

ELECTROPHYSIOLOGIC FINDINGS IN THE PELVIC FLOOR OF PATIENTS WITH PROSTATE CANCER.

Hypothesis / aims of study

Urinary incontinence and erectile dysfunction are frequently consequences of surgical treatment of prostate cancer (1). Some studies reported age, prostatic weight, tumor grade, pathological stage and resection of the neurovascular bundles as risk factors for these problems (2). The aim of this study is to verify if the prostate cancer itself can cause neurophysiologic alterations in the pelvis of such patients, previously to any treatment.

Study design, materials and methods

The study was in accordance with the institutional ethics committee. From January 2003 to January 2004, twenty men with prostate cancer were prospectively evaluated regarding ultrasound prostate weight, low urinary tract symptoms (IPSS), Gleason score, and erectile function (Simplified International Index of Erectile Function). Previously to any treatment, all were submitted to neurophysiologic evaluation of the pelvic floor through a previously described method of pudendo-urethral latency analysis (3). The sensory threshold and latencies of the pudendal nerve somatosensory evoked potential and pudendo-anal, pudendo-urethral and urethro-anal reflexes. The results of neurophysiologic tests were compared with clinical parameters, such as age, Gleason score, prostatic weight, IPSS and erectile function.

Results

The mean $\pm$ SD age of the twenty patients was 64.7 ± 6.2 years, range 47 to 72 years, with median 66.5 years; mean Gleason score was 6.55 ± 1.1 , range 4 to 9 and median 7; IPSS ranged from 5 to 17, mean 8.0 ± 4.2 and median 6; mean IIEF was 25.30 ± 7.6 , ranged 3 to 30 and median 28; prostate weight ranged from 13.5 to 113g, with mean 38.5 ± 23.4 g and median 30.5g. Mean threshold and latency Pudendal Evoked Potential was 3.48 mA and 41.09 mseg respectively; mean urethro-anal threshold was 4.79 mA e latency was 58.86 mseg; Pudendo-anal and pudendo- urethral threshold were the same 2.62 mA; and mean latency of the pudendo-anal and pudendo- urethral were 44.89 and 34.06 mseg respectively. Spearman test for Age and latencies for evoked potential, urethro-anal, pudendo-anal and pudendo-urethral was -0.13, -0.21, -0.04 and -0.34 respectively, Gleason and latencies for evoked potential, urethro-anal, pudendo-anal and pudendo-urethral was -0.06, 0.20, 0.26 and 0.24 respectively; for IPSS and latencies for evoked potential, urethro-anal, pudendo-anal and pudendo-urethral was -0.06, 0.64, 0.16 and 0.35 respectively; for IIEF and latencies for evoked potential, urethro-anal, pudendo-anal and pudendo-urethral was -0.29, -0.05, -0.32 and -0.05 respectively and for Prostate weight and latencies for evoked potential, urethro-anal, pudendo-anal and pudendo-urethral was -0.14, 0.20, -0.18 and 0.10 respectively. (Table 1).

Table 01 – Results of the pelvic electrophysiologic findings in patients with prostate cancer before treatment.

			Evoked Potential		Urethro-Anal Reflex Latency		Pudendo-Anal		Pudendo Urethral
			Threshold	Latency	Threshold	Latency	Threshold	Latency	Latency
	Mean±DP		3.4±2.2	41.0±4.2	4.7±3.0	58.8±8.6	2.6±1.0	44.8±12.6	34.0±7.9
		Median	2.8	40.6	3.7	58.7	2.4	44.2	31.3
			Spearman Correlation (sr) and (p)						
Age	64.7±6.2	66.5	-0.02	-0.22	-0.13	0.03	-0.20	-0.04	-0.34
			0.90	0.34	0.58	0.87	0.36	0.83	0.13
Gleason	6.5±1.1	7	-0.04	-0.06	-0.06	0.20	0.31	0.26	0.24
			0.84	0.78	0.77	0.39	0.17	0.25	0.30
IPSS	8.0±4.2	6	0.06	-0.06	0.29	0.10	0.01	0.16	0.35
			0.77	0.78	0.20	0.64	0.97	0.49	0.12
SIIEF	25.3±7.6	28	-0.16	-0.29	-0.31	-0.05	-0.08	-0.32	-0.05
			0.49	0.21	0.17	0.82	0.72	0.15	0.82
Prostate(g)	38.6±23.4	30.5	-0.13	-0.14	-0.16	0.30	-0.22	-0.18	0.10
			0.56	0.55	0.47	0.18	0.33	0.43	0.64

Interpretation of results

In this study no correlation was observed between clinical parameters and neurophysiological findings in patients with prostate cancer previously to treatment.

Concluding message

The pelvic floor neurophysiologic tests results in patients with prostate cancer before surgical treatment have no significant correlation with clinical parameters as age, Gleason score, IPSS, prostate weight and erectile function index (IIEF). Further correlation with the post radical prostatectomy status of such electrophysiologic findings will allow a better understanding of this subject.

References

1. Assessment of bladder and urethral sphincter function before and after radical retropubic prostatectomy. J Urol, 171: 1563, 2004.
2. Risk factors for urinary incontinence after radical prostatectomy. J Urol, 156: 1707, 1996.
3. A method for analysis of pudendal nerve integrity through penile dorsal nerve stimulation and intraurethral surface electrode registration. Submitted to the ICS/IUGA Annual Meeting, France, Paris, 2004.

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