

Running title: Ectopic prostatic tissue of the paracolic gutter

Ectopic prostatic tissue in the right paracolic gutter: A case report

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Key words: Ectopic prostatic tissue; Extragenitourinary tract; Paracolic gutter

INTRODUCTION

Ectopic prostatic tissue (EPT) is fairly uncommon; however, when reported, it is most often found in the male genitourinary tract. Since extragenitourinary EPT is very rare, it is extremely difficult to properly diagnose preoperatively.⁽¹⁻³⁾ This article describes a unique case of EPT found in the right paracolic gutter.

CASE REPORT

A 73-year old man with a 6-year history of hepatocellular carcinoma (HCC) showed a 1.7-cm-sized hyperenhancing mass in the right paracolic gutter in follow-up abdominal computed tomography (CT) (**Figure 1**). He had been treated with transarterial chemoembolization and radiofrequency ablation without surgery. Follow-up abdominal CT revealed a newly noted mass in the right paracolic gutter, which was suspicious of metastatic HCC and necessitated surgical resection.

Gross examination showed a relatively well-demarcated nodule with partly cystic appearance (**Figure 2**). Microscopic examination showed a nodule full of simple, dilated glandular structures with corpora amylacea present in several of the glandular lumina. The background stroma showed a fibrous to partly loose appearance with bland, spindled cells (**Figure 3a**). The glands had both a luminal and a basal layer of cuboidal to columnar cells, reminiscent of a benign hyperplastic prostatic epithelium. Prostatic-specific antigen immunostaining showed strong, diffuse positivity in the luminal cells that further confirmed the prostatic nature of the nodule (**Figure 3b**).

DISCUSSION

Review of the literature revealed few reports of EPT outside the genitourinary tract including the rectum, presacral or perirectal fat, anal canal, spleen, and cervix.⁽⁴⁻⁷⁾ EPT within or near the gastrointestinal (GI) tract has a left-side preference, especially in the anorectal region. To the best of our knowledge, there are no published reports describing an EPT on the right colon.

There are three hypotheses regarding the pathogenesis of EPT.⁽⁸⁾ One is faulty embryogenesis, as both the rectum and bladder originate from the endodermal cloaca. When morphogenetic organization fails in the dorsal cloacal compartment, which is destined to become the rectum, the tissue retains the ability to produce anterior cloacal structures, which later forms the bladder, urethra, and prostate. A second hypothesis is aberrant location of prostatic stromal tissue, which is thought to induce the local epithelium to differentiate into prostatic epithelium.⁽⁹⁾ The third hypothesis is based on seeding of viable

prostatic tissue during surgery or biopsy of the prostate, which is mostly conducted in a transurethral or transrectal manner. No single hypothesis has been confirmed or explains the location of EPT in the right paracolic region with no previous history of biopsy or surgery of the prostate.

In our case, pathologic confirmation of EPT was important in determining further treatment and prognosis. Preoperative diagnosis of EPT outside the urinary tract is extremely difficult; however, correct diagnosis is crucial to avoid malignant transformation.⁽⁵⁾ Although Halat et al. reported similar pathologic findings of 80% of EPT cases to those of the central zone of the prostate,⁽¹⁾ our case showed features reminiscent of the peripheral zone of the prostatic gland. There were no signs of dysplastic or malignant change in our case.

Since there is no explanation for the location of EPT in our case, more cases should be collected, and further studies should be conducted. In conclusion, misdiagnosis of EPT may lead to unneeded treatment and patient anxiety; therefore, proper suspicion and correct diagnosis are important.

ACKNOWLEDGEMENT

This study was approved by the Institutional Review Board of Korea University Anam Hospital (IRB No. 2018AN0171).

CONFLICT OF INTEREST

No potential conflicts of interest relevant to this article are reported.

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Figure 1. Axial contrast-enhanced CT of the abdomen and pelvis (portal phase). An incidental lesion was found in the right paracolic gutter area during follow-up after HCC treatment. In the next follow-up examination, the size was slightly increased, and the operation was performed under suspicion of HCC metastasis.

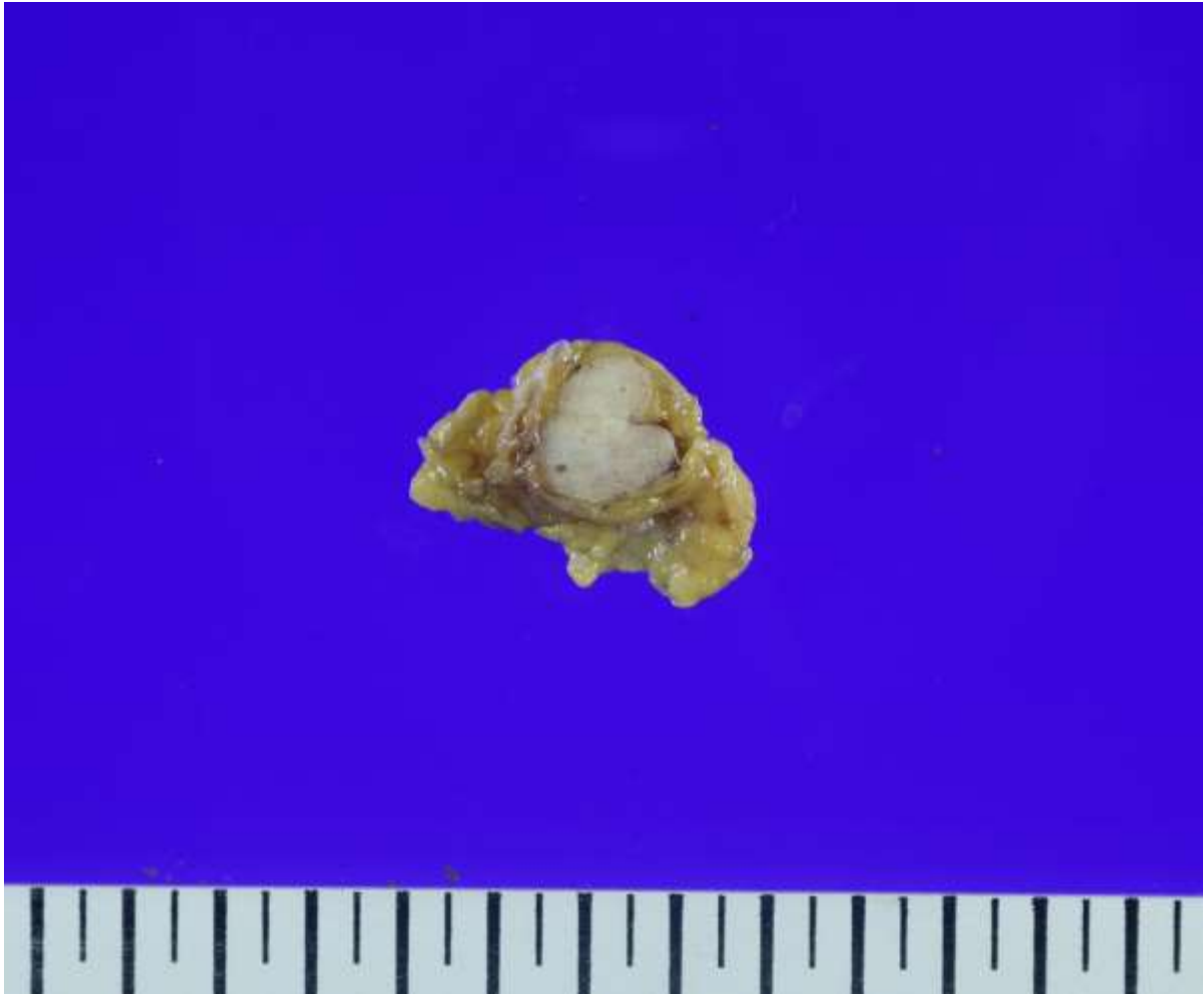


Figure 2. After serial section of the fibroadipose tissue, the cut surface shows a relatively well-demarcated white-colored mass with multiloculated cystic spaces, measuring 1.6 x 1.4 cm.

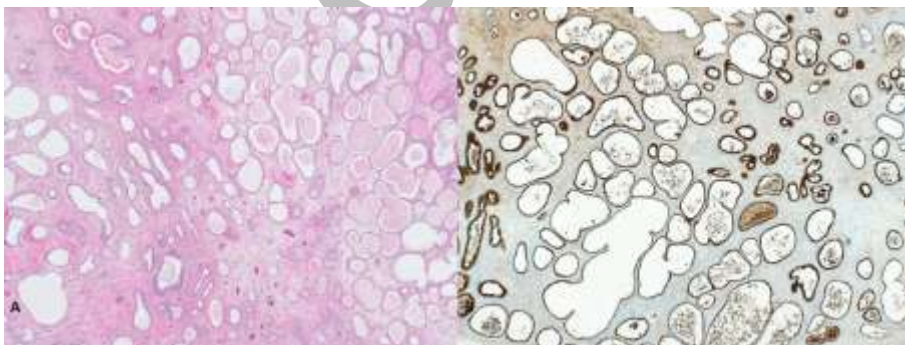


Figure 3. Prostate glands are composed of a distinct luminal epithelial cell layer and a basal cell layer (H&E, x40) (a). Prostate glands show strong, diffuse, immunopositive staining for prostate-specific antigen (PSA) (H&E, x40) (b).