

Coexistence of a Hemorrhagic Cyst and Carcinoma in the Prostate Gland

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This report details a case of prostatic carcinoma coexisting with a hemorrhagic cyst in a 66-year-old man; this combination was a challenge for diagnosis and management. The patient presented with lower urinary tract symptoms and a serum prostate-specific antigen (PSA) level of 33.3 ng/ml. Magnetic resonance imaging of the prostate showed a cystic mass with soft-tissue density and hemorrhage. Histological examination of the suprapubic prostatectomy specimens showed nodular hyperplasia with focal adenosis, high-grade prostatic intraepithelial neoplasia, a Gleason score of 6 for prostatic carcinoma, and a hemorrhagic cyst which appeared to be nonmalignant. We suggest that elevated serum PSA should raise the suspicion of coexisting malignancy in a hemorrhagic cyst. (*Chang Gung Med J* 2005;28:264-7)

Key words: hemorrhage, cyst, prostate neoplasm, prostatectomy.

Carcinoma of the prostate gland is now recognized as one of the principal medical problems confronting the male population of the world. Carcinoma of the prostate may have a variety of imaging appearances, and it is typically seen as a solid hypoechoic lesion in the peripheral zone of the gland.⁽¹⁾ Prostatic carcinoma presenting as a cystic rather than a solid lesion is rare, and most prostatic cystic lesions are benign. Spontaneous hemorrhage of a prostate cyst can result in an elevated level of serum prostate-specific antigen (PSA). Nevertheless, high PSA levels should raise a high suspicion of malignancy other than only with prostate cysts. In this report, we present a case of a spontaneous hemorrhagic cyst coexisting with prostate cancer.

CASE REPORT

A 66-year-old man visited the Department of Urology in March 2002 with the chief complaint of

lower urinary tract symptoms (LUTS). He had a high serum PSA of 33.3 ng/ml. Serial blood tests for PSA in the previous 6 months at approximately 60-day intervals showed values of 44.2, 37.1, and 33.5 ng/ml, respectively. He denied having any trauma history or having previously received any urologic procedures. On the digital rectal examination, a firm, hen-egg-sized mass was palpable. Transrectal ultrasound (TRUS) of the prostate revealed a large cystic lesion with a mass in the left lobe of the prostate (Fig. 1). The magnetic resonance imaging (MRI) study showed a 6.3-cm well-defined mass in the cul-de-sac with both high- and low-signal components, suggestive of a prostate tumor with blood clots (Fig. 2). A TRUS-guided sextant prostatic needle biopsy of the prostate and cystic wall showed benign hyperplasia and focal pigment-laden macrophages, while the aspirated cystic content revealed old liquefied blood. Transurethral resection of the prostate was performed for the persistent LUTS. The pathology of

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Fig. 1 Transrectal sonography of the prostate showing a cystic lesion (arrow) with nodularity (arrowhead).



Fig. 2 MR imaging demonstrating the hemorrhagic cyst located in the left posterolateral aspect of the prostate and distortion of the left seminal vesicle.

the resected prostate tissue showed benign prostate hyperplasia but was negative for malignancy. Three months later, his serum PSA was still high (32.3 ng/ml), and the cystic mass persisted. Even though prostate carcinoma was highly suspected, the patient refused a repeat biopsy or a radical prostatectomy. Thus, only exploration with a suprapubic prostatectomy was performed. There was a cystic mass arising from the left lobe of the prostate, which compressed the seminal vesicle. Histopathologic examination of the prostatectomy specimens showed nodular hyperplasia with areas of dilated acini around a cyst measuring up to 6 cm in its greatest diameter. The cyst was hemorrhagic and lined with flattened prostatic glandular epithelia. An infarction was noted in its adjacent hyperplastic nodules. An area of high-grade prostatic intraepithelial neoplasia (HGPIN), and several small foci of adenocarcinomas with a Gleason score of 6 (Gleason grade 3+3) were seen in the bilateral lobe near the region of the hemorrhagic cyst (Fig. 3). Clinical staging was determined to be T2N0M0. He received 4 weeks of androgen deprivation therapy with cyproterone acetate followed by radiotherapy. Computed tomography showed shrinkage of the prostate and no cystic lesions. His serum PSA dropped to 0.06 ng/ml, and has remained at this low level to the time of this writing.

DISCUSSION

Most prostatic cystic lesions are benign; they include a simple retention cyst of the prostate, ejaculatory duct cysts, prostate cystadenoma, and prostatic hyperplasia with cystic degeneration and/or prostatic abscess.⁽²⁻⁴⁾ Prostatic carcinoma presenting as a cystic rather than a solid lesion is rare. Cystic carcinoma of the prostate occurs as a predominantly cystic mass with wall nodularity, and the solid wall components pathologically represent the tumor.⁽⁵⁾ An MRI study can show the cystic contents and extent of the lesions as was demonstrated in our case. Henry and Blanc hypothesized the pathogenesis of cystic prostatic carcinoma as either associated with a pseudocyst due to central necrosis or hemorrhage in the prostatic cancer focus or with malignant degeneration of a retention cyst.^(6,7) Most of the reported cystic carcinomas were pseudocysts with hemorrhage, and only 17% of these cystic carcinomas came from degeneration of a retention cyst.⁽⁸⁾ In cystic lesions of the prostate, the presence of blood in a prostatic cyst should raise a suspicion of malignancy.^(8,9)

The histopathology in our case presented nodular hyperplasia with cystic degeneration and hemorrhage, and focal adenocarcinomas in the hyperplastic glands. The exact relationship between the elevated PSA and prostate carcinoma in this case was not

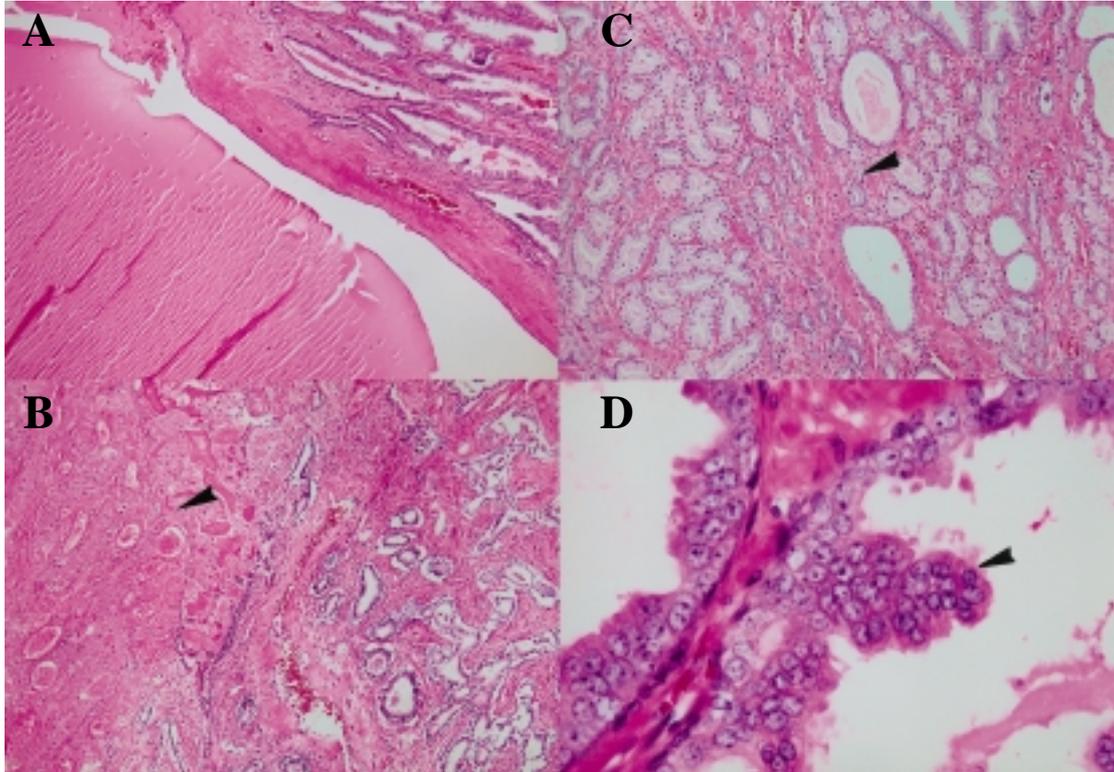


Fig. 3 Histology of the prostatectomy specimen showing (A) cystic nodular hyperplasia (40 \times), (B) an infarct (arrowhead, 40 \times), (C) adenocarcinoma of Gleason grade 3 (arrowhead, 100 \times), and (D) high-grade prostatic intraepithelial neoplasia (HGPIN) (arrowhead, 400 \times).

clear, as it might have only been due to the hemorrhaging in the cyst. In evaluating cystic prostate lesions, elevated serum PSA levels indicate their prostatic origin but are not suggestive of malignancy, because hemorrhage of the prostate gland itself can result in high PSA levels. Aspiration cytology of the cystic contents cannot offer an accurate diagnosis.^(5,8,10) In the present case, we found no malignancy in the cyst or its wall. However, there was histopathological evidence of focal adenocarcinomas and HGPIN in the hyperplastic glands. We suggest that in a situation when an elevated serum PSA level and blood in a prostatic cyst are found, a malignancy should be suspected in the lesion of an independent hemorrhagic nonmalignant cyst.

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前列腺出血性囊腫合併前列腺癌

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我們報告一例前列腺癌病患合併出血性囊腫，診斷上充滿挑戰性。66 歲男性因下泌尿道症候就診，其血中前列腺特異抗原 (PSA) 為 33.3 ng/ml。前列腺核磁共振發現前列腺囊腫出血，病理組織檢查為前列腺增生、高度前列腺上皮內腫瘤、葛利森 6 分前列腺癌以及一良性出血性囊腫。我們建議當血清 PSA 上升時，除了出血性囊腫外亦不要忽略前列腺癌的存在。(長庚醫誌 2005;28:264-7)

關鍵字：出血，囊腫，前列腺腫瘤，前列腺切除術。

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