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THE CORRELATION OF AORTIC CALCIFICATION AND LUTS

Hypothesis / aims of study
The prevalence of lower urinary tract symptoms increased with age. It is known that irritable bladder symptoms such as urinary frequency, urgency, nocturia increased with age in many studies. Recently it was reported that vascular calcification was one of the cause of lower urinary tract symptoms. We studied to evaluate the association between lower urinary tract symptoms of vascular calcification in the abdominal CT using by Agar score.

Study design, materials and methods
The records were obtained from a retrospective database who underwent abdominal CT due abdominal pain, hematuria. Sex, age, height, weight, prostatic size, calcification of aorta and internal iliac artery, amount of subcutaneous fat and visceral fat in the umbilicus level, International Prostate Symptom Score, overactive symptoms score and uroflowmetry were assessed. Calcification of aorta was estimated from renal artery bifurcation to iliac artery bifurcation level. And internal iliac artery calcification was calculated from bifurcation of iliac artery to bladder. We scanned each subject of 0.5cm interval on the CT scan. The calcification of blood vessels was measured as Agar score using abdominal CT by Aquarius iNtuition Edition version 4.4.6.85.2800 program. This program has been used in measuring calcification on the coronary artery on cardiac CT in chest pain patients.

Results
From June 2012 to May 2014, 58 patients with LUTS were enrolled. Mean age of LUTS patients was 57.5±14.6(25~86)years old. Mean of PSA was 1.2±1.01 ng/dl(0.13~3.47). Mean of prostate size was 34.9±18.45 (19.4~98.8)gm. Aortic calcification significantly correlated with nocturia (p = 0.002), sum of irritative Symptoms (p = 0.019), sum of IPSS (p = 0.026), urgency (p = 0.031) and urgency incontinence (p = 0.394). The results of correlation of aortic calcification and symptoms was described.(table 1)

Interpretation of results
Aortic calcification significantly correlated with lower urinary tract symptoms. Urinary symptoms and sign was no correlation with internal iliac calcification and body fat composition.

Concluding message
Aortic calcification was correlated with urinary symptoms in the abdominal CT.

Table 1. The results of correlation of aortic calcification and symptoms.

Parameter	Nocturia	Sum of irritative Symptoms	Sum of IPSS	Urgency	Urgency incontinence	Max of uroflow	Residual urine volume
The correlation coefficient(r)	0.403	0.310	0.294	0.287	0.394	-0.294	0.291
P	0.002	0.019	0.026	0.031	0.002	0.047	0.05

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