

A novel histological finding in TURP of patients with bladder outlet obstruction not associated with BPH.

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INTRODUCTION

Bladder outlet obstruction (BOO) is a prevalent condition in males over 40, and its incidence rate shows an increase with age. The first line of treatment in those cases are drugs for relieving lower urinary tract symptoms (LUTS). It may be assumed therefore that the products from transurethral resection of the prostate (TURP) disclose either usual acinar and stromal or purely stromal nodules. Skeletal muscle fibers and smooth muscle hyperplasia are not found in TURP due to BPH.

OBJECTIVES

This study aims to present a new cause of male BOO, attempting to answer why some patients do not respond to medications treatment for LUTS and associate with the presence of prominent skeletal muscles fibers in sections of TURP without any transition zone nodules.

STUDY DESIGN, MATERIALS AND METHODS

We performed a retrospective study, including patients with LUTS who underwent TURP from 1995-2018, and whose histological diagnosis showed the absence of transition zone nodules, but with the presence of skeletal muscle fibers from the bladder neck. Hyperplastic smooth muscle and skeletal muscle fibers were present in all cases, while no BPH nodules were found. The number of sections with skeletal muscle fibers as well as the percentage of positive sections from the entire sections of the TURP for each case were recorded. Extent of skeletal fibers in each positive section was evaluated as the area occupied: + (<25%), ++ (>25-<50%), +++ (>50-<75%), and ++++ (>75%). As a control group for presence of skeletal muscle fibers, we analyzed the bladder neck sections from surgical specimens of 50 patients submitted to radical prostatectomy. A series of characteristics were analyzed, such as age when the patients were submitted to the TURP, previous urological surgeries, ultrasonographic evaluation (prostate volume, postvoid residual urine volume), urodynamic study, and the presence of diverticulum and bladder wall trabeculation observed during the TURP.

RESULTS

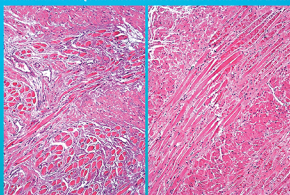
Medium age	59,8y (40-77y)
Medium prostate size	33,15cm ³ (12,5-97cm ³)
Hyperplastic and skeletal muscle fibers	AG 100% CG 20%
Medium percentage of sections showing skeletal muscle fibers	AG 25% CG 3,3%

*AG: Analyzed group / CG: Control group

EXTENT IN EACH SECTION

	+	++	+++	++++
Analyzed group	32,40%	29,60%	18,30%	19,70%
Control group	100%	0%	0%	0%

PROMINENT AND FREQUENT SKELETAL MUSCLE FIBERS FOUND IN OUR CASES:



TRANSVERSE SECTION

LONGITUDINAL SECTION

INTERPRETATION OF RESULTS

The findings of our study favor that BOO of the patients was due to bladder neck obstruction rather than to BPH. The etiopathogenesis of this condition is still unclear. One of the theories attributes the bladder neck dysfunction to abnormalities of the striated urethral sphincter.

In 1966, Manley confirmed a previous study by Kalischer that, in children, the skeletal urethral sphincter forms a distinctly marked muscle cap on the prostate, whereas in adults, the muscle fibers are partially atrophied and irregularly dispersed among the smooth muscles of the prostate. Thus, the muscle cap appears much less distinct except in the apex of the prostate where is part of the urogenital diaphragm.

We speculate that in primary bladder neck obstruction there is a persistence of the cranial part of the skeletal urethral sphincter, and it may interfere in the complex process of micturition. The presence of frequent and prominent skeletal muscle fibers in our cases is striking in comparison with the lack of these fibers that were present only in a few patients of the group control.

CONCLUDING MESSAGE

The presence of frequent and prominent skeletal muscle fibers in the sections of TURP in striking contrast with controls favors that its existence may be involved in the etiopathogenesis of bladder neck obstruction as well as may be a morphologic clue for its detection. Also, they may be one of the reasons for unsuccessful pharmacological therapy for LUTS.

References

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