Laparoscopic Port-Site Metastasis From Prostate Cancer on 18F-Fluciclovine PET/CT

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Abstract: Laparoscopic port-site metastasis from prostate cancer is a rare complication after radical prostatectomy and pelvic lymph node dissection. We report a case of port-site metastasis from prostate cancer identified on $^{18}$F-fluciclovine PET/CT for a patient with evidence of biochemical recurrence. Final pathology after targeted ultrasound and biopsy of the mass in the right abdominal wall revealed prostatic adenocarcinoma.

Key Words: prostate cancer, laparoscopic port-site metastasis, $^{18}$F-fluciclovine PET/CT

REFERENCES
FIGURE 1. Noncontrast axial CT (A), fused axial $^{18}$F-fluciclovine PET/CT (B), noncontrast coronal CT (C), and fused coronal $^{18}$F-fluciclovine PET/CT (D). We report the case of a 70-year-old man with a history of prostate cancer status post radical prostatectomy and radiation therapy. At the time of the $^{18}$F-fluciclovine PET/CT, his PSA value was 0.7 ng/mL. Increased radiotracer uptake is visualized in the right anterior abdominal wall within the internal oblique muscle, which is associated with subtle asymmetric contour deformity on the noncontrast CT (arrows). No other areas of increased radiotracer uptake are identified, including the prostatic bed. Differential considerations included benign lesion, malignant mesenchymal tumor, or atypical prostatic metastasis. The case was discussed in the Genitourinary Tumor Board, and an ultrasound and a tissue sampling were recommended.
FIGURE 2. On ultrasound, there was a lobulated solid mass in the area of concern measuring 2.2 × 1.4 × 1.0 cm that demonstrated internal vascularity. A biopsy was performed, and final pathology revealed prostatic adenocarcinoma. Prostatic adenocarcinoma is the most common cancer in males in the United States with over 174,000 estimated new cases and over 76,000 estimated deaths in 2019.1 Laparoscopic radical prostatectomy has become increasingly more common due to decreased rate of perioperative complications and quicker recovery times.2 Port-site metastasis is a rare but known complication after laparoscopic urologic surgery ranging from 0.09% to 0.73%.3 Specifically, port-site metastasis from prostatic adenocarcinoma has an even lower incidence with the first reported case documented by Larrousse et al4 in 2005. Many mechanisms have been proposed including tumor spillage, direct inoculation, tumor aerosolization, and hematogenous spread. Cases of port-site metastasis from prostatic adenocarcinoma have been described on PET/CT with the use of $^{11}$C-choline, $^{18}$F-FDG, and $^{68}$Ga-prostate-specific membrane antigen.5–9 This case highlights the advantage of $^{18}$F-fluciclovine PET/CT in evaluating suspected prostate cancer recurrence.