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Title (type in CAPITAL LETTERS)	SACRAL RHIZOTOMIES FOR TREATMENT OF DETRUSOR HYPERREFLEXIA

**Aims of study:** Suprasacral spinal lesions may result in lower urinary tract hyperreflexia and autonomic dysreflexia. Therapeutically, failure of conservative treatment is often followed by urinary diversion. However, patients with preserved structural integrity of the bladder wall may also be eligible to undergo sacral rhizotomies. The efficiency of this procedure for recovery of storage function of the bladder and blood pressure regulation was studied in a selected patient collective.

**Methods:** 9 patients with suprasacral spinal cord injuries (1 female, 8 males; mean age 27 years) underwent a laminectomy from L4/5 - S1/2 to expose intradurally the sacral spinal nerves from S2 - S4/5. Depending on the individual situation of the patient selective and superselective rhizotomies of the ventral and dorsal sacral roots were performed (super-selectively: S2/3; completely: S4/5). Therefore, first the ventral and dorsal roots itself were electrostimulated while the bladder pressure was measured simultaneously. Then, the fascicles of the ventral and dorsal roots were separated from each other and stimulated individually. Accordingly to the bladder pressure measurements, the afferent and efferent innervation of the bladder was neurectomized. Postoperative follow-up was 22 months (2 - 48 months).

**Results:** Temporary postoperative complications consisted of headache (n = 3), hypotension (n = 2), diarrhea (n = 2), obstipation (n = 2) and denervation pain of the bladder (n = 1). Max. bladder capacity increased (247±46 to 733±80 cc; p < 0.01). Intravesical pressure decreased (86±18 to 19±3 cm H<sub>2</sub>O; p < 0.01). In all 5 patients with autonomic dysreflexia the blood pressure came back to normal (194±18/112±6 to 126±8/76±5; p < 0.05). 5 patients empty the bladder via urethral CIC. 4 patients received a second stage continent vesicostomy, which had to be converted to a urinary diversion in 2 of them.

**Conclusions:** Selective and superselective sacral bladder denervation is an effective and only moderately invasive alternative to intestinal urinary diversion in selected patients. It requires neither sophisticated nor expensive medical equipment. The therapeutic value of a combined continent vesicostomy remains under investigation.