functional dyspepsia, and chronic fatigue. They postulated that the apparent association between OAB and giardiasis can be ascribed to comorbid functional disorders because the prevalence of OAB among exposed versus control participants without comorbid disorders was similar (12.4% vs 10.9%, \( p = 0.51 \)), and the risk of OAB was more than two-fold increased with any functional comorbid disorder.

**Experts’ comments:**
Although most management strategies for OAB target the bladder, these authors suggested instead that the observed overlap between OAB and other functional disorders might arise either because of cross-sensitization of common neural pathways between gut and bladder or because of a tendency to overinterpret somatic sensations. We have compelling evidence of an association between affective disorders and lower urinary tract symptoms [1], and this study provides a further reminder of the importance of a holistic approach to OAB.

A second line for future investigation may explore the relationship between *Giardia* infection and the urinary microbiome. *Giardia* infection causes a profound transient shift in the fecal flora, and some changes may persist beyond resolution of clinical infection [2]. The fecal and urinary microbiota are intimately linked [3], and recent research has demonstrated differences in the urinary microbiota of women with and without OAB, using both 16S ribosomal RNA sequencing and expanded quantitative urine culture techniques [4]. In a murine model of *Giardia*, the bacterial strains that penetrated the gut mucosa in the postinfective phase included *Bacillus, Lactobacillus, Staphylococcus*, and *Phenylobacterium* [2]. Two of these four bacteria, *Staphylococcus* and *Lactobacillus gasseri*, were identified more frequently in a US study of the urinary microbiome of women with OAB [4]. It is certainly possible that the apparent epidemiologic association between *Giardia* exposure and OAB is mediated only by relationships with other functional disorders, but it is also possible that *Giardia* exposure has a persistent impact on the fecal and urinary microbiota, even 6 yr following exposure. This study provides further support for chronic bacterial infection as one precipitant of OAB, and further research should explore this possibility and its implications for treatment.

**Conflicts of interest:** The authors have nothing to disclose.

**References**


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**Re: Risk of Damage to the Somatic Innervation of the Penis during the AdVanceTM Procedure: An Anatomical Study**

Hogewoning CR, Elzevier HW, Pelger RC, Bekker MD, DeRuiter MC


**Expert’s summary:**
The dorsal nerve of the penis (DNP) is the final branch of the pudendal nerve and is considered the main somatic afferent nerve of the penis, responsible for both erection and ejaculation. This study is based on the pelvic dissection of six adult male cadavers and describes the anatomic relation between the AdVance male sling and penile nerves. The procedures were conducted by the same urologist. Damage to the DNP caused by the AdVance male sling procedure has not been noted previously or described in the current literature. The mean distance of the sling to the DNP was 4.1 mm and found situated directly next to the DNP (distance: 0 mm) in 4 of the 12 hemipelves. No signs of direct nerve damage caused by the passage of either trocar or sling was found in any of the six pelves. In two pelves, the tape was situated significantly further away from the DNP than in the other four pelves. The distance of the sling to the obturator neurovascular bundle was \( \geq 30 \) mm in all six pelves.

**Expert’s comments:**
Male cadavers have the prostate still in situ, and the AdVance sling is implanted and indicated mainly in postprostatectomy incontinence. The anatomic relation between the sling and structures such nerves or vessels would be influenced by the presence or absence of the prostate. Furthermore, the preparation of the cadavers (fresh cadavers or conserved) could be another bias in the conclusions of the above study. Another limitation of the study is that the relations of anatomic structures are different in cadavers and in vivo. In the study, the position of the cadavers was not mentioned. The correct lithotomy position of patients is very important for the exact passage of the needles into the pubic branches and the perfect position of the sling. The branches of the pudendal nerves run in the “shadow” of the inferior pubic ramus. This avoids injury to these nerves during the outside-in placement of the needle trocars. This was the reason why an outside-in approach was preferred above an inside-out approach of needle trocar placement. Gozzi and Rehder demonstrated a
safety distance of the sling to the DNPs of 5 mm [1]. In clinical experience, this was considered safe, especially considering female transobturator slings. In the clinical setting, in >5000 Advance and AdvanceXP procedures performed by the inventors, no patients reported long-term symptoms of damage of the DNP. Only one patient described transient penile numbness for 4 mo, at the same time with a postoperative hematoma after Advance sling placement.

Conflicts of interest: The author is the ideator and coinventor of the Advance male sling, holds intellectual property and has received royalties from Advance, has participated in workshops and studies and is a consultant for AMS, and has participated in other projects for AMS and Storz.

Reference


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Re: X-Linked TEX11 Mutations, Meiotic Arrest, and Azoospermia in Infertile Men
Yatsenko AN, Georgiadis AP, Ropke A, et al

Experts' summary
Yatsenko et al identified TEX11 as a new genetic marker for spermatogenic arrest in men with idiopathic infertility. Using a technique called array comparative genomic hybridization (aCGH), which can detect small duplications or deletions in the genome, the authors found a deletion in a man with nonobstructive azoospermia (NOA) in a critical region of TEX11. Men with NOA have no sperm in their ejaculate due to testicular failure. The protein TEX11 is expressed in the testis and is important for repairing DNA double-strand breaks during meiotic division. Following the identification of TEX11 as a potentially important gene in NOA development, Yatsenko and colleagues screened a cohort of 49 men of European descent with a diagnosis of NOA by sequencing the coding regions of TEX11. In this cohort, the authors identified an additional patient with a deletion in an important region of TEX11, as well as mutations that likely cause aberrant protein function in two other men. To replicate these findings, the authors separately screened a cohort of 240 German men for TEX11 mutations and identified four men with NOA who had TEX11 mutations. In total, 15% of men with meiotic arrest and 1% of men with mixed testicular atrophy had TEX11 mutations. There were no mutations in men who had a complete absence of germ cells (ie, Sertoli cell–only histology).

Experts' comments:
The use of precision medicine to identify specific genes that affect men with infertility remains a challenge. In fact, only 20% of men with severe testicular failure and NOA have a known underlying genetic cause of infertility such as Klinefelter syndrome (47 XXY) or microdeletions in the Y chromosome [1]. The authors identified and validated TEX11 as an important gene for sperm maturation. Mutations in TEX11 can be utilized as a marker for testicular histology without a diagnostic biopsy. Two seminal plasma proteins (ECM1 and TEX101) can be used to distinguish between obstructive azoospermia and NOA with high sensitivity and specificity (100% and 73%) [2]. Identification of specific molecular markers for spermatogenesis can reduce the need for routine diagnostic biopsies in men with infertility.

TEX11 is critical for DNA fidelity. Knockout mouse models of TEX11 have spermatogenic arrest due to an inability to repair double-strand DNA breaks [3]. While a successful pregnancy is possible for men with TEX11 mutations after testis biopsy followed by intracytoplasmic sperm injection, we must be aware that mutations in genes important for DNA repair can lead to health consequences such as birth defects in offspring [4]. We must increase our understanding of the underlying cause of male infertility to counsel couples on their choice of proceeding with assisted reproduction using the man's sperm or donor sperm, or to consider other options such as adoption.

Conflicts of interest: The authors have nothing to disclose.

References


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