Editorial Comment

This study may be intriguing for the urologist. From a total of 38 patients reported as having organ-confined cancer who developed biochemical recurrence defined as a single prostate-specific antigen level of 0.2 ng/mL or greater, pathology re-review showed that only 11 cases were true organ-confined. How does it happen?

Pathologists use strict criteria for diagnosis however there are many interpretative dilemmas. Experience and specialization are important considerations. One example is the Gleason grading reproducibility that can be categorized as intraobserver or interobserver. Exact interobserver agreement may vary from 36% to 81%; interobserver agreement + 1 score unit from 69% to 86%; and, the kappa values from 0.13 to 0.78 (slight to substantial agreement) (1).

Another example refers to criteria for extraprostatic extension. In the posterior, posterolateral and lateral aspects of the prostate gland, tumor admixed with periprostatic fat is the most recognized manifestation of extraprostatic extension. However, tumor in fat is not synonymous with extraprostatic extension and pathologists should be aware that intraprostatic adipocytes will be found in up to 5% of radical specimens. Another more common problem relates to the desmoplastic reaction that sometimes occurs in a tumor invading the adipose tissue replacing it. In this circumstance is difficult to evaluate extraprostatic extension. A bulging contour beyond the normal contour of the gland indicates extraprostatic extension (2). However, this finding may also be interpretative.

References

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BASIC AND TRANSLATIONAL UROLOGY

Urodynamic and immunohistochemical evaluation of intravesical botulinum toxin A delivery using liposomes

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Purpose: Botulinum toxin A (Allergan, Irvine, California) is a high molecular weight neurotoxin used to treat hypersensitive bladder by direct injection to pass the urothelial barrier. We investigated the feasibility of intravesical botulinum toxin A delivery using liposomes (Lipella Pharmaceuticals, Pittsburgh, Pennsylvania), which

are phospholipid bilayered vesicles, and evaluated the urodynamic and immunohistochemical effect on acetic acid induced bladder hyperactivity in rats.
Materials and Methods: Liposomes (1 ml), botulinum toxin A (20 U/1 ml saline) or botulinum toxin A encapsulated in liposomes (lipotoxin, that is 20 U botulinum toxin A plus 1 ml liposomes) was administered in the bladder and retained for 1 hour on day 1 after baseline cystometrogram. Continuous cystometrogram was performed on day 1 by filling the bladder with saline and on day 8 by filling the bladder with saline, followed by 0.3% acetic acid. The bladder was then harvested. Cystometrogram parameters, histology, SNAP25 and calcitonin gene-related peptide expression were measured by Western blotting or immunostaining.
Results: The intercontraction interval was decreased 57.2% and 56.0% after intravesical acetic acid instillation in liposome and botulinum toxin A pretreated rats, respectively. However, rats that received lipotoxin showed a significantly decreased intercontraction interval response (21.1% decrease) to acetic acid instillation but without compromised voiding function. Also, lipotoxin pretreated rats had a better decrease in the inflammatory reaction and SNAP-25 expression, and increase in calcitonin gene-related peptide immunoreactivity than those in liposome or botulinum toxin A pretreated rats.
Conclusions: Intravesical lipotoxin administration cleaved SNAP-25, inhibited calcitonin gene-related peptide release from afferent nerve terminals and blocked the acetic acid induced hyperactive bladder. These results support liposomes as an efficient vehicle for delivering botulinum toxin A without injection.

Editorial Comment

It has been proved that Botulinum toxin A applied as cystoscopic guided injections into the bladder wall have a therapeutic effect on overactive bladder and interstitial cystitis / painful bladder syndrome. Nevertheless, we know well that bladder injection therapy has some limitations, including drug leakage outside the bladder, hematuria, pain at injection sites and uneven distribution. In this way, the authors have been searching for a simpler and lower risk method to deliver Botulinum toxin A without injection.

We know that it is difficult for Botulinum toxin A to access the submucosal nerve plexus in formal use with saline as a vehicle without direct injection to pass the urothelial barrier. Based on previous experience, the authors speculated that delivery using liposomes, which are phospholipid bilayered vesicles, and evaluated the urodynamic and immunohistochemical effect on acetic acid induced bladder hyperactivity in rats.
Their results show that Botulinum toxin A can be combined with liposomes to be administered as a liquid instillation without cystoscopic injection, with good therapeutic results in rats.

To our knowledge, this is the first report of the promise of liquid instillation of Botulinum toxin A. I strong recommend this paper to all physicians involved in research on neurourology.

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Shock wave induced kidney injury promotes calcium oxalate deposition

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Purpose: Extracorporeal shock wave lithotripsy is the preferred treatment for upper urinary tract renal calculi. However, this treatment is associated with a high rate of recurrent renal calculi. Shock wave therapy can result