

LOW-COMPLIANCE BLADDER IN SPINA BIFIDA PATIENTS– DIAGNOSTICS OF BLADDER WALL FIBROSES BY DIFFERENTIATED DETRUSOR BIOPSY

Hypothesis / aims of study

A low compliance bladder can be diagnosed by standard urodynamic testing. However, often the question emerges if the bad compliance is due to a severe neurogenic dysfunction refractory to conservative treatment or a bladder wall fibrosis. Especially after standard treatment without success the answer is mandatory.

Study design, materials and methods

Fifteen spina bifida patients (12 women, 3 men, 3 – 21 years) with severe neurogenic bladder dysfunction and low compliance bladder refractory to standard treatment were investigated. We completed the urodynamic diagnostics by a cystometry in deep general anesthesia (abolished anal reflex). In case of confirmed low compliance bladder biopsies at the bladder ground and bladder side wall were done. A histological analysis was performed.

Results

Standard videocystometry in 15 patients revealed a mean maximum bladder capacity of 120 ml and a mean bladder compliance of 17 (5 – 21) cmH₂O. Secondary complications included diverticula and vesico-uretero-renal reflux. In 12 patients the diagnosis of a low compliance bladder was confirmed by cystometry in deep general anesthesia. Therefore a bladder biopsy was taken. In 10 specimens a high-grade fibrosis was found. In 7 patients this could only be found in the bladder side wall biopsy. In three patients the fibrosis was diagnosed in both biopsies. There was no case where the fibrosis was only seen in the bladder ground biopsy.

Interpretation of results

The knowledge about the bladder wall morphology is necessary in case of low compliance bladder in order to decide whether a functional rehabilitation of the bladder is possible or not. In case of severe fibrosis bladder augmentation or urinary diversion is indicated. Therefore a bladder biopsy provides important information in addition to urodynamics. However, for sufficient evaluation, bladder biopsies should be taken from the side wall because biopsies from the bladder ground may underestimate the grade of fibrosis.

Concluding message

Bladder biopsies from the bladder side wall allow a sufficient evaluation of bladder wall morphology and diagnosis of a possible fibrosis in cases of low compliance bladder.