

Syringe with Spiral Head Used for Botulinum Toxin A Injection for Treating Lower Urinary Tract Dysfunction

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Botulinum toxin is the most potent biological toxin known to man [1]. The major mechanism of this toxin is to inhibit acetylcholine release from cholinergic nerves. It has been safely and successfully used to treat focal dystonia, muscle spasm and spasticity [2]. The urological community has used botulinum toxin A (BoNT-A) to treat spinal cord injury patients with detrusor sphincter dyssynergia and/or neurogenic detrusor overactivity [3]. BoNT-A injection has been successfully used to treat various neurogenic and non-neurogenic lower urinary tract dysfunctions [4].

More recently, Chuang et al have showed that BoNT-A has exciting and promising results for treating aged men with lower urinary tract symptoms suggestive of benign prostate obstruction (BPO) [5]. Thus, we tried off-label use to treat some poor surgical candidates with BPO. Before surgery each vial of BoNT-A was diluted into 10 mL of normal saline. Patients were placed in the lithotomy position with ample sterilization and draping. Under local or light intravenous anesthesia, the BoNT-A solution was injected directly into the prostate under cystoscopic guidance (Richard Wolf, Knittlingen, Germany). After BoNT-A injection, a 16 Fr Foley indwelling catheter was routinely inserted for one day and was then removed.

The prostate is a more solid and dense organ than the bladder and urethral sphincter, and so we found more resistance in the prostate than in the bladder or sphincter during administration of the BoNT-A solution into the target sites. Using more force caused the syringe to disconnect from the cystoscope during injection in two out of our five preliminary patients. Approximate 2.5 mL solution was lost. To achieve better connection between the syringe and cystoscope, we used a spiral-headed syringe instead of a cone-headed syringe (Terumo, Tokyo, Japan) (Fig. 1). No disconnection occurred when using the spiral-headed syringe in five consecutive patients.

We usually need to rotate spiral-headed syringes clockwise by 720 degrees to connect to the head of the injection needle. This procedure makes it very difficult to separate them from each other during injection, although it is still easy to separate them by rotating the syringe counterclockwise after injection. Cone-headed syringes are only simply connected to the cystoscope. This weak connection is easily



Fig. 1. Syringe with cone head (left) and syringe with spiral head (right).

disrupted when using extra force during injection. In conclusion, according to our preliminary experiences, we suggest that a syringe with a spiral head is a more reliable tool for transurethral injection.

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