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THE EFFECT OF SUPRAPUBIC CATHETERIZATION ON VESICO-URETERIC REFLUX IN SPINAL CORD INJURED PATIENTS

Hypothesis / aims of study
Suprapubic catheterisation (SPC) is an acceptable and well tolerated method of bladder management in selected Spinal Cord Injured (SCI) patients with neuropathic bladder dysfunction. Vesico-ureteric reflux (VUR) in spinal cord injured patients is an important cause of morbidity. We assessed the potential risk of developing VUR in patients with SCI and SPC in their bladder management.

Study design, materials and methods
A retrospective analysis of 61 consecutive SCI patients between1995 -2004, in the London spinal cord injury centre was undertaken. Video-cystometrography (VCMG) was performed before and after SPC insertion in all patients. The incidence of VUR, grading, maximum detrusor pressure (MDP), bladder compliance, and time to development of reflux from the SPC insertion were reported.

Results
The mean age was 47.3 years (range 35 -65), Male/ Female ratio was 45/16. The levels of injury were as follows:cervical: 25; thoracic: 28; lumber: 6; cerebrovascular accident CVA: 1; and sacrectomy:1. Of the 61 patients, 47 (77%) patients developed VUR within 0.3 - 10 years (mean 4 years) of SPC insertion. Only 14 (23%) patients remain free of VUR with 10 years follow up post SPC insertion. Thirteen (25%) patients had bilateral reflux (grades 1 - 4). 32/47 (68%) patients with reflux had no increase in the MDP in the VCMG before and after SPC insertion. A simultaneous ultrasound revealed five cases of hydronephrosis 5/47 (11%). In 9/ 47 (19.2 %) patients the VUR was associated with an increase in MDP. The remaining 6/47 (12.8%) patients with VUR and had SPC at the time of injury and the first VCMG after 3 months showed reflux.

Interpretation of results
The mean bladder capacity was reduced significantly after insertion of SPC from 348.8 ml range (50 – 1000 ml) to 217.5 ml range (50 – 600 ml) with P value of P<0.0001 and loss of bladder compliance in (41/47) 87% patients with VUR and only (3/14) 27% patients with no VUR.

Concluding message
SPC is an acceptable method of bladder management in SCI patients. However, it seems that it is an independent factor in causing VUR. Our data suggests that SPC has a significant role in the development of VUR in SCI patients regardless of MDP, but does seem to be related to reduction in bladder capacity and loss of bladder compliance. We recommend active follow up and prompt treatment where required to avoid complications secondary to VUR. We believe that a high index of suspicion should be maintained and all patients with SPC should have regular VCMG and ultrasound to monitor this condition.

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Is this a clinical trial?	**No**
What were the subjects in the study?	**HUMAN**
Was this study approved by an ethics committee?	**No**
This study did not require ethics committee approval because	**retrospective study**
Was the Declaration of Helsinki followed?	**No**
This study did not follow the Declaration of Helsinki in the sense that	**No need**
Was informed consent obtained from the patients?	**Yes**