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URETHRAL DIVERTICULAE IN WOMEN: DISCREPANCIES BETWEEN MRI AND SURGICAL FINDINGS

Hypothesis / aims of study
MRI is considered the gold standard for the diagnosis of urethral diverticulum (UD) with near 100% accuracy. Our aim was to describe instances that contradict this paradigm and to identify reasons for the discrepancies

Study design, materials and methods
A database was searched for all women who had surgery for UD from 1998 - 2008. MRI's were reviewed by a panel of all the authors. Selective patients underwent preoperative MRI . Multiplanar, multisequence imaging included T1 and T2-weighted sequences both with and without fat saturation and pre and post intravenous gadolinium contrast administration. The images were stored as DICOM images and reviewed on a GE PACS workstation by a radiologist with 7 years of experience in interpreting pelvic MRI exams. For each patient all but one of the authors (the surgeon) was blinded to surgical findings. The panel came to a consensus about the presence or absence of UD or cancer, and the position and anatomy of the UD. Discrepancies in MRI and surgical findings were classified as failure to detect UD, errors in anatomy or position of the UD and failure to detect cancer.

Results
76 patients were identified of whom 40 underwent MRI within 1 month of surgery. Of these, 9 (22.5%) were found to have a discrepancy between MRI and surgical findings. In 5, MRI failed to diagnose the UD. In 4 of these, the UD was not seen at all (2 were 5 mm in size and 2 were 2 cm in size). 1 was misdiagnosed as a Bartholin's cyst due to its unusual distal and lateral location. In these 5 patients preoperative diagnosis was made by palpation of the UD. In 2 patients with cancer of the UD (1 squamous, 1 adenocarcinoma) there were no suspicious MRI findings. In 2 patients there was a major discrepancy in the position / anatomy of the UD that made intraoperative decision-making difficult.

Interpretation of results
In this series, MRI had a 22.5% diagnostic error rate, the most serious of which was failure to detect cancer. This was probably due to the fact that the cancers were in the wall of the UD and did not project into the lumen, nor did they enhance with gadolinium. Other potential reasons for discrepancies include size too small for MRI sensitivity and loss of fluid from UD. High accuracy rates of MRI's in other series may be due, in part, to the fact that in the absence of radiologic confirmation, especially for small diverticulae, some surgeons may choose not to perform surgery at all.

Concluding message
MRI is very useful in the evaluation of UD but we believe its diagnostic accuracy is not as high as reported.

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Was this study approved by an ethics committee?	**Yes**
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Was the Declaration of Helsinki followed?	**Yes**
Was informed consent obtained from the patients?	**No**