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ROLE OF LUMBOSACRAL MAGNETIC RESONANCE IMAGING IN CLINICAL EVALUATION OF ADULT NOCTURNAL ENURESIS

Hypothesis / aims of study
Nocturnal enuresis is known as a childhood disease but it also seen in adult life. It effects on patient's personality and causes social problems. However, neuroanatomical, psychological, and functional causes of nocturnal enuresis is a condition that can be treated. In this retrospective study we investigated the diagnostic method of lumbosacral magnetic resonance imaging (MRI) which is commonly used in clinical evaluation of adult patients with nocturnal enuresis.

Study design, materials and methods
Adult patients who have complaint about bed-wetting during sleep and admitted to our clinic between 2009-2016 investigated and a database was performed. Lumbosacral (vertebral+spinal cord) MR images, physical examination and urodynamic studies added to this database.

Results
The data of 70 patients (68 males, 2 female) accordance with the criteria has been reached. The mean age was 21.6 years (range: 18-43). On physical examination, twenty-nine patients had lumbosacral/sacral hypertrichosis, one patient had meatal stenosis, one patient had increased anal sphincter tonus and other patients were normal. On videourodynamic study(VUDS), 10 (14.2%) patients had single pathology while 56 (80%) patients had two or more associated VUDS findings. 4 (5.7%) patients had normal VUDS results. On the lumbosacral spinal MRI, only 4 (5.7%) patients had neurogenic pathology to explain nocturnal enuresis (1 tethered cord, 1 filum terminale lipoma, 1 vertebral hemanjioma, 1 scoliosis) were detected. 53 (75.7%) patients had normal MRI, while 15 (21.4%) patients had pathology of vertebral bone structure (12 Schmorl nodule, 3 changes in bone structure) were detected (Table.1&2).

Interpretation of results
According to our study results, MRI seems to be limited role for planning the treatment procedure for adult nocturnal enuretic patients.

Concluding message
Our findings showed that lumbosacral MRI provides a little contribution to clinical evaluation in adult patients with NE.

Table.1: Characteristics of Pathological MRI Finding Patient

No.	*Sex*	*Age*	*Physical Examination*	*Urodynamic Result*	*MRI Finding*
1	*M*	*20*	*Sacral hypertrichosis*	*DO, HB, LBC, IBS, BOO, D/C*	*Filum terminale lipoma*
2	*M*	*28*	*Normal*	*DOI, HB, LBC*	*Vertebral hemanjioma, Schmorl Nodul*
3	*M*	*21*	*Sacral hypertrichosis*	*DO, HB, LBC, BOO, D/C*	*Tethered Cord*
4	*M*	*21*	*Meatal Stenosis*	*LBC, BOO*	*Scoliosis, Schmorl Nodul*

DO: *Detruor overactivity,* ***HB:*** *Hypocompliant bladder,* ***LBC:*** *Low bladder capacity,* ***IBS:*** *Increased bladder sensation,* ***BOO:*** *Bladder outflow obstruction,* ***D/C:*** *Diverticula/cellula,* ***DOI:*** *Detrusor overactivity incontinence*

Table.2: Patient characteristics

Sex	***No. (n:70)***
Male	*68*
Female	*2*
Physical Examination	
Hypertrichosis	*29*
Meatal Stenosis	*1*
Increased Anal Sphincter Tonus	*1*
Normal	*39*
Urodynamic Study	
Detrusor Overctivity	*29*
Detrusor Overactivity İncontinence	*5*

Detrusor Underactivity	*5*
Overactive Pelvic Floor Muscle	*1*
Low Bladder Capacity	*24*
Hypocompliant Bladder	*23*
Bladder Outflow Obstruction	*14*
Reduced Bladder Sensation	*14*
Increased Bladder Sensation	*1*
Spinning Top Deformity	*2*
Relative Low Bladder Capacity	*19*
Relative Hypocompliant Bladder	*4*
Post Voiding Detrusor Overactivity	*13*
Sustained Detrusor Underactivity	*1*
Voiding Detrusor Underactivity	*1*
Suspicious Bladder Outflow Obst.	*2*
High Pressure Voiding	*10*
Increased Bladder Sensation	*3*
Relative Increased Bladder Capacity	*2*
Diverticula/Cellula/Trabeculation	*2*
Normal	*4*
Lumbosacral MRI Finding	
Normal	*53*
Vertebral Bone Deformity	*15*
Vertebral Hemanjiom	*1*
Tetherd Cord	*1*
Filum Terminale Lipoma	*1*
Scoliosis	*1*

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