Endoscopic ultrasound with fine-needle aspiration facilitates diagnosis of metastatic iliac lymph node invasion in prostate cancer

We have recently published our pilot data on endoscopic ultrasonography (EUS) for staging prostate cancer [1]. EUS with flexible instruments has the additional potential for imaging the iliac region in the search for lymph node metastases with confirmation by EUS-guided fine-needle aspiration (FNA) in prostate cancer; this is an area that cannot be accessed with nonoptical transrectal rigid ultrasonography (TRUS) probes.

A 65-year-old man was referred with an increased prostate-specific antigen (PSA) level of 37.9 ng/mL. An abdominopelvic CT scan was normal. Transrectal EUS was performed to image the prostate and revealed a hypoechoic, round nodule in the peripheral zone of the prostate (**Fig. 1**). Multiple EUS-guided FNA passes were done using a 22-gauge needle (Wilson-Cook, Winston–Salem, North Carolina, USA). Cytopathological study showed undifferentiated adenocarcinoma. An enlarged iliac lymph node (13 mm) was seen by EUS by advancing the echoendoscope to the level of the iliac vessels (around 20 – 25 cm from the anus). Transcolonic EUS-FNA of the left iliac lymph node was done in the same exam (**Figs. 2 – 4**), and histopathology demonstrated metastatic undifferentiated prostate adenocarcinoma (**Fig. 5**).

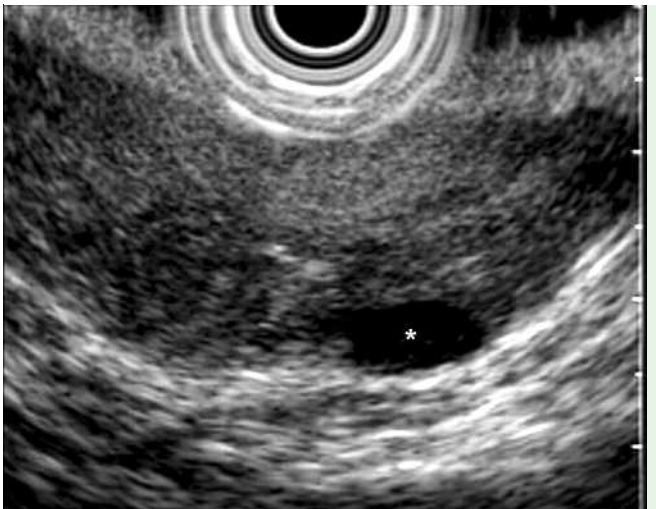

Fig. 1 Transrectal endoscopic ultrasonography (EUS) of the prostate, revealing a hypoechoic, round, and homogeneous nodule in the peripheral zone of the prostate (*).

Fig. 2 An enlarged iliac lymph node (ln). iv, Iliac vein; ia, iliac artery.

Staging techniques for prostate cancer include ultrasonography, CT, and magnetic resonance imaging (MRI). Ultrasonography, by the transabdominal, transurethral, transperineal, or transrectal route, allows characterization of the prostate parenchyma. Other techniques for local and nodal staging of prostate cancer include MRI, magnetic resonance spectroscopic imaging (MRSI), dynamic-enhanced MRI, positron emission tomography (PET), endorectal power Doppler ultrasonography, lymphotropic MRI contrast agents, and diffusion MRI [2, 3]. EUS may be another useful method for high-resolution imaging of prostate cancer [1]. Lymph node staging is an important issue in prostate cancer that directly impacts management and outcome. Digital rectal examination and TRUS are not accurate in predicting lymph node metastases [4]. A meta-analysis by Hovels et al. [5] showed a low accuracy of CT and MRI for lymph node staging of prostate cancer. We believe that there is potential for EUS with FNA to play an important, minimally invasive role in lymph node staging of prostate cancer.

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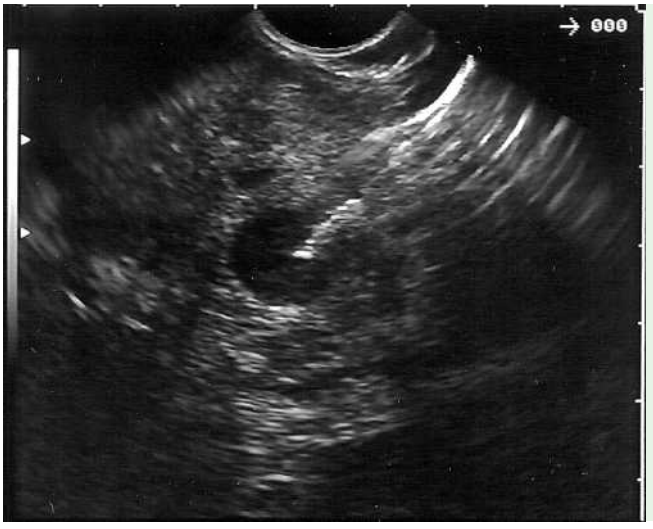

Fig. 3 EUS-guided fine-needle aspiration (EUS-FNA) of the iliac lymph node with the needle in the center of the lymph node.

Fig. 4 EUS-FNA of the iliac lymph node with the needle tip at the periphery of the lymph node.

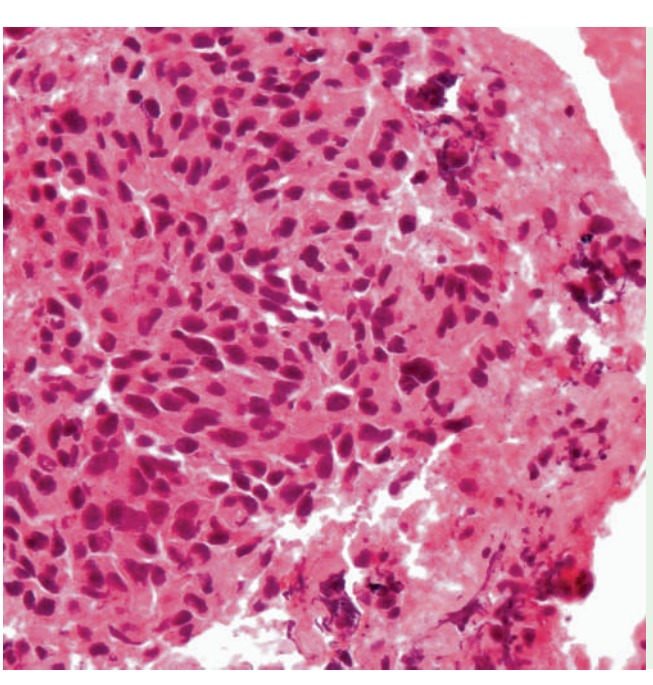

Fig. 5 Cytopathological section from EUS-FNA of the iliac lymph node, showing a metastatic adenocarcinoma with cytology similar to that of the prostate FNA.

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