132

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A METHOD FOR ANALYSIS OF PUDENDAL NERVE INTEGRITY THROUGH PENILE DORSAL NERVE STIMULATION AND INTRAURETHRAL SURFACE ELECTRODE REGISTRATION.

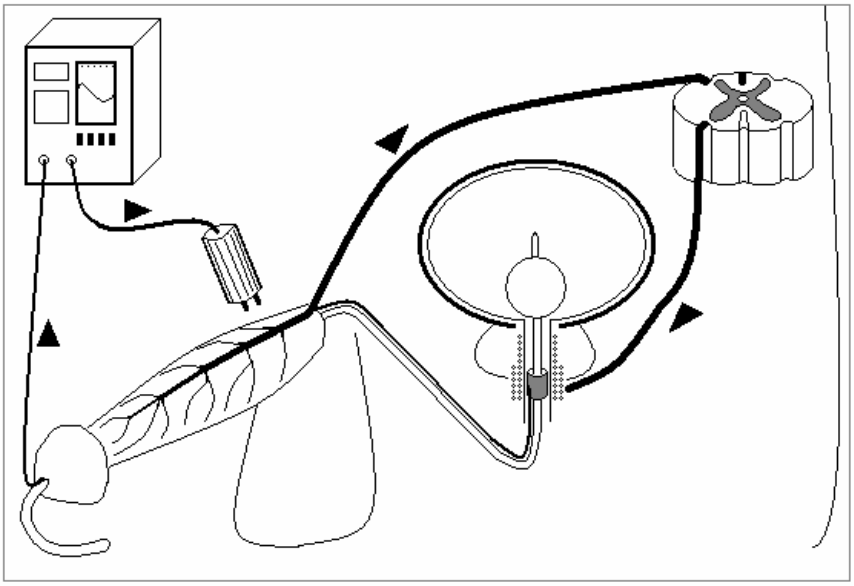
Hypothesis / aims of study

The integrity of pudendal nerves seems to be fundamental in the maintenance of post radical prostatectomy urinary continence and penile erectile function. The exact mechanism involved is still subject of discussion (1,2). Limitations for these studies are the necessity of needle punctures and lack of clinical conclusions from the results of the methods now available. Herein we describe a way to identify the integrity of these nerves by a less invasive procedure, making it more suitable for practical application.

Study design, materials and methods

The study was in accordance with the institutional ethics committee. From February 2003 to March 2004, 20 male patients were prospectively enrolled in this study after been considered neurologically normal. After patient's consent, the pudendo-urethral reflex was obtained through direct stimulation of the dorsal nerves in the proximal third of the penis. Registration was obtained directly in the membranous urethra at the level of the external urethral sphincter through a surface electrode, mounted in a Foley catheter, 10 F, about 2,5 cm external to the balloon. This procedure located the electrode at the level of the sphincter at the membranous urethra. The precise position of the electrode was determined by digital rectal examination. All individuals were submitted to measurements of the sensory threshold and the reflex latency time. (Fig 1).

Fig.1 - Schematic representation of the pudendo-urethral reflex.



Results

The pudendo-urethral reflex was recorded in all the patients studied. The analysis demonstrated that the sensory threshold ranged from 1.0 to 5.0 mA, with average and SD of 2.62 ± 1.03 mA. The reflex latency ranged from 22 to 50.8 mseg, with average and SD of 34.06 ± 7.9 mseg. (Table 1).

Table 1 – Results of the pudendo-urethral sensory threshold and pudendo-urethral reflex latency.

Patients	Sensory Threshold	Reflex Latency
1	1	50.8
2	3.6	31.6
3	2.8	49.6
4	2	31
5	4	36.8
6	2.2	41.6
7	1.8	28
8	5	33.4
9	2.6	29.6
10	2.4	30.4
11	2.4	22
12	4.6	36.8
13	2.2	31
14	2.4	34.8
15	1.8	43.6
16	1.4	30.8
17	2.2	27.7
18	3.4	41
19	2.6	23.6
20	2	27
Mean	**2.62**	**34.06**
SD	**1.03**	**7.90**

Interpretation of results

The consistency of the responses in 100% of the cases demonstrate the viability of this technical variation as a less invasive and reliable method for the analysis the pudendal urethral reflex in males. The results here obtained are in accordance with others in the literature (3).

Concluding message

This less invasive approach for detection of pudendal urethral reflex allows a widespread use in patients going to radical prostatectomy. Comparison of the pre and post operative results will favorably contribute to a better understanding of such innervations in maintaining urinary continence and penile erection.

References

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