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TEMPORARY SACRAL NERVE BLOCK (TSNB) OF S3 SEGMENT: A MINIMALLY INVASIVE DIAGNOSTIC TOOL FOR PAINFUL BLADDER SYNDROME/INTERSTITIAL CYSTITIS (PBS/IC)

Hypothesis / aims of study

The painful bladder syndrome/interstitial cystitis is a chronic heterogenic syndrome with the symptom trias nocturia, pollakiuria and bladder sensations with no proven urinary infection or other obvious pathology.
This rare disease mostly affects women, but men and even children can be suffering also from this condition.
So far the etiology of the painful bladder syndrome is unknown. Several theories have been postulated, but the underlying pathophysiology is still unidentified.
What is known so far is, that there is a defect in the glycosaminoglycan layer of the urothel and the increased presence of mast cells in the muscle layer.
The only findings which prove a painful bladder syndrome so far are Hunner ulcus and petechial bleeding, which are only observed at late stage.
Therefore, until today, the diagnosis of painful bladder syndrome remains low sensitive.

The temporary sacral nerve block is a minimally invasive diagnostic tool for differentiating causes, i.e. neurogenic detrusor overactivity, idiopathic detrusor overactivity, pelvic pain syndrome and painful bladder syndrome.

Study design, materials and methods

From 1980 till 2006, the temporary bilateral sacral nerve block was performed in 1237 patients with symptoms of the overactive bladder non responsive to drugs.
Before the procedure, all the patients had a full urological examination (history with bladder diary, sonography, cystoscopy).
Additionally all these patients underwent conventional videourodynamics.
TSNB was performed in local anaesthesia, immediately followed by cystoscopy with retrograde filling of the bladder for documenting the filling volume.
The day after the examination the patients were interrogated, if there was any change in their symptoms.

Results

Patients with painful bladder syndrome, neurogenic and idiopathic detrusor overactivity (n=1190) showed change in symptoms and maximum cystometric capacity during the examination.
However 47 patients showed no change of symptoms and no significant increase in maximum cystrometric capacity during and after the procedure.
After analyzing the data, the threshold maximum cystometric capacity for painful bladder syndrome was assumed to be on 350 ml during TSNB.
After analyzing the long – time follow up, 35 of 47 patients underwent cystectomy because other less invasive therapies, i.e. EMDA, showed no beneficial effect.
The histological results in these patients confirmed the expected diagnosis of painful bladder syndrome in all of these 35 patients.

Interpretation of results

TSNB showed no effect in painful bladder syndrome (no significant increase of the bladder capacity, no change in symptoms).
Because of its significant effect on the maximum cystometric capacity in other forms of overactive bladder syndromes like idiopathic, neurogenic detrusor overactivity and pelvic pain syndrome and its no effect on painful bladder syndrome, TSNB is a high – specific diagnostic tool in diagnosing painful bladder syndrome in earlier forms of painful bladder syndrome, before Hunner ulcus and petechial bleeding occur.

Concluding message

The temporary sacral nerve block is a minimally invasive diagnostic tool and an easy to do method for painful bladder syndrome/interstitial cystitis respectively. It shows a higher specifity and sensitivity with lower invasiveness and fewer side effects than other methods. With this tool, earlier stages of painful bladder syndrome can be diagnosed and suffering patients can be treated more effectively.

References

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