

# Giant Retrovesical Ectopic Prostate Tissue: A Case Report and Review of the Literature

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#### Abstract

We report an unusual case of retrovesical ectopic prostate tissue in a 71-year-old man, whose prostate-specific antigen was 10.20 ng/ml. Transabdominal ultrasonography, pelvic computed tomography showed a heterogeneous, solid-cystic, 8 cm × 8.8 cm × 8.5 cm mass in contact with the posterior wall of the bladder. The patient underwent a laparoscopic pelvic neoplasm resection. Pathological examination confirmed the retrovesical tumor was normal prostate tissue.

**Keywords:** Ectopic tissue; Prostate; Pathogenesis; Retrovesical space; Surgical resection

## Introduction

Ectopic prostate tissue is a relatively uncommon disease, and most of them were found in the lower male genitourinary tract [1]. However, the ectopic prostate tissue suited in the retrovesical space is rare. Until now, to our knowledge, only about 10 cases of retrovesical ectopic prostate tissue have been published [2-4]. Here we describe a rare case of giant retrovesical ectopic prostate tissue with detailed clinical data.

## **Case Report**

A 71-year-old man suffered from constipation about 1 year. He didn't have other symptoms and his medical, personal, and family histories were unremarkable.



**Figure 1:** Pelvic computed tomography demonstrated a heterogeneous, solid-cystic, contrast-enhanced mass which diameter is about 8.5 cm in the retrovesical space.

Abdominal related examination found a tumor in his pelvic cavity accidentally. Because of this, the patient was admitted to the urology department of our hospital. By digital rectal examination, a solid, elastic and painless mass was found in the right side of prostate. Transabdominal ultrasonography showed a heterogeneous tumor in the pelvic cavity, but couldn't confirm the source of the tumor. Pelvic computed tomography demonstrated a heterogeneous, solid-cystic, contrast-enhanced mass with diameter about 8.5 cm in the retrovesical space, and could not be separated from right seminal vesicle (Figure 1). The level of the prostate-specific antigen (t-PSA) was higher than normal. The total prostate-specific antigen (t-PSA) was 2.68 ng/ml. After the diagnosis of pelvic mass was made, laparoscopic pelvic neoplasm resection was performed on December 03, 2014.



Figure 2: Image in laparoscopic surgery, show a well encapsulated round tumor.

During the surgery, after opening pelvic fascia, a well encapsulated round tumor was found behind the bladder (Figure 2).

The tumor was well-defined and separated from surrounding tissue easily, except a little tight adhesion with right seminal vesicle. The resected tumor was measured 8 cm  $\times$  6 cm  $\times$  5 cm, and contained turbid fluid. Pathological examination confirmed the mass was benign prostate tissue (Figure 3).



Figure 3A: Gross photograph of the 8 cm  $\times$  6 cm  $\times$  5 cm retrovesical mass.



**Figure 3B:** High power view show normal prostate glands tissue (H&E stain).

The patient recovered well and discharged 5 days after surgery. One month later, the patient came back for follow-up. His constipation was cured after surgery and urinary function was normal. The transabdominal ultrasonography showed the prostate measured 4.5 cm  $\times$  3.2 cm, and no abnormity was found in the pelvic cavity. Compared with the preoperative level, PSA declined. The TPSA was 1.2 ng/ml and CPSA was 0.79 ng/ml.

# Discussion

Nicholson reported the first case of ectopic prostate tissue [3], which was a 5.7 cm mass located on the lower part of patent uracil remnant. Since then, many cases of ectopic prostate tissue had been reported. Most of the cases occurred in the genitourinary tract, such as the urethra, with the symptoms of hematuria, dysuria [2]. In addition, ectopic prostate tissue was also found in seminal vesicle, testis, epididymis, even in woman cervix and vagina [3]. Relatively, retrovesical ectopic prostate tissue has been reported rarely [2-4]. For now, only about 10 cases of ectopic prostatic tissue situated in the retrovesical space have been published [2]. The ectopic prostate tissue could also be malignant transformation. The first case of adenocarcinoma arising within ectopic prostatic tissue was reported in 1993, which was a 72-year-old man, during his prostate cancer radical

prostatectomy, finding a 3.2 cm nodule at perirectal. The nodule was distinct from the prostate and pathological examination postoperative identified it contained both benign prostate glands and prostate adenocarcinoma [3].

It is still unclear the pathogenesis of ectopic prostate tissue, but various theories have been postulated. First theory is the remnant of embryonic prostate tissue. The tubular buds growing out from the urethra and forms the original prostate tissue in about twelfth week of gestation. Further, the mesonephric ducts, which form the bladder trigone and urethra, have incorporated into the developing prostate and form the structures of the ejaculatory system [3]. Considering the prostate glands has normally appeared in prostatic urethra and bladder trigone in the embryogenesis, the ectopic prostate tissue in these lesions perhaps are due to the remnant of the embryonic prostatic glands [5]. The pathogenesis of other areas ectopic prostate tissue can be explained by metaplasia or migration [6]. Metaplasia was the result of transitional epithelium transformed to glandular epithelium in response to chronic inflammation, which usually occur in the urinary tract. Migration may be due to the hormonal stimulation in adult life, leading to an abnormal migration of undifferentiated embryonic prostatic tissue. In our case, ectopic prostate tissue suited in the retrovesical space, where prostatic glands are not found in any stage of development. The most possible reason may be due to the embryonic prostatic tissue migrated and isolated outside the urinary system [7].

To make a definite diagnosis of the retrovesical ectopic prostate tissue before surgery is difficult. The imaging examination can only help us clear the location of mass, but can't confirm the type of the tumor exactly. Takashi Hamasaki et al. had done needle biopsy guided by transrectal ultrasound in 3 retrovesical ectopic tissue patients, which diagnosed preoperative successful [4]. In our case, elevated t-PSA level had been ignored. In combination with the descending t-PSA level postoperatively, we conclude the abnormal of t-PSA could be explained by ectopic prostate tissue itself. Thus, when we meet unclear retrovesical mass, or other mass which is not at normal prostatic epithelium normal distribution with a high PSA level, we should consider the possibility of ectopic prostate tissue. Except an imaging examination, needle biopsy by ultrasound may need to diagnose and exclude the possibility of malignant transformation meanwhile.

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