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The first Iraqi experience in Sacral Neuromodulation for idiopathic & neurogenic voiding dysfunction**Issam Salman Al-Azzawi**

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Background : Voiding dysfunction is a major problem affecting the health & social life of a large group of patients from both genders & in different age groups . In Iraq the treatment options available, until recently, were mainly conservative (pharmacological & behavioral therapy).

Aims of the study: To present our early experience in Iraq , using Sacral Neuromodulation (SNM) for patients with different types of refractory voiding dysfunctions (who failed to respond to conservative treatments) , with discussion of the pathological, technical & social factors that affect the response rate .

Materials & methods: In this prospective , clinical, interventional study, which was conducted during the period August 2015 to September 2016 , 24 patients were included. They were 14 female & 10 males, their mean age was 30 year , their presentations were overactive bladder/Urgency Urinary Incontinence (UUI) in 10 patients, incomplete emptying of bladder / non-obstructive retention of urine in 9 patients , and mixed presentation in 5 patients. Voiding dysfunction was idiopathic in 13 patients & of neurogenic origin in 11 patients (mainly spinal cord pathologies) .All the patients were evaluated with detailed history, physical examination & investigations (including voiding diary, ultrasound scanning & urodynamic studies) and all were treated with the two stage SNM, using the Interstim system with tined leads (after giving the patients full explanation about this kind of therapy, and taking their consent). Successful clinical response is defined as achieving 50% or more improvement in voiding diary variables .

Results: In general (for all types), positive response was achieved in 70% during the test phase but it was drop to 58% after implanting the pulse generator (permanent phase) , the mean age of responders was 28 year , females were better responding than males (71.4% vs 40%), Response according to presentation was 60% in those with overactive bladder/UUI, 67% in those with retention of urine and 40% in those with mixed presentation . Response rate in idiopathic voiding dysfunctions was 84.6% while in neurogenic dysfunctions it was 27.5% ,which was a statistically significant difference . Complications encountered were infections, pain & dislodgement/ break of lead. Extra urinary benefits recorded in some patients were improvements in bowel motion , erectile function, relieve of chronic pelvic pain & even a significant improvement in the lower limb muscle power in one patient with incomplete spinal cord injury .

Interpretation of results: Successful clinical response achieved in this study may be less than in other series because of our early experience in this kind of therapy. The possible reasons for the drop in response after implanting the pulse generator were technical (dislodgement of lead in 1 patient & infection in 3 patients) and psycho-social factors (in our society, some young female patients, after having good initial response to SNM, they became socially isolated because of embarrassment & feeling of stigma being depending on a device in their bodies, and this frequently end with worsening of their response to treatment).Differences in response in correlation with the type of presentation were statistically not significant , while response in correlation with the type of pathology (idiopathic versus neurogenic) was with a statistically significant difference (P-value 0.004), which was also concluded by other studies and may be explained by the fact that those patients with idiopathic voiding dysfunction have more intact spinal cord tracts for the transmission of the signals to the brain .

Conclusions: SNM is a safe & reasonably effective treatment modality, that can be used as a second line therapy for a selected group of patients with refractory voiding dysfunctions.

* Best results achieved in psychologically stable, in females and in young patients, with idiopathic voiding dysfunction, using the 2- staged procedure with Tined-lead electrodes .

* Though the response to SNM was less in Neurogenic voiding dysfunction, but the procedure was safe ,and for those who responded, there was a dramatic improvement in their quality of life .

Keywords: voiding dysfunction, overactive bladder, urgency urinary incontinence , neuromodulation.

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