

A NEW APPROACH FOR THE MANAGEMENT OF ANATOMICAL INCONTINENCE IN TREATMENT FAILED PATIENTS

Synopsis of Video

Urinary incontinence (UI) is one of the major social and medical problems affecting about 40 million adults of both sexes in the Western World. From diapers to vaginal pessaries, from surgery to bulking injectables or intraurethral plug-like devices are currently being used for the management of anatomical UI. Although some of the surgical techniques are successful in the treatment of stress incontinence, approximately 50% of the patients need re-treatment after 5 to 7 years. Intra-urethral plug-like devices which were introduced during the last years could mechanically block the involuntary leaking in female patients. However, these devices by being positioned in the urethra caused discomfort to the patient and a continuous communication between the bladder and the vulva, resulting in very high rates of ascending infections. For preventing the complications of the intraurethral devices and in order to block the bladder outlet (BO) from within the bladder and open it voluntarily for voiding, a family of completely intra-vesical devices were designed:

- 1- A sphere with some grooves in one of its hemisphere
- 2- A mushroom shaped device
- 3- A sphere with a dimple on one of its hemisphere.

These devices were tried in in-vitro conditions and then in ex-vivo animal bladders. Each device could be inserted easily into the bladder. Then they were activated using a magnetic remote control device and could be retrieved as easily. Although all these 3 devices could occlude the BO completely in all in-vitro experiments, when tried in human, the deficiencies of the first 2 devices were observed: Rotating the grooved sphere for opening and closing the BO with the remote control magnet was difficult for some of the patients and the rotation itself caused some discomfort to the patient. The mushroom shaped device, being a thin membrane, was expelled through the urethra when there was a sudden increase of the intravesical pressure. The results obtained with the dimpled spheres were very satisfactory when they were tried in ex-vivo and in-vivo animal bladders, even under high intravesical pressures (up to 100 cm H₂O) they could block the BO. The same satisfactory results were obtained when they were tried in 50 volunteers suffering from anatomical incontinence. The device was inserted in the initial group of 15 patients for periods of 1 day to 2 weeks and in the following 35 patients for 1 month. The second group of patients were either failures of conventional treatments of women (aged 41 – 73) refusing any kind of surgery. The average indwelling duration in the second group was 25 days with 0-3 gr. pad test. All patients received antibiotic prophylaxis with quinolones for 48 hours, starting the night before device insertion. None of the patients developed urinary tract infection during the study period.

This new device

The video describes the 3 devices and the clinical use of the dimpled sphere.

Our thanks to:

Prof. O. Loran and Prof. D. Pushkar (Russia)
Prof. F. Schreiter, Dr. R. Muschter and Dr. D. Sauerwein (Germany)
Prof. F. Simsek (Turkey)
for providing the patients and their cooperation