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URODYNAMIC EVALUATION WITH INTRAVESICAL BALLOON IN PATIENTS WITH HIGH GRADE VESICoureTERAL REFLUX

Aim of Study Urodynamic evaluation is the key to management and reconstruction of bladder dysfunction. Objective parameters are critical for determining long-term prognosis as well as methods of surgical intervention in these patients. Urodynamic evaluation is commonly performed to evaluate the bladder and the urethra, as if they were isolated from and independent of the upper tract. When grade IV and V vesicoureteral reflux (VUR) exists, measurements reflect the combined volume, compliance and post-void residual of both systems. The videourodynamic evaluation can help in this situation, but it is an expensive exam and it is not available in some centers. The purpose of this study is to present the preliminary results of urodynamic intravesical balloon evaluation and compare to videourodynamic study.

Methods Seven patients, 8 to 45 years old, mean 14 years, five female, were studied. Six patients have neurological disease due to three myelomeningocele, two spinal cord injury, and transverse myelitis and the other had posterior urethral valve. In four patients the VUR were bilateral. All patients were submitted to videourodynamic study and after to an intravesical balloon urodynamic. Intravesical balloon urodynamic utilizes two catheters 6 Fr. covered by a sterilized condom, one catheter was used to infuse saline solution and the other to measure the intra balloon pressure. In the females the condom is introduced through the urethra and in the male patient it is necessary to perform a cystostomy and utilize an Amplatz catheter to position the balloon in the bladder. At the end of the exam the balloon was removed from the patient and repeated the exam with the same infusion volume to measure the compliance of the balloon and then is subtracted of measurement done in the patient.

Results During the videourodynamic evaluation the VUR started at volume infusion between 45 to 100 ml, mean 50 ml. The maximum volume infused is three times greater after the VUR started. The bladder capacity measured by videourodynamic and intravesical balloon were compared. The results showed a decrease in the mean bladder capacity from 240 to 130 ml (45,8% decrease). The mean bladder compliance decrease from 14 to 7,5 cm water (46.4% decrease).

Conclusion High grade reflux precludes easy measurement of bladder volume, compliance and voiding parameters. Thirty per cent of children with vesical dysfunction present VUR (1). The VUR may promote pitfalls in urodynamic evaluation. During urodynamic study it is possible to occluded the vesico urethral junction utilizing a Fogarty catheter (2,3). Utilizing this method a reduction occurred in 16% of bladder capacity and 33% in bladder compliance (2). This method has the inconvenience to anesthetic the patient and to realize the endoscopy to position the Fogarty catheter. The advantages of intravesical balloon urodynamic are that it is easy to perform, cheap and avoid anesthetic the patient.