

# IS THE LATERAL PROJECTION SUPERIOR TO ANTERO-POSTERIOR FOR VIDEO - URODYNAMICS IN CHILDREN?

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## INTRODUCTION

International Continence Society Guidelines (ICS) on the treatment of urinary incontinence in children, regarding cystography state that in "incontinent children the lateral projection during voiding is the most important part of the study". Evidence for this guidance is sparse<sup>1,2</sup>

## AIM

To ascertain the frequency of pathology identified on the lateral projection that may be missed on an antero-posterior (AP) projection "during video-urodynamic (VUD) studies.

## MATERIALS AND METHODS

- Retrospective analysis of all videourodynamic (VUD) studies performed from June 2015 to January 2017, using ICS guidelines<sup>3</sup>
- **Inclusion:** Newborn to 16 years of age who had undergone VUD studies. **Exclusion:** Any VUD studies performed with no fluoroscopic images obtained
- 2 groups: AP or Lateral
- Images were reported by one of three consultant paediatric radiologists. One paediatric urology trainee subsequently reviewed each study

## RESULTS

- Ninety urodynamic studies (48 male) met the inclusion criteria. Fifty-seven studies were in the lateral group.
- In the lateral group 17/58 (29%) studies revealed a clinically significant pathology that would be difficult to identify on an AP projection. 9/58 (14%) identified vesico-ureteric reflux (VUR) but imaging failed to identify the laterality.
- In the AP group 10/33 (30%) demonstrated unilateral vesico-ureteric reflux. 3/33 (9%) did not display adequate views of the urethra
- Twenty-five (27%) patents were diagnosed with VUR. **Three (12%) were subsequently treated with a STING procedure.**

Fig 1: Vaginal reflux: AP 0 Lateral 5



Fig 2:  
Utricle: AP 0 Lateral 2  
Syringocoele: AP 0 Lateral 1

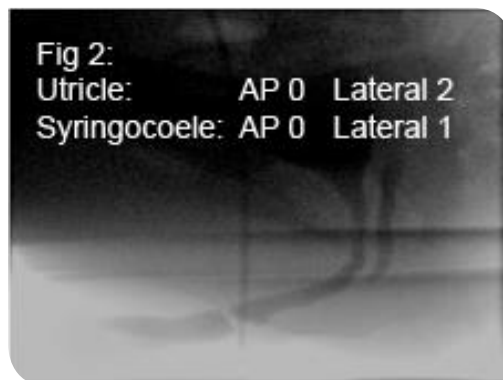


Fig 3: Laterality of unilateral VUR: AP 10/10 Lateral 1/10

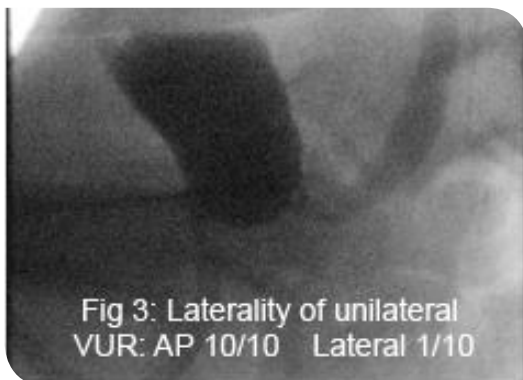
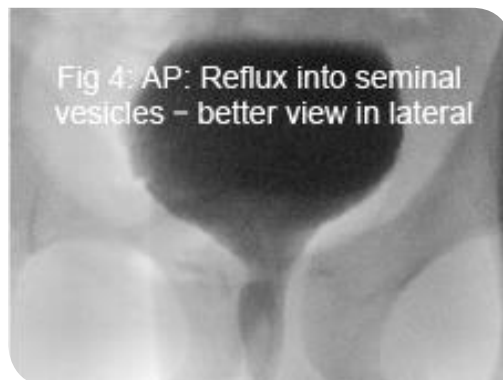


Fig 4: AP: Reflux into seminal vesicles - better view in lateral



## LIMITATIONS

- Retrospective study
- Unable to perform AP and lateral imaging on each patient.

## CONCLUSIONS

- The lateral projection for fluoroscopy during videourodynamics demonstrates relevant pathology in a third of studies. This pathology may not have been identified on an AP projection
- Laterality of VUR cannot be reliably assessed on the lateral projection.
- A combination of lateral voiding images and AP imaging may be the optimal approach.

## References

1. Marks BK, Goldman HB. Videourodynamics: indications and technique. Urol Clin North Am. 2014 Aug;41(3):383-91
2. MacLachlan LS, Rovner ES. Good urodynamic practice: keys to performing a quality UDS study. Urol Clin North Am. 2014 Aug;41(3):363-73
3. Bauer SB, Nijman RJ et al. International Children's Continence Society standardization report on urodynamic studies of the lower urinary tract in children. NeuroUrol Urodyn. 2015 Sep;34(7):640-7