Available online at www.sciencedirect.com
ScienceDirect
Annals of Diagnostic Pathology 12 (2008) 165–170
Annals of DIAGNOSTIC PATHOLOGY

Calcifications in prostate and ejaculatory system: a study on 298 consecutive whole mount sections of prostate from radical prostatectomy or cystoprostatectomy specimens

Jae Hee Suh, MD[a,b], Jerad M. Gardner, MD[a], Keun H. Kee, MD[a,c], Steven Shen, MD[a], Alberto G. Ayala, MD[a], Jae Y. Ro, MD[a,*]

[a]*Department of Pathology, The Methodist Hospital, Houston, TX 77030, USA*
[b]*Department of Pathology, Ulsan University Hospital, Ulsan 682-060, Korea*
[c]*Department of Pathology, Chosun University Medical College, Gwangju 501-717, Korea*

Abstract Although calcifications in the prostate are a common manifestation, the relationship between calcifications and prostate cancer is not clearly documented as in breast cancer. In addition, anatomical distribution of calcifications by zones of the prostate and ejaculatory system has not been systematically studied. To study the frequency and patterns of calcifications within the prostate and ejaculatory system, we reviewed the whole mount sections of 298 consecutive prostatectomy or cystoprostatectomy specimens. Calcifications were evaluated in the prostate (central, peripheral and transition zones, and verumontanum), ejaculatory ducts, and seminal vesicles. We graded the degree of calcifications as mild, moderate, or severe. Calcifications in the prostate and ejaculatory system were common, and their frequency in our series is as follows: 88.6% (264/298) of prostates, 58.1% (173/298) of seminal vesicles, and 17.1% (51/298) of ejaculatory ducts. The prostatic calcifications occurred mostly in benign glands and/or stroma of all zones and the verumontanum. Calcifications were more common in the transition zone than other zones. There were 4 cases of prostatic calcifications in the areas of prostatic adenocarcinoma: 3 cases with calcifications in the tumor glands and 1 case with calcifications in tumor stroma but not in the accompanying tumor glands. In conclusion, calcifications are a very common finding in prostatectomy specimens and seem mostly to be associated with benign prostatic hyperplasia. However, calcifications can occur in direct association with prostatic adenocarcinoma, although the incidence of this association is not as high as in breast carcinoma. Also, ejaculatory system calcifications are not an infrequent finding.
© 2008 Elsevier Inc. All rights reserved.

Keywords: Prostate; Seminal vesicles; Ejaculatory ducts; Calcifications

1. Introduction

During routine histologic evaluation of prostatectomy specimens, we frequently encountered calcifications in the prostate and ejaculatory system. Occasionally, the degree of calcifications would be severe enough to hamper histopathologic sectioning, so that slight decalcification was needed.

Calcifications in the prostate can be seen in the form of a calculus or microcalcifications and may have clinical significance: (1) they may be misinterpreted as carcinoma; (2) they may cause prostatitis and pain; (3) they may cause injuries in the prostatic parenchyma when manipulation is performed; (4) they may cause bladder neck obstruction; and (5) they may pose other difficult diagnostic and therapeutic problems [1,2]. Because calculi can be relatively large and sometimes symptomatic, they have been a subject of interest in clinical and radiologic fields and are relatively well described in the literature [2–5]. Although there are some radiologic-histologic correlation studies on the topic of

* Corresponding author. Tel.: +1 713 441 2263; fax: +1 713 793 1603.
E-mail address: jaero@tmh.tmc.edu (J.Y. Ro).

1092-9134/$ – see front matter © 2008 Elsevier Inc. All rights reserved.
doi:10.1016/j.anndiagpath.2007.07.001

calcifications in the prostate with emphasis on imaging characteristics [1,6–11], comprehensive histopathologic study is very limited [12] and anatomical distribution of calcifications by zones of the prostate and ejaculatory system has not been systematically studied. In addition, the relationship between calcifications and prostate cancer has not been clearly documented as in breast cancer. These factors prompted us to perform this study, which aims to evaluate the distribution, frequency, and pattern of calcifications in the prostate and ejaculatory system.

2. Materials and methods

2.1. Study materials

We reviewed whole mount sections of a consecutive series of 298 prostate glands and seminal vesicles from radical prostatectomy (282 cases) or radical cystoprostatectomy (16 cases) specimens due to prostate and/or urinary bladder cancers in the Methodist Hospital, Houston, TX, from 2004 to 2006 (Table 1). The specimens included 284 cases of prostate with adenocarcinoma (280 cases of 282 radical prostatectomy and 4 cases of 16 cystoprostatectomy) and 14 cases of benign prostate. Of 282 radical prostatectomy specimens, there were 2 cases without adenocarcinoma in the whole mount sections of the prostates. Among the 16 radical cystoprostatectomy specimens, 4 specimens had both transitional cell carcinoma of the urinary bladder and adenocarcinoma of prostate. Patient age ranged from 39 to 79 years (mean, 61.5 years).

2.2. Specimen processing and evaluation

The specimens, consisting of prostate and seminal vesicles en bloc, were fixed in 10% formalin for at least 24 hours. After inking, portions of apex and bladder neck were removed and processed like a cervical cone biopsy for evaluation of apical and bladder neck surgical margins. The remainder of the prostate was sectioned sequentially in the transverse plane at 0.5-cm intervals and submitted for large-block sectioning. Seminal vesicles were removed and were also sequentially sectioned and entirely submitted for histologic examination. One to three sections of each paraffin block were made and stained with hematoxylin and eosin. The prostate from radical cystoprostatectomy specimens was separated from the bladder and examined as described above. For each case, the prostate gland was histologically evaluated according to the anatomical zones and structures (central, peripheral, and transition zones, verumontanum, ejaculatory ducts). Seminal vesicles were evaluated separately. Calcifications were seen as amorphous, deeply basophilic, crystalloid materials. In each of the

Table 1
Specimens and number of cases

Specimens	No. of cases (percentage)
Radical prostatectomy specimen	
Hormone-untreated	278 (93.3)
Hormone-treated	4 (1.3)
Cystoprostatectomy specimen	
Bladder transitional cell carcinoma and prostatic adenocarcinoma	4 (1.3)
Bladder transitional cell carcinoma	12 (4.0)
Total	298 (100)

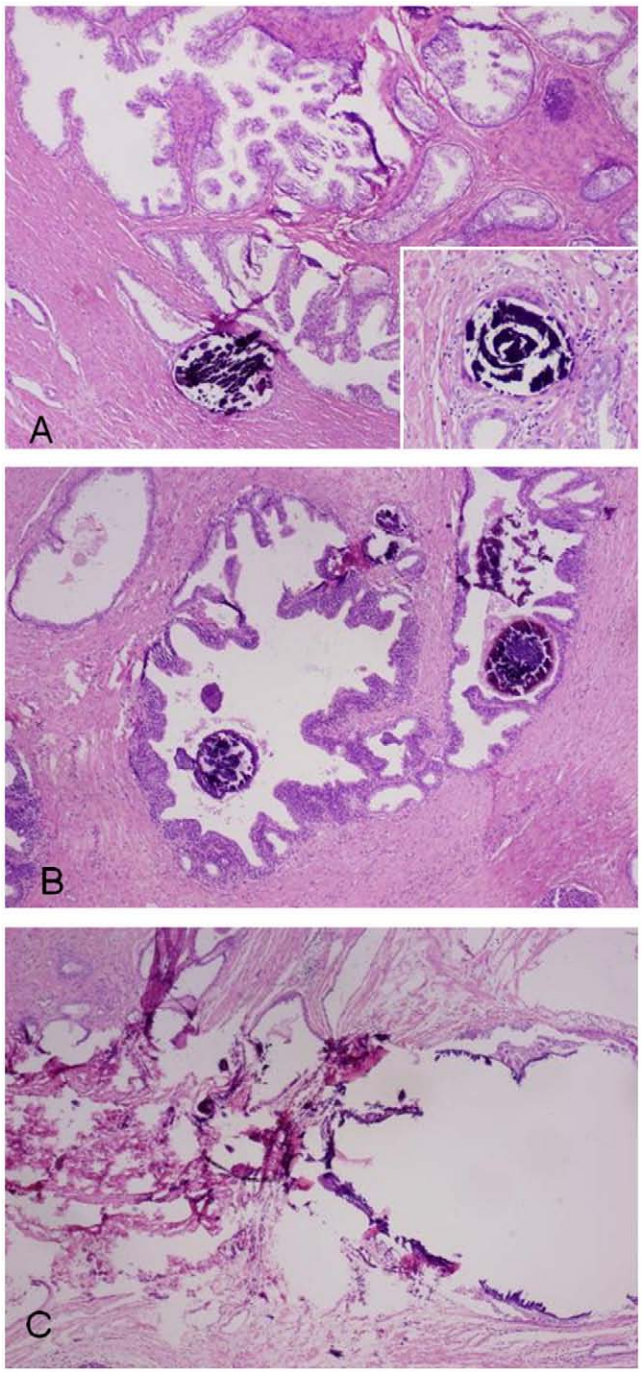

Fig. 1. Patterns and degrees of calcification in benign prostatic tissue: (A) mild calcification in prostatic gland and stroma (inset); (B) moderate calcification in prostatic glands; (C) severe calcification with section damage.

Download English Version:

https://daneshyari.com/en/article/4130656

Download Persian Version:

https://daneshyari.com/article/4130656

Daneshyari.com