

## THE EFFECTS OF CONDOM USE ON PROSTATIC CALCIFICATIONS

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### ABSTRACT

**Introduction:** Prostatic calcifications are usually seen in the middle and older ages. Studies has reported a prevalence between 7.3% and 71%.The etiology of calcifications is not clear yet. Condoms are barrier contraceptive methods.

**Materials and methods:** Studies have shown that the use of condoms as a contraceptive method varied between 11% and 15% in our country. 1316 male patients between the ages of 20-59 who were admitted to our hospital between October 2018 and October 2019 for various reasons and who had undergone non contrast abdominal CT were asked whether they used condoms or not.

**Results:** In our results, rate of condom use was 12%. Prostatic calcification rate was significantly higher in condom users than non-users. There was a significant correlation between age and duration of condom use and the incidence of prostate calcification.

**Conclusion:** Condom is a reliable method of contraception that also prevents sexually transmitted diseases and prevents unwanted pregnancies. However, it increases the prevalence of prostatic calcification.

**Keywords:** Condom, Prostate, Calcifications, Age.

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### Introduction

Prostatic calcifications are usually seen after reaching the middle ages and symptoms occur very rarely (studies have reported a prevalence between 7.3% and 71%<sup>(1, 2)</sup>). Prostatic calcifications are usually detected during imaging procedures for benign prostatic hyperplasia and urinary stone disease. However, the etiology of calcifications is not clear yet. In clinical studies, urinary reflux to prostatic ducts, penetration of spermatozoa into ducts, response of prostate epithelium to chronic inflammation and chronic bacterial prostatitis have been implicated in pathophysiology<sup>(3)</sup>.

Condoms are barrier contraceptive methods. Studies have shown that the use of condoms as a

contraceptive method varied between 11% and 15% in our country<sup>(4, 5)</sup>. In addition to the protection from pregnancy, it is also advantageous that it provides protection against sexually transmitted diseases and has no medical contraindications.

During orgasm, the bulbospongiosus muscle manifests rhythmic contractions and if there is no barrier in front of it, the semen is expelled from the urethra in the form of jet flow.

Due to its structure, condom may cause resistance in the whole ejaculatory system during ejaculation, resulting in congestion and stasis, as well as penetration of spermatozoa into the ducts, causing prostatic calcification. In this study, we investigated whether condom use increases the prevalence of prostatic calcification.

**Materials and methods**

After obtaining the approval of Firat University Non-Interventional Research Ethics Committee 03.10.2019. 14/20, 1316 male patients between the ages of 20-59 who were admitted to our hospital between October 2018 and October 2019 for various reasons and who had undergone non contrast abdominal CT were asked whether they used condoms or not. In 159 patients, regular condom use was detected. Then, based on age, a second group was formed randomly among the patients who were same age and did not use condoms. CT scans of the patients were scanned in thin sections. Statistical analysis was carried out with IBM SPSS Statistics, version 22.0. Independent-samples t test, Mann-Whitney test and chi-squared test were used to compare variables of 2 groups.

**Results**

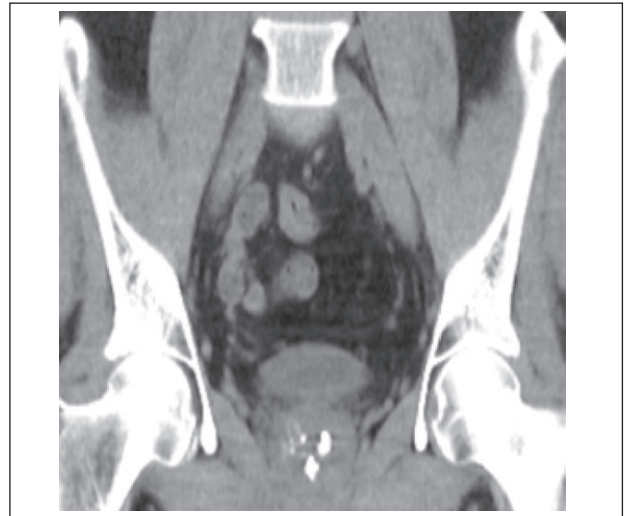
This study was conducted on 318 patients, 159 of them use regulary condom. The ages of the participants ranged between 20–59, and the average age of participants was 38.64±11.35. In our results, the rate of condom use was 12%. Prostatic calcification rate was significantly higher in condom users than non-users (37.1% - 20.1%, p=0.001). (Table 1) There was a significant correlation between age and duration of condom use and the incidence of prostate calcification (p=0.003, p=0.001).

		PRESENT ABSENT	PROSTATE CALCIFICATION		TOTAL
CONDOM USE	USER	Number	59	100	159
		%	37.1%	62.9%	100%
	NON-USER	Number	32	127	159
		%	20.1%	79.9%	100%

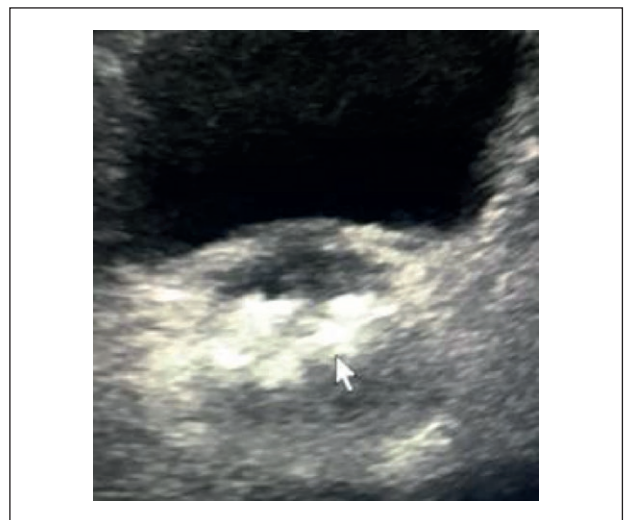
**Table 1:** The rate of prostate calscification.  
p = 0.001

**Discussion**

Prostatic calcifications (Pcal) are usually seen in middle-aged and old men. Corpora amylicea calcification, obstruction, intraprostatic reflux, penetration of the spermatozoa into the ducts, inflammation and some metabolic diseases play an important role in the development of Pcal<sup>(3)</sup>. They are incidentally detected by urinary tract x-ray examination, US and CT scan performed due to another complaint since they cause rare symptoms (Figure 1-2).



**Figure 1:** ????



**Figure 2:** ????

Prostatic calcifications are generally asymptomatic, do not require special treatment, and calcifications requiring treatment are associated with chronic prostatic inflammation<sup>(6)</sup>. As they grow in size, they may lead to lower urinary tract symptoms, chronic pelvic pain syndrome and sexual dysfunction in middle-aged men<sup>(7,8)</sup>. In the prevalence studies, wide range of rates such as 7.35%-71% have been reported<sup>(1,2)</sup>. We have determined the prevalence of this condition as 28.6% between 20 and 59 years of age in our study.

Condom is a temporary, reversible, effective and reliable barrier contraceptive method. It prevents unwanted pregnancies and also protects against sexually transmitted diseases, especially AIDS. It has been reported that 11% -15% of couples in our country use condoms as contraceptive methods<sup>(4,5)</sup>. In our study, we found that the rate of condom use between the ages of 20-59 was 12%.

Orgasm is caused by rhythmic contractions of the bulbospongiosus muscle. These rhythmic contractions allow ejection of the semen by jet flow. While there was no change in T1 or T2 and ADC (apparent diffusion coefficient) values before and after ejaculation in the central gland, significant decreases in T2 and ADC values in the peripheral zone were found to be 12% and 14%, respectively<sup>(9)</sup>.

During ejaculation, a retrograde flow occurs with partial obstruction of the ejaculate excreted from the urethra with positive pressure, and ascending migration of microorganisms in the anterior urethra to the proximal urethra, ejaculatory system and bladder occurs. After coitus and ejaculation, the prostate is congested and leukocytosis is observed in prostatic secretion for several hours. Prostatic congestion doubles and anterior urethral flora spreads retrogradely<sup>(10)</sup>. This can lead to chronic prostatitis and increases the risk of calcification in the prostate. Köseoğlu et al. have suggested that pressure increase in urethra and prostatic stasis lead to crystal precipitation and prostatic calcification of the corpora amylacea<sup>(11)</sup>. Due to its structure, condom can contribute to the formation of chronic prostatitis and thus to prostatic calcification by causing resistance, congestion and stasis in the entire ejaculatory system during ejaculation. Furthermore, it can lead to penetration of spermatozoa into the ducts and may cause prostatic calcification.

In our study, the rate of prostatic calcification was significantly higher in condom users than non-users (37.1% vs 20.1%,  $p = 0.001$ ). There was a significant correlation between age and duration of condom use and rate of prostate calcification ( $p = 0.003$ ,  $p = 0.001$ ). Twenty four months and over condom use increases the risk of prostate calcification ( $p < 0.05$ ). The rate of prostatic calcification increases with condom use, duration of use and age.

In conclusion, condom is a reliable method of contraception that also prevents sexually transmitted diseases and prevents unwanted pregnancies. However, it may increase the prevalence of prostatic calcification.

## References

- 1) Geramoutsos I, Gyftopoulos K, Perimenis P, Thanou V, Liagka D, Siambli D, et al. Clinical correlation of prostatic lithiasis with chronic pelvic pain syndromes in young adults. *European urology*. 2004; 45(3): 333-7; discussion 7-8.
- 2) Kim WB, Doo SW, Yang WJ, Song YS. Influence of prostatic calculi on lower urinary tract symptoms in middle-aged men. *Urology*. 2011; 78(2): 447-9.
- 3) Engelhardt PF, Seklehner S, Brustmann H, Riedl C, Lusuardi L. Tumor necrosis factor-alpha expression in patients with obstructive benign prostatic hyperplasia is associated with a higher incidence of asymptomatic inflammatory prostatitis NIH category IV and prostatic calcification. *Scandinavian journal of urology*. 2015; 49(6): 472-8.
- 4) Özalp SS. Adolesanlarda Kontrasepsiyon. *Türkiye Klinikleri Journal of Surgical Medical Sciences*. 2006; 2(13): 51-5.
- 5) Tekiner AS, Çetin F, Ceyhun AG, Kafkaslı A. Planlanmamış gebelikler ile kontraseptif yöntemler arasındaki ilişki. *Dirim Tıp Gazetesi*. 2010; 85(2): 65-71.
- 6) Hyun JS. Clinical Significance of Prostatic Calculi: A Review. *The world journal of men's health*. 2018; 36(1): 15-21.
- 7) Soric T, Selimovic M, Bakovic L, Simurina T, Selthofer R, Dumic J. Clinical and Biochemical Influence of Prostatic Stones. *Urologia internationalis*. 2017; 98(4): 449-55.
- 8) Cao JJ, Huang W, Wu HS, Cao M, Zhang Y, Jin XD. Prostatic Calculi: Do They Matter? *Sexual medicine reviews*. 2018; 6(3): 482-91.
- 9) Medved M, Sammet S, Yousuf A, Oto A. MR imaging of the prostate and adjacent anatomic structures before, during, and after ejaculation: qualitative and quantitative evaluation. *Radiology*. 2014; 271(2): 452-60.
- 10) Coban G, Gurer E, Kalemci S, Cicek C, Aydemir S, Cikili N. Relationship between condom usage and lower urinary tract symptoms in sexually active young men./ Seksuel aktif genc erkeklerde kondom kullaniminin alt uriner sistem semptomlari ile iliskisi. *Turkish Journal of Urology*. 2011; 37(3): 257-64.
- 11) Koseoglu H, Aslan G, Sen BH, Tuna B, Yorukoglu K. [Prostatic calculi: silent stones]. *Actas urologicas espanolas*. 2010; 34(6): 555-9.

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