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### Ectopic prostatic tissue at the rectum presenting as a submucosal tumor: A case report

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#### ABSTRACT

Ectopic prostate tissue (EPT) is an uncommon presentation and has been found mainly in the male urinary tract, such as the bladder, urethra, seminal vesicles, and testis. There have been extremely few cases of EPT observed out of the genitourinary tract. The present article describes one rare case of a 78-year-old male with an incidental finding of a rectal submucosal tumor, which was completely resected with a pathological diagnosis of EPT.

**Keywords:** Ectopic prostatic tissue; Colorectal tumor

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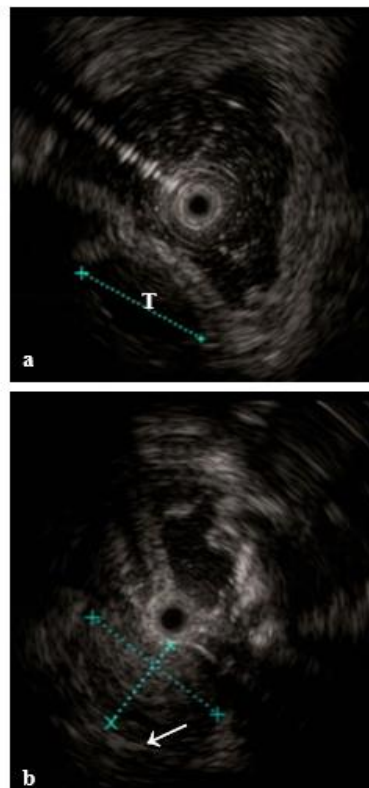
## Introduction

Ectopic prostate tissue (EPT) is defined as a prostatic tissue occurring in an abnormal position outside of the prostate, and it is an unusual finding that is most commonly observed in the lower urinary tract, with only a few cases of EPT outside of the urinary system<sup>[1-5]</sup>. In our opinion, extremely few cases of rectal or perianal

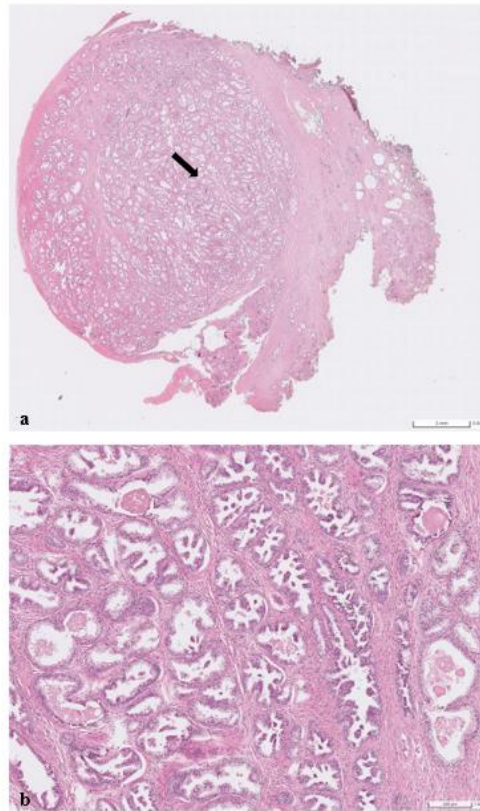
EPT have been reported. The present article describes a unique case of a 78-year-old man with a rectal subepithelial mass lesion of EPT, which was rare and difficult to diagnose without a pathological result, even after undergoing a preoperative series of physical or image examinations.



**Fig. 1.** Colonoscopic image revealed a 1.5 mm firm, ovoid bulging mass over the anterior rectal wall, located about 4 cm from the anal verge.



**Fig. 2.** EUS image disclosed a rectal subepithelial tumor (T) involving the muscularis propria layer, three overlying intact layers (2a) and the serosa layer beneath with irregular contour (arrowhead in 2b).



**Fig. 3.** Histopathologic presentation of a surgical specimen composed of prostate-like glands in the stroma (arrowhead in 3a). Many glands are cystically dilated and rich in eosinophil and lamellar materials (corpora amylacea) (3b).

### Case report

A 78-year-old male with a history of left tonsillar squamous cell carcinoma, which underwent tumor-wide resection and left neck dissection, rectal polyps of tubulovillous adenoma received polypectomy, and follow-up colonoscopies every one to three years. This time, a new rectal tumor was incidentally found during a regular endoscopic inspection, which revealed a 1.5 cm firm, round submucosal mass over the anterior rectal wall, located about 4 cm from the anal verge (Fig. 1). The patient did not exhibit any specific symptoms, such as tenesmus, anal pain, rectal prolapse sensation, bloody or tarry stool, abdominal pain or tenderness, or constipation or

body weight loss. Because of the atypical morphology of rectal tumors compared to general polyps, endoscopic ultrasonography (EUS) was arranged for further evaluation. This revealed that the rectal subepithelial mass involved the muscularis propria layer, three overlying intact layers (epithelium, basement membrane, subcutaneous), and the serosa layer beneath with irregular contour. The border of this lesion was discrete, and its estimated size was 14.7 mm, with a height of 9.1 mm (Fig. 2). The patient received transrectal surgical excision of the tumor, and the specimen was whitish, pinkish, and elastic, consisting of three tissue fragments. Under a microscope, the sections of the defined

nodule were composed of prostate-like glands in a stroma rich in smooth muscle fibers. Many glands are cystically dilated and contain eosinophil and lamellar materials (corpora amylacea) (Fig. 3). Immunohistochemical staining of tumor epithelial cells disclosed positive for prostate-specific antigen, which represented the EPT of the rectal wall.

## Discussion

EPT has been found mainly in the bladder, urethra, seminal vesicles, and testis. Clinically, it usually causes lower urinary tract symptoms, such as hematuria, frequency of urination, urgency, and urinary retention<sup>[1-5]</sup>. EPT outside the urinary tract is rare and commonly asymptomatic. The etiology of EPT is not entirely clear, and several theories have been proposed to elucidate this pathological phenomenon. In terms of embryologic anatomic development, the terminal part of the hindgut is the cloaca, which is divided by the urorectal septum. The ventral part of the cloaca develops into the bladder, prostatic, and penile urethra in males, while the dorsal part develops into the rectum and anal canal. The prostate glands lie at the bottom of the bladder and in front of the rectum, and the migration of normal prostate tissue during organ development or mature status seems the most likely theory. Another hypothesis includes abnormal embryogenesis or divergent differentiation, but none of these theories have been certainly confirmed<sup>[6-8]</sup>.

Cases of EPT outside the urinary tract are few, which are hard to be preoperatively distinguished and diagnosed using image

exams, such as colonoscopy or computed tomography. Magnetic resonance imaging (MRI) is considered more sensitive to detect EPT, but a further histologic report is still necessary for diagnosis<sup>[6]</sup>. When EPT is encountered, prostate-specific antigen (PSA) and prostate-specific acid phosphatase (PSAP) are the most immunohistochemical stains to be used<sup>[9]</sup>, and P501S can also be used for detecting prostatic tissue if the above stains are inconclusive<sup>[10]</sup>.

EPT does not belong to the most common differential diagnosis in priority, and there are several differential diagnoses that should be considered, depending on tumor morphology and location. To cite an instance, rectal intramural lesions that originated in mucosal included adenocarcinoma, mucosa-associated lymphoid tissue (MALT) lymphoma, and melanoma; tumors derived from submucosal, such as gastrointestinal stromal tumor (GIST), leiomyosarcoma or duplication cyst; external perirectal lesions, including epidermoid cyst, teratoma, and tailgut cyst<sup>[11, 12]</sup>. In the present case, EUS was arranged for examination because of the highly suspected subepithelial lesion, which is thought to be a powerful evaluating and less invasive tool for colorectal diseases<sup>[13]</sup>. The image findings revealed a rectal subepithelial hypoechoic mass involving the muscularis propria layer, three separated intact layers (epithelium, basement membrane, subcutaneous) and a serosa layer with an irregular contour. Subepithelial hypoechoic cystic lesion was frequently considered a mucinous adenocarcinoma, a duplication cyst,

or a tailgut cyst. Following clinical circumstances, which included a lack of obvious symptoms and the patient's medical history, a transrectal surgical excision was recommended and carried out to perform a definitive pathological diagnosis, which ultimately led to the diagnosis of EPT. Reviewing the characteristics of EPT radiographic findings, it was found similar to the image exam results of a previous study<sup>[6]</sup>, demonstrating a poorly marginated hypoechoic mass with a partial cystic portion in the muscularis propria layer of the rectum.

The tissue of the prostate gland is divided into three types: the peripheral zone, the transition zone, and the central zone. The peripheral zone is located at the back of the prostate near the rectal wall, where 80% of prostate cancers occur in this area. The central zone surrounds the ejaculatory duct. The transition zone encircles the part of the urethra between the urinary bladder and the verumontanum, which is regarded as an enlargement seen in benign prostatic hyperplasia. Embryologically, the peripheral and transition zones both originated from the endoderm, whereas the central zone was mesodermal in origin. Previous case studies reported that 80% of EPT in the urogenital tract showed the presence of papillary and cribriforming prostatic acini, which is related to the central zone<sup>[9]</sup>, and there are also some cases related to the peripheral zone<sup>[6]</sup>. Furthermore, in our case, the histological pattern was cystically dilated and contained eosinophilic and lamellar materials (corpora amylacea), which were similar to the peripheral structure.

## Conclusion

EPT may be an important etiology of hematuria and lower urinary tract symptoms<sup>[1-5]</sup>. However, lower gastrointestinal bleeding, anal pain, tenesmus, bowel habit change, or other gastrointestinal symptoms have been rarely described because cases of EPT outside the urinary tract or even at the rectum were exceptionally rare and almost asymptomatic<sup>[14]</sup>. EPT was seldom considered a priority differential diagnosis and was challenging to preoperatively diagnose without a pathological result. Although EPT is unusual and has a good prognosis because most cases are benign and have a low recurrence rate after complete resection<sup>[15]</sup>, surgical resection is still strongly recommended owing to the incidences of malignant transformation<sup>[1, 2]</sup>.

## References

- [1]. Gardner, J.M., et al., *Adenocarcinoma in ectopic prostatic tissue at dome of bladder: a case report of a patient with urothelial carcinoma of the bladder and adenocarcinoma of the prostate*. Arch Pathol Lab Med, 2010. 134(9): p. 1271-5.
- [2]. Lau, S.K., and Chu, P.G., *Prostatic tissue ectopia within the seminal vesicle: a potential source of confusion with seminal vesicle involvement by prostatic adenocarcinoma*. Virchows Arch, 2006. 449(5): p. 600-2.
- [3]. Leifert, S., Lurie, A., and Kellner, J., *Ectopic prostatic tissue in urethra*. Urology, 1985. 26(5): p. 509-10.
- [4]. Milburn, J.M., Bluth, E.I., and Mitchell, W. T., Jr., *Ectopic prostate in the testicle: an unusual cause of a solid testicular mass on*

- ultrasonography*. J Ultrasound Med, 1994. 13(7): p. 578-80.
- [5]. Morey, A.F., et al., *Ectopic prostate tissue at the bladder dome*. J Urol, 1989. 141(4): p. 942-3.
- [6]. Myung Jin Seol, M., et al., *Ectopic prostatic tissue in the rectum: a case report*. J Korean Soc Radiol, 2017. 76(2): p. 91-95.
- [7]. Roy, C., et al., *Benign hyperplasia in ectopic prostatic tissue: a rare cause of pelvic mass*. Eur Radiol, 1997. 7(1): p. 35-7.
- [8]. Yasukawa, S., Aoshi, H., and Takamatsu, M., *Ectopic prostatic adenoma in retrovesical space*. J Urol, 1987. 137(5): p. 998-9.
- [9]. Halat, S., et al., *Ectopic prostatic tissue: histogenesis and histopathological characteristics*. Histopathology, 2011. 58(5): p. 750-8.
- [10]. Tawfic, S., Niehans, G.A., and Manivel, J.C., *The pattern of CD10 expression in selected pathologic entities of the prostate gland*. Hum Pathol, 2003. 34(5): p. 450-6.
- [11]. Kim, H., et al., *MRI findings of rectal submucosal tumors*. Korean J Radiol, 2011. 12(4): p. 487-98.
- [12]. Purysko, A.S., et al., *Benign and malignant tumors of the rectum and perirectal region*. Abdom Imaging, 2014. 39(4): p. 824-52.
- [13]. Cârțână, E.T., Gheonea, D.I., and Săftoiu, A., *Advances in endoscopic ultrasound imaging of colorectal diseases*. World J Gastroenterol, 2016. 22(5): p. 1756-66.
- [14]. Tekin, K., et al., *Ectopic prostatic tissue of the anal canal presenting with rectal bleeding: report of a case*. Dis Colon Rectum, 2002. 45(7): p. 979-80.
- [15]. Kim, J.H., Jeon, Y.M., and Song, Y.S., *Ectopic prostate tissue at the bladder dome presenting as a bladder tumor*. World J Mens Health, 2013. 31(2): p. 176-8.
- [16]. VanBeek, C.A., Peters, C.A., and Vargas, S.O., *Ectopic prostate tissue within the processus vaginalis: insights into prostate embryogenesis*. Pediatr Dev Pathol, 2005. 8(3): p. 379-85.
- [17]. Fulton, R.S., Rouse, R.V., and Ranheim, E.A., *Ectopic prostate: case report of a presacral mass presenting with obstructive symptoms*. Arch Pathol Lab Med, 2001. 125(2): p. 286-8.

