra – Trabeculated bladder – Thickened sphincter • Vesicostomy • Renal impairment • Recurrent UTIs	 A grayscale ultrasound image showing a large, dark, anechoic area, likely representing a dilated bladder or a large cyst. The surrounding tissue is lighter and more echogenic.
19 weeks		
40 weeks		
3 days		
6+ days		

Functional LUTO



- **Congenital sphincteric dysfunction LUTO poorly described in literature**
- **Limited adult reports of retention from sphincteric hypertonicity**

Conclusions



- **Sphincteric LUTO:**
 - No anatomic obstruction
 - Sonographic findings mimic PUV in-utero
 - Morbid sequelae – recurrent UTIs, CKD

Thank You

