3 boys

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Three Boys

Persistent

Odd

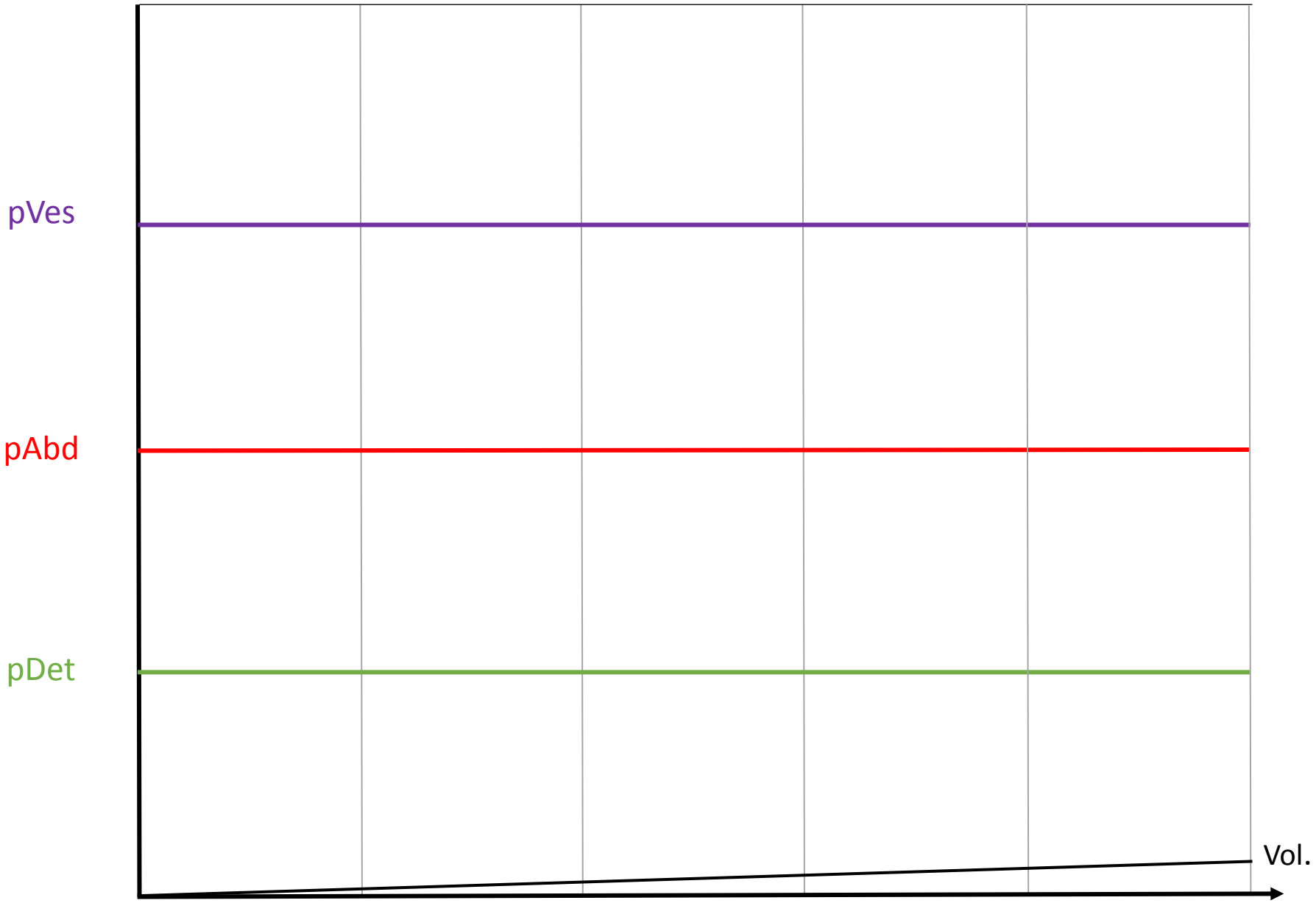
Bothersome

“I know it`s not a life-threatening condition,
but it is a horribly awkward one to live with”

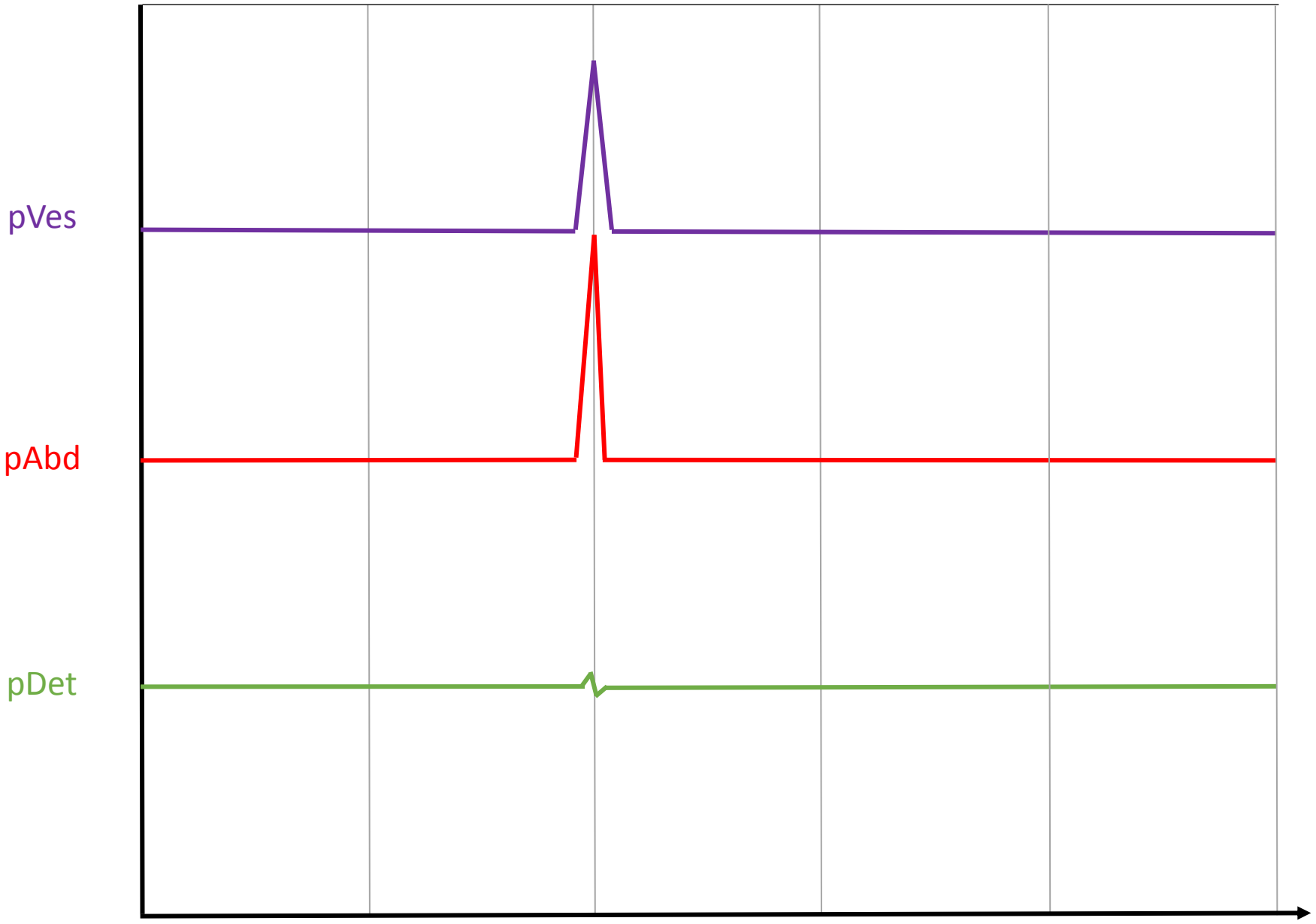
Urodynamics

- Filling pressures
- Void
- EMG
- Cystogram

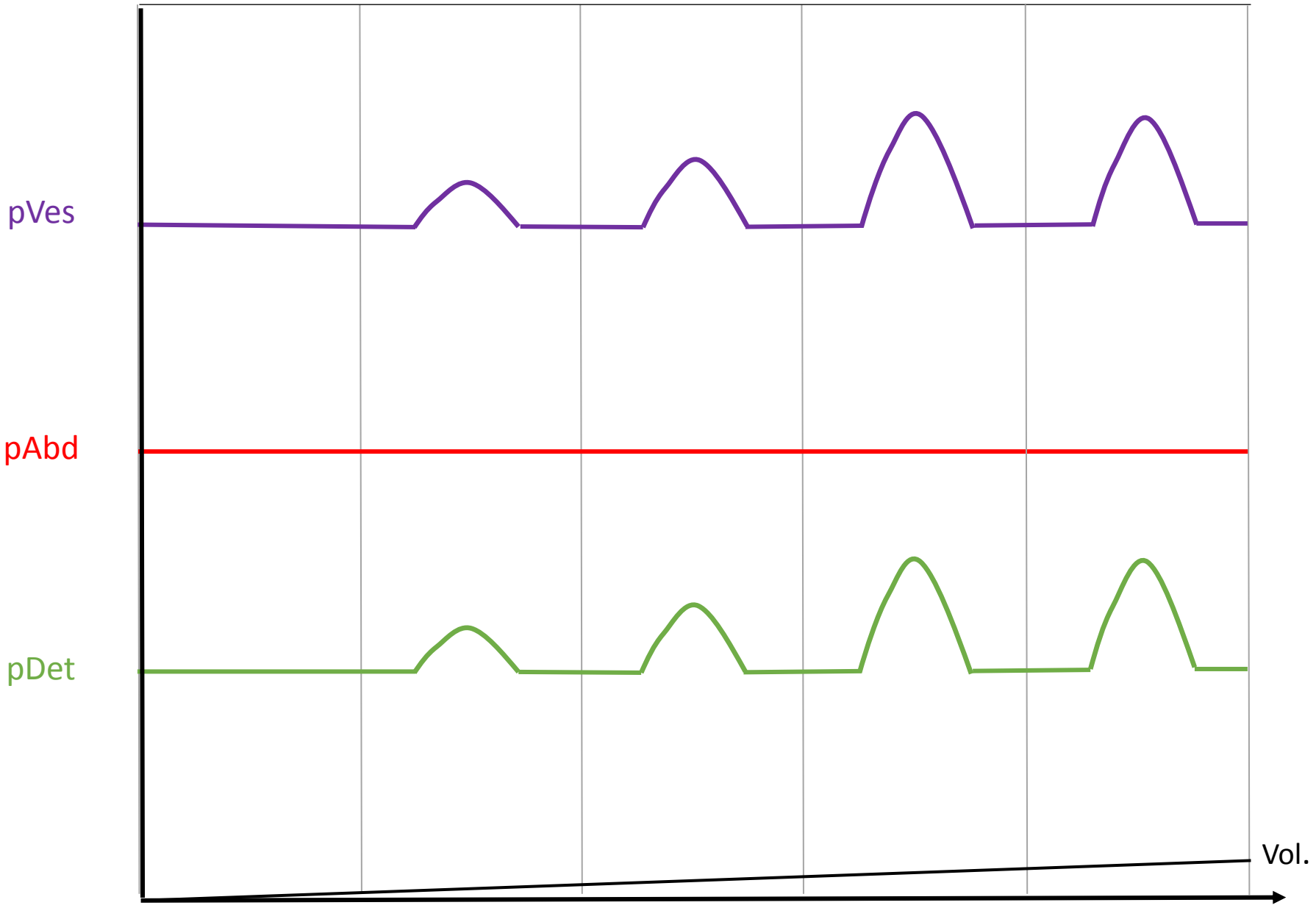
…only if outcome will alter management - ICCS


pVes
pAbd
pDet
Vol.

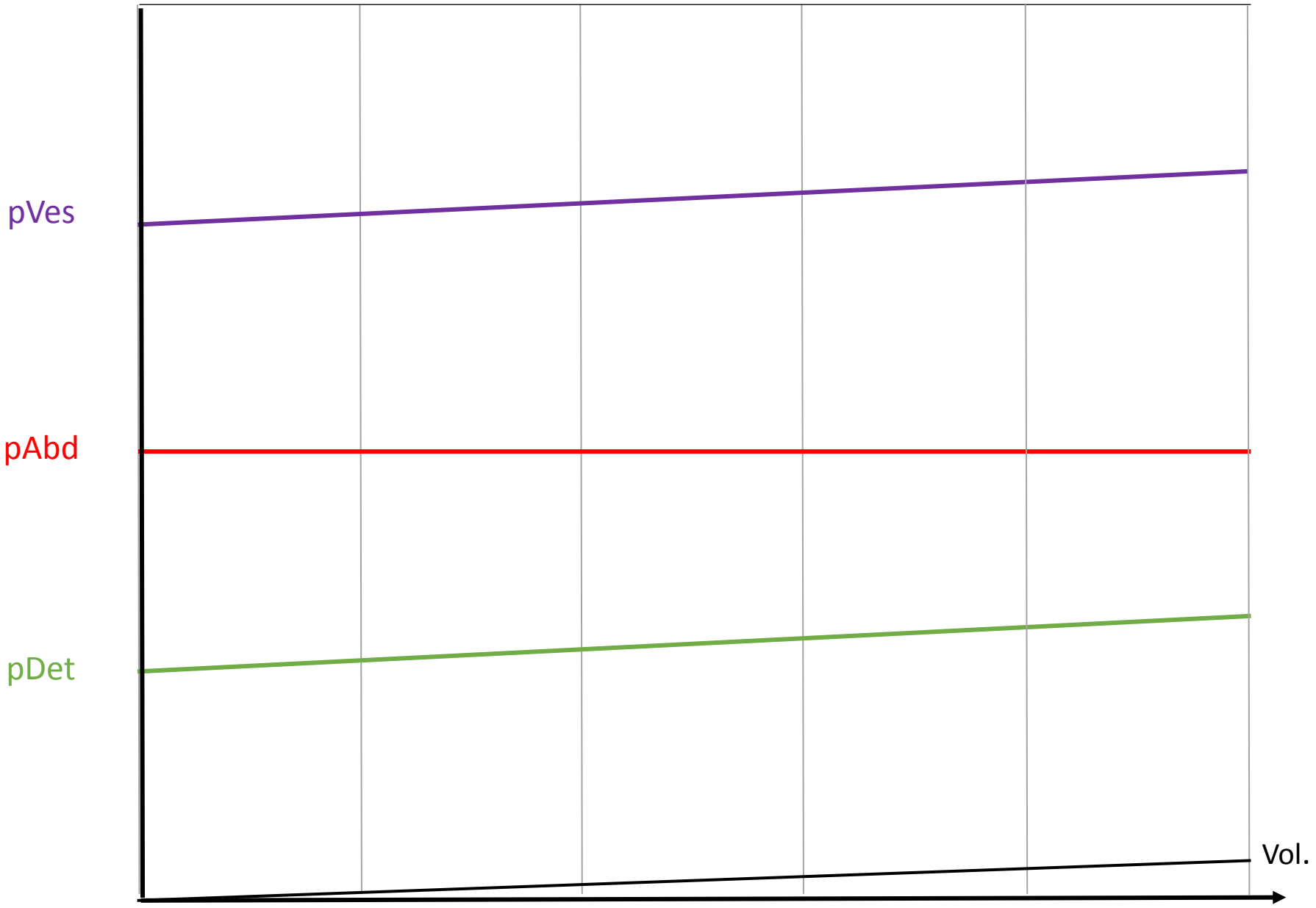
C



Detrusor Overactivity

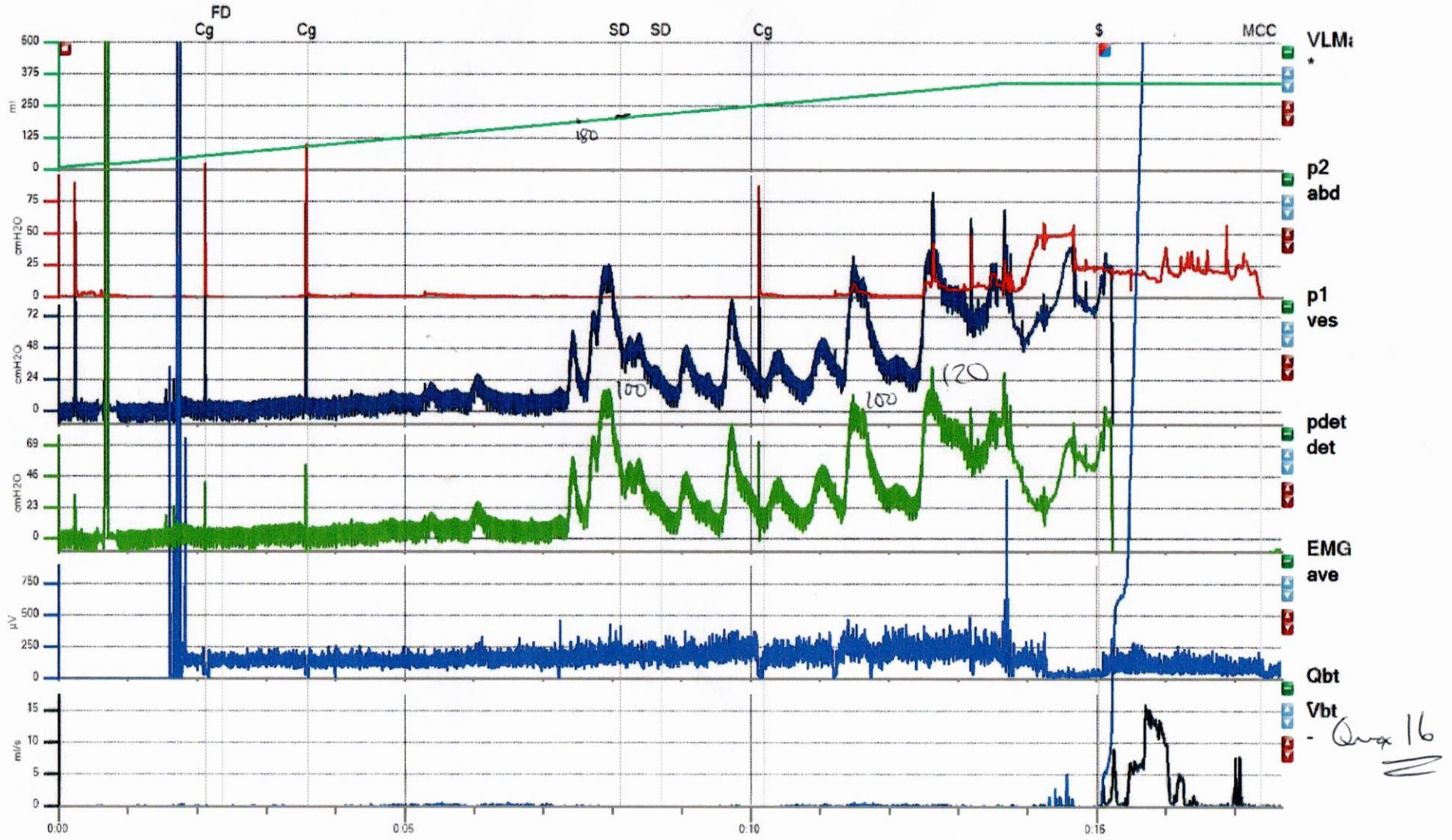


Impaired Compliance



Case 1: RA, 16yr

- Night time wetting, longstanding
- Non-monosymptomatic - urgency
- Therapy resistant (alarm, oxybutynin, M/R, tolterodine, desmomelts, combination, >cBNF reference range, solifenacin)
- Occasional dry night, first voided volume = 400ml
- NIBA: voided volumes 200ml, no post-void residuals



Hostile Detrusor Overactivity

Impaired compliance, capacity OK

Outcome and Learning

- Botulinum toxin A
- Slight improvement – mirabegron (wet 3-4 night / week)
- MRI spine

Learning:

Already know:

Enuresis triad of nocturia, night-time DO, increased arousal threshold

Awareness of outlying patterns

Up to 50% not truly monosymptomatic

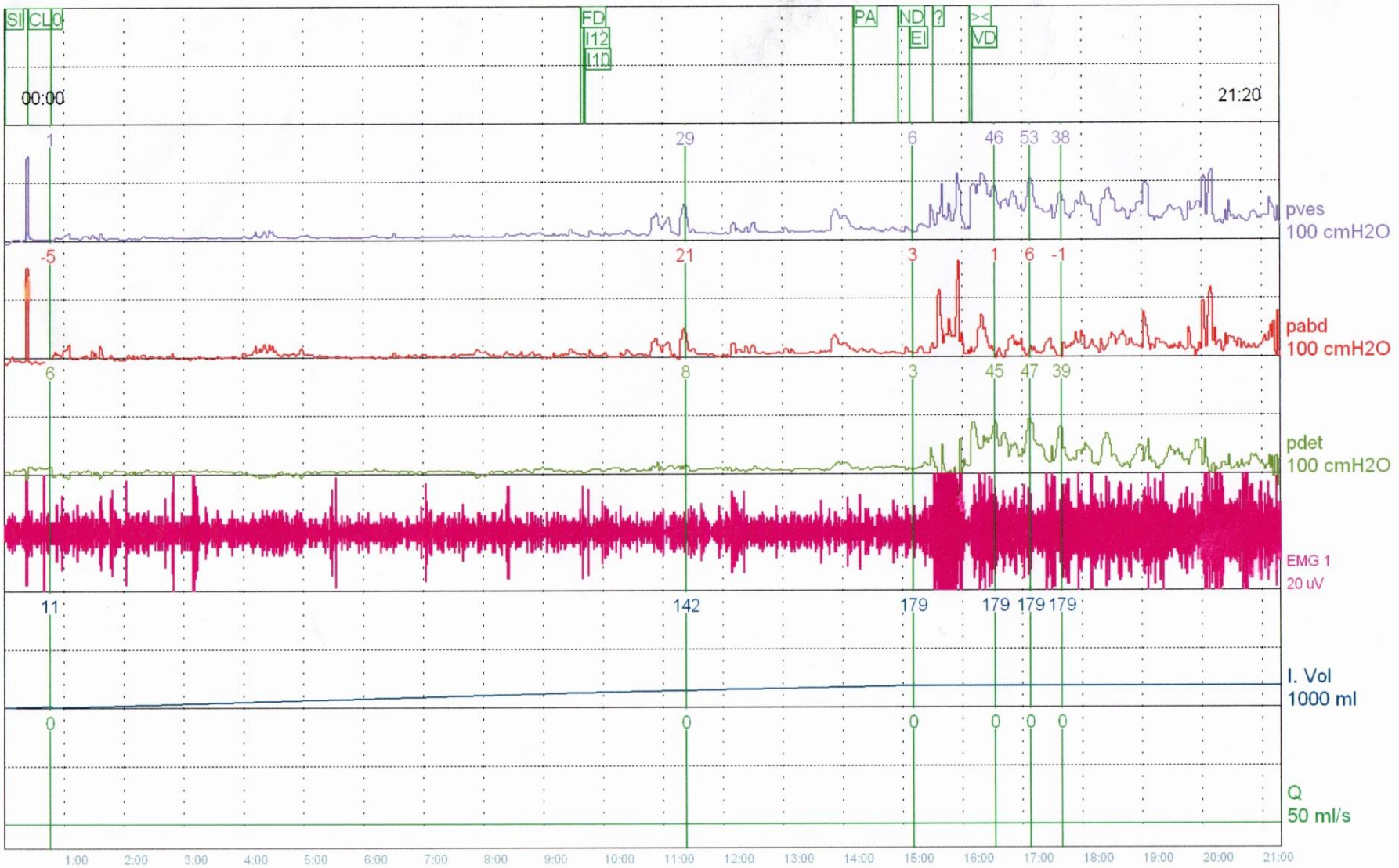
But:

May have treatable abnormality on urodynamics

Previous "don`t worry – you`ll grow out of it" is NOT appropriate advice

Case 2: AF, 13yr

- Acute onset D+N wetting – “complete loss of control” – no trigger
- Poor stream, < voided volume
- No sensation of full bladder; suprapubic pain
- Previous history voiding postponement
- Bowels: full control: normal MRI spine
- NIBA: small voids; interrupted stream +
- Debilitating; pull-ups



Fill pressures normal

EMG very active during void

Voided volume small

Outcome and Learning

- Biofeedback
- 6 months, return of sensation of capacity
- Larger voided volumes, better uroflow
- 1 year later, dry at night, occasional pain, back to x3 void per day

Learning:

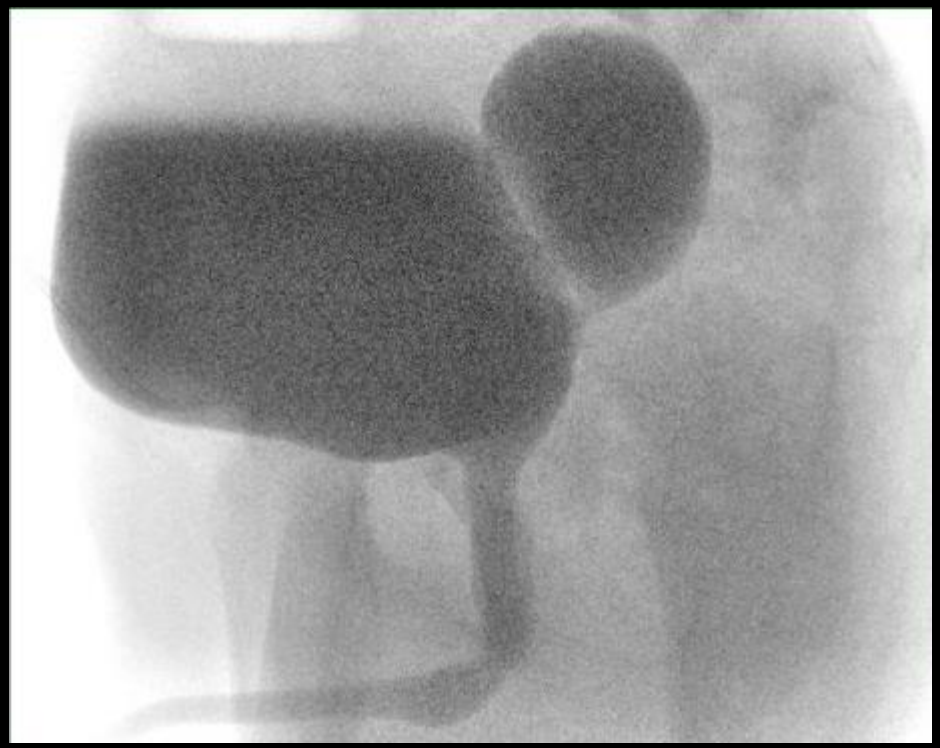
- Odd / acute presentation?
- Should I have postponed / not done urodynamics?

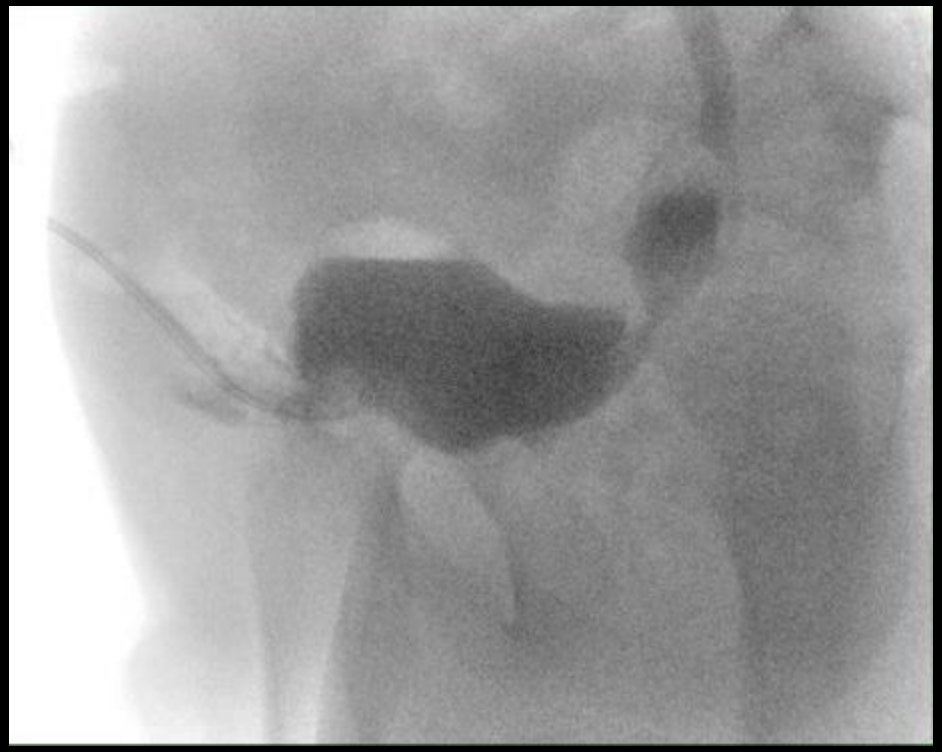
Case 3: SG

- Antenatal PUV – ablated elsewhere
- Left high grade VUR - poorly functioning kidney
- Normal GFR
- Wetting - small volume, D+N (since potty training)
- Annoyance + + + (parental)
- Needs reminding to void, no urge symptoms
- NIBA: significant and consistent post-void residuals 100ml (normal cystoscopy)

Case SG

- Urodynamics locally showed normal filling pressures
- Good void, normal capacity, no residual valves, good bladder
- Bladder emptied fully
- But..



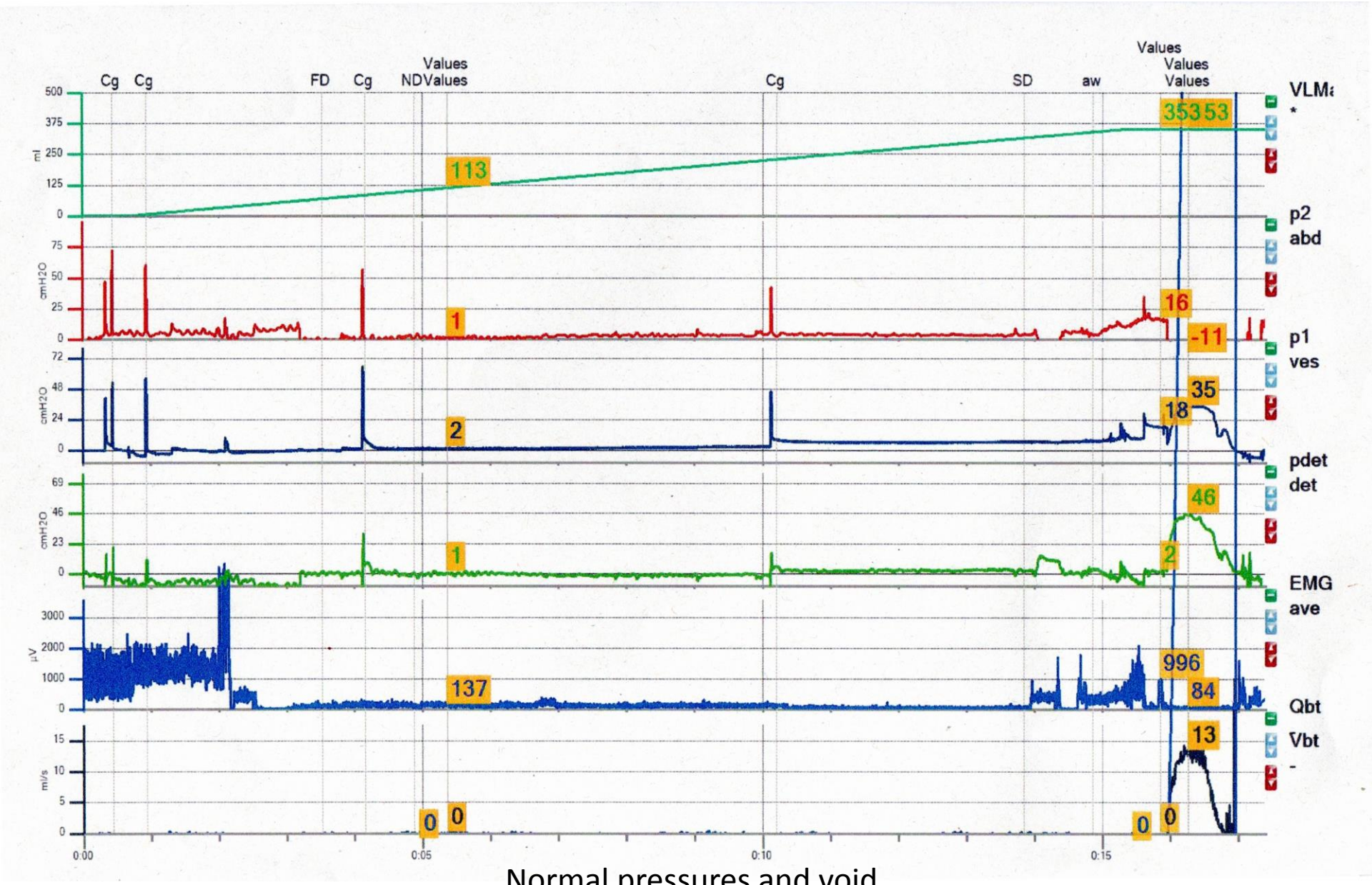


SG

- Bladder diverticulum
- Fills whilst voiding (easily missed); bladder refilling gave apparent residuals
- Left nephroureterectomy and excision of bladder diverticulum

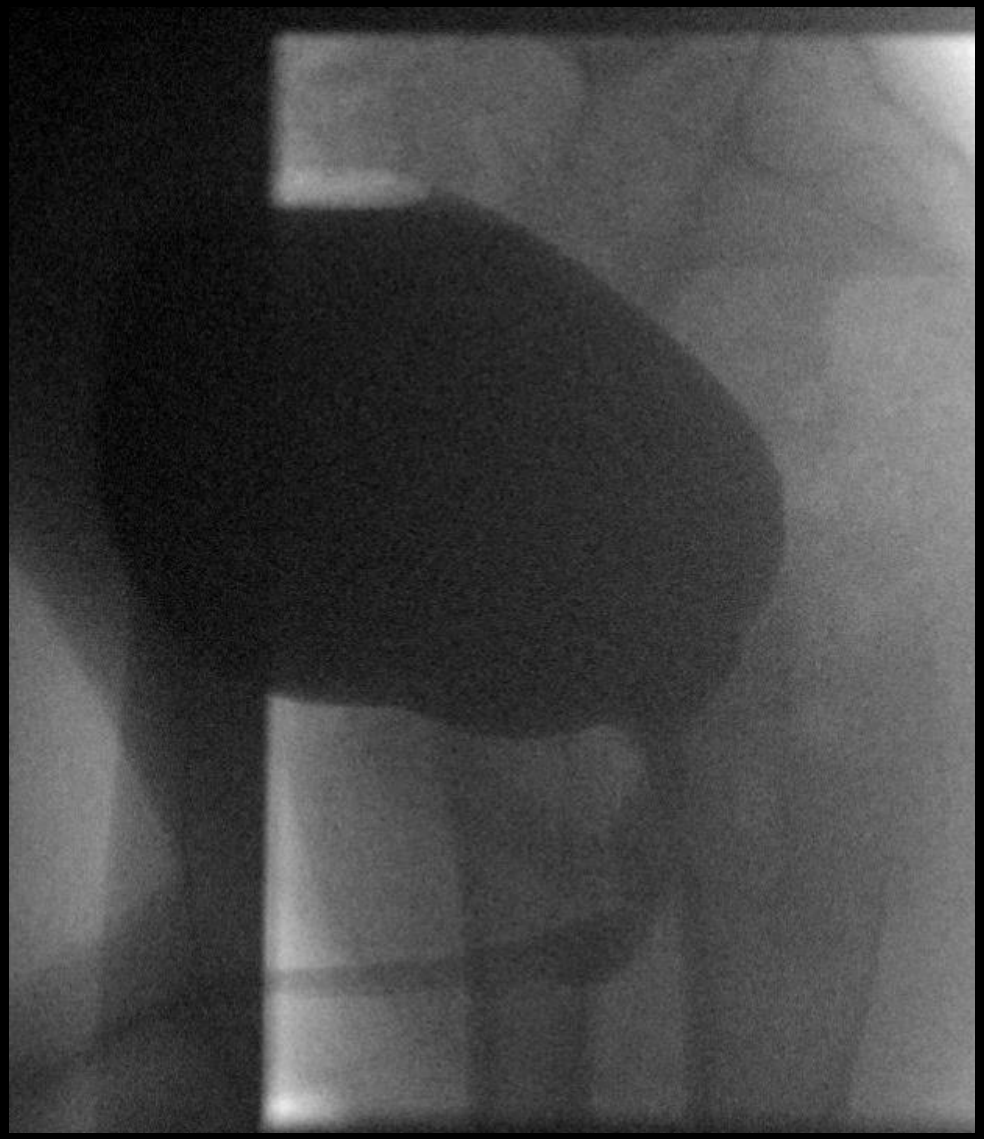
Moved to Nottingham

- Now 10 years old: no change
- Family difficult to reassure
- Repeat urodynamics due to frustrating wetting



Normal pressures and void

No diverticulum



Outcome and Learning

- Child improving
- Reassurance went a long way

Learning:

- Wetting in PUV - “the valves bladder”
- Importance of imaging
- Anatomical factors and post–void residual

ICCS Guidelines

Case 1: Non-monosymptomatic night time wetting

Urodynamics not suggested in children (do uroflow /EMG). In adults – NSAIDs (Pg synthesis inhibitors), Pg receptor antagonists reduce nocturia

Case 2: Dysfunctional voiding

Urodynamics "controversial" - lack of usefulness, unless with VUR. Talk openly, look for comorbid behavioural disorders (20-40%), urotherapy, counselling, CBT, biofeedback, centrally active medication, Botulinum toxin

Case 3: PUV: small volume daytime wetting:

80% demonstrate bladder dysfunction on urodynamics- recommended to determine further medical / surgical management

Evaluation and treatment of nonmonosymptomatic nocturnal enuresis: A standardization document from the International Children`s Continence Society. I Franco, A von Gontard, M De Gennaro. J Ped Urol (2013); 9: 234-43

Urodynamic Testing in Children: Indications, Technique, Interpretation and Significance. BA Drzewiecki, SB Bauer. The Journal of Urology: 2011; 186:1190-97

Summary of learning

1. What to look for in urodynamics
2. Impact of wetting symptoms on child and family – they want answers
3. The “residual”: extra information gathered by imaging
4. ICCS guidelines, who to discuss / refer
5. Do we miss comorbidities?