1090

Tran H[1], Pirpiris A[1], Liu M[2]
1. *Monash Health,* ***2.*** *Monash Health, Knox Private Hospital*

URETHRAL DIVERTICULECTOMIES: THE IMPACT OF MRI

Hypothesis / aims of study

A urethral diverticulum is the result of a chronic infection of the peri-urethral duct that eventually leads to fistulation to the urethra. It occurs in up to 6% of the population, but in up to 40% of women with recurrent urinary tract infections.[1] The urethral diverticulum mostly becomes symptomatic between the ages of 30 and 60 years. Commonly women do not present with the classic trial of the 3 'Ds' of dribbling, dyspareunia and dysuria, they more commonly present with recurrent urinary tract infections that pose a diagnostic dilemma not only for the general practitioner but also for the urologist. This often results in multiple investigations, failed attempts at therapy and a subsequent delay of diagnosis.[2]

MRI imaging has become far more available and accessible to patients. A pelvic MRI can clearly delineate the anatomy and also the planes, in far more detail than an ultrasound or CT.[3] Our hypothesis is that an MRI of the pelvis is a non-invasive and accurate method of diagnosing a urethral diverticulum. It can assist not only in the diagnosis but also in surgical planning. Previously performed investigations including voiding cysto-urethrogram and double balloon testing are no longer necessary.

Study design, materials and methods

This is a retrospective analysis of all patients who had a urethral diverticulectomy at a public hospital in Melbourne. The study spans a seven year period since 2010 and it has been approved by the local ethics committee. Medical records provided a list of patient details and data was collated on demographics, urinary symptoms, imaging modalities, the operative technique and recovery. Statistical analysis was performed using SPSS, t-test. Comparisons were made using the Wilcoxon test. P value <0.05 was considered significant.

Results

A total of 17 women were included in this study. Ten patients had their diverticulectomies performed in the public hospital, whereas 7 were performed in the private setting. All cases were performed by a single surgeon. Ten patients presented with a painful anterior vaginal lump and 7 with recurrent Urinary Tract Infections. The mean time from onset of symptoms to diagnosis was 3 years. A 2 Tesla MRI was used to diagnose the diverticulum in 16 patients, with 1 being diagnosed at the time of Examination Under Anaesthesia. For these patients, only one had a voiding cysto-urethrogram with a suspicion of urethral diverticulum, which then was then subsequently confirmed on MRI. Otherwise, no ultrasound or balloon tests were performed in this population. On the contrary, the gynaecologists over this seven year period used the voiding cystourethrogram and ultrasound of perineum in preference to the MRI. All these 17 women then proceed to a urethral diverticulectomy. All women had their diverticulum excised, 7 also had a Martius flap placed. The mean length of hospital stay was 2 days and the mean post-operative follow up time was 12 months. No patients developed a recurrence on their subsequent follow up.

Interpretation of results

MRI pelvis has superseded the double balloon test or voiding cysto-urethrogram in the diagnosis of a urethral diverticulum. The MRI pelvis is a non-invasive and reliable imaging modality to diagnose a urethral diverticulum. It foregoes the unnecessary, invasive and often equivocal testing with the double balloon or voiding cystourethrogram. After investigation of recurrent UTIs that are not improving with conventional measures, an MRI should be considered the next step for the delineation of other anatomical causes including urethral diverticulum.

Concluding message

In the female with recurrent urinary tract infections, if the standard investigations including ultrasound and cystoscopy fail to identify a cause and a course of long term prophylactic antibiotics has not resulted in the resolution of the infections, then an MRI pelvis should be considered to exclude a urethral diverticulum.

References

1. Stewart M, Bretland PM, Stidolph NE. Urethral diverticula in the adult female. British Journal of Urology 1981; 53: 353-9
2. Greenwell TJ, Spilotros M. Urethral diverticula in women. Nature Reviews Urology 2015; 12: 671–80
3. Singla P, Long SS, Long CM, Genadry RR, Macura KJ. Imaging of the female urethral diverticulum. Clinical Radiology 2013; 68(7): e418-25

Disclosures

Funding: NONE **Clinical Trial:** No **Subjects:** HUMAN **Ethics Committee:** Monash Health Clinical Ethics Committee **Helsinki:** Yes **Informed Consent:** Yes