

FDG PET/CT of *Gardnerella vaginalis* Infection

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Abstract: We report the case of a 23-year-old woman with a history of cystic fibrosis and bilung transplantation, who presented clinically cervical swollen lymph nodes with alteration of her general state. ¹⁸F-FDG PET/CT was performed because of lymphoma suspicion and showed cervical and pelvic hypermetabolic lymphadenopathies, with linear vaginal hypermetabolism. There was an increase of lactate dehydrogenase, and Epstein-Barr virus detection was negative. A right cervical lymph node biopsy was performed, with no lymphoma involvement. Complementary microbiological investigations showed positive results for *Gardnerella vaginalis*. ¹⁸F-FDG PET/CT lymphatic node hypermetabolism is not specific to lymphoma, particularly in immunocompromised patients.

Key Words: bacterial vaginosis, FDG, *Gardnerella vaginalis*, lymphoma, PET/CT, pitfalls

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REFERENCES

1. Catlin BW. *Gardnerella vaginalis*: characteristics, clinical considerations, and controversies. *Clin Microbiol Rev*. 1992;5:213–237.
2. Marrasso JM, Fiedler TL, Srinivasan S, et al. Extravaginal reservoirs of vaginal bacteria as risk factors for incident bacterial vaginosis. *J Infect Dis*. 2012; 205:1580–1588.
3. Dawson SG, Ison CA, Csonka G, et al. Male carriage of *Gardnerella vaginalis*. *Sex Transm Infect*. 1982;58:243–245.
4. Wong YP, Tan GC, Wong KK, et al. *Gardnerella vaginalis* in perinatology: an overview of the clinicopathological correlation. *Malaysian J Pathol*. 2018;40:267–286.
5. Leitich H, Bodner-Adler B, Brunbauer M, et al. Bacterial vaginosis as a risk factor for preterm delivery: a meta-analysis. *Am J Obstet Gynecol*. 2003;189: 139–147.
6. Wilson JA, Barratt AJ. An unusual case of *Gardnerella vaginalis* septicaemia. *BMJ*. 1986;293:309–309.
7. Calvert L, Collins M, Bateman J. Multiple abscesses caused by in an immunocompetent man. *J Infect*. 2005;51:E27–E29.
8. Hoarau G, Bernard S, Pavese P, et al. *Gardnerella vaginalis* as a rare cause of prosthetic joint infection. *J Clin Microbiol*. 2012;50:4154–4156.
9. Dubreuil J, Salles G, Bozzetto J, et al. Usual and unusual pitfalls of ¹⁸F-FDG-PET/CT in lymphoma after treatment: a pictorial review. *Nucl Med Commun*. 2017;38:563–576.
10. Ding R-L, Cao H-Y, Hu Y, et al. Lymph node tuberculosis mimicking malignancy on ¹⁸F-FDG PET/CT in two patients: a case report. *Exp Ther Med*. 2017;13:3369–3373.

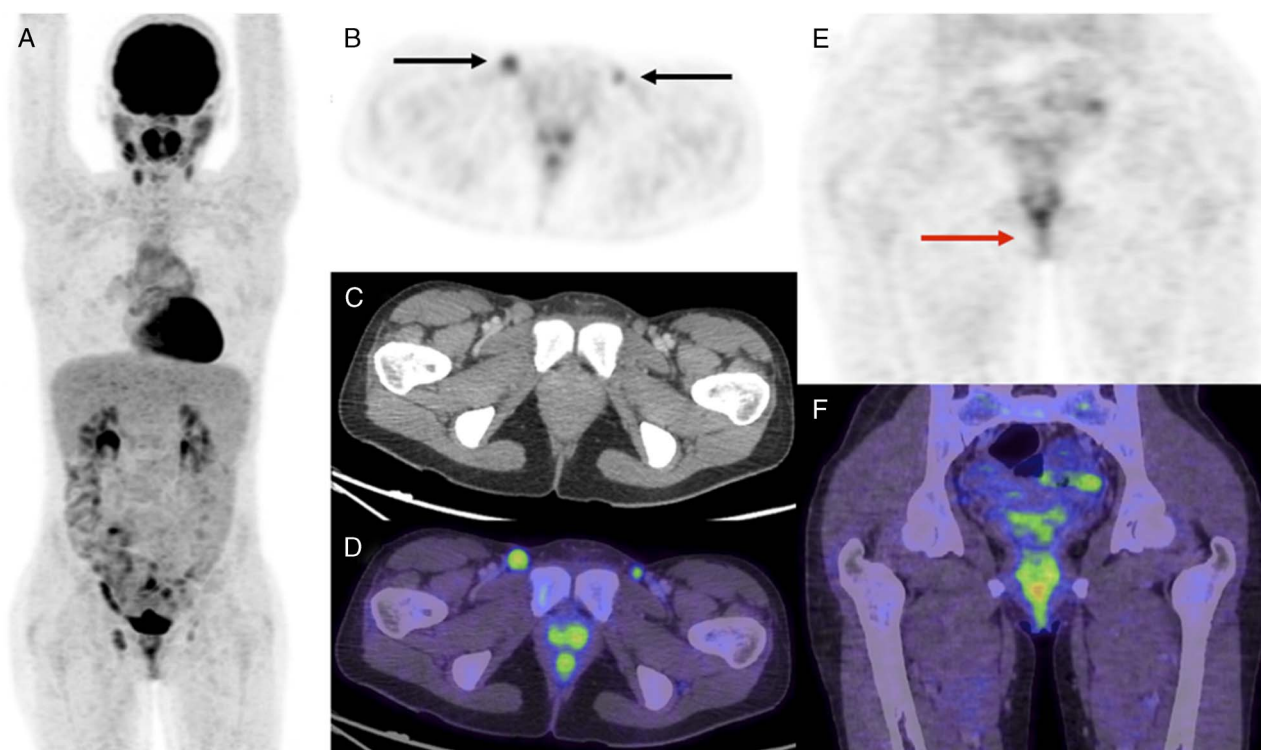


FIGURE 1. A 23-year-old woman with cystic fibrosis and bilung transplantation history presented during follow-up for cervical painful swollen lymph nodes with weight loss. Blood test showed an increased level of lactate dehydrogenase, and Epstein-Barr virus detection by polymerase chain reaction was negative. Clinical and biological presentations were suggestive of a malignant lymphoma. An ^{18}F -FDG PET/CT was performed, showing on maximum intensity projection (A) a cervical and pelvic lymphatic nodes moderate uptake. Axial slices (B–D) show inguinal nodes involvement (black arrows), with SUVmax 6.18 in the right internal obturator area. Linear hypermetabolism of the vaginal cavity was also found (E and F, coronal slices; red arrow).

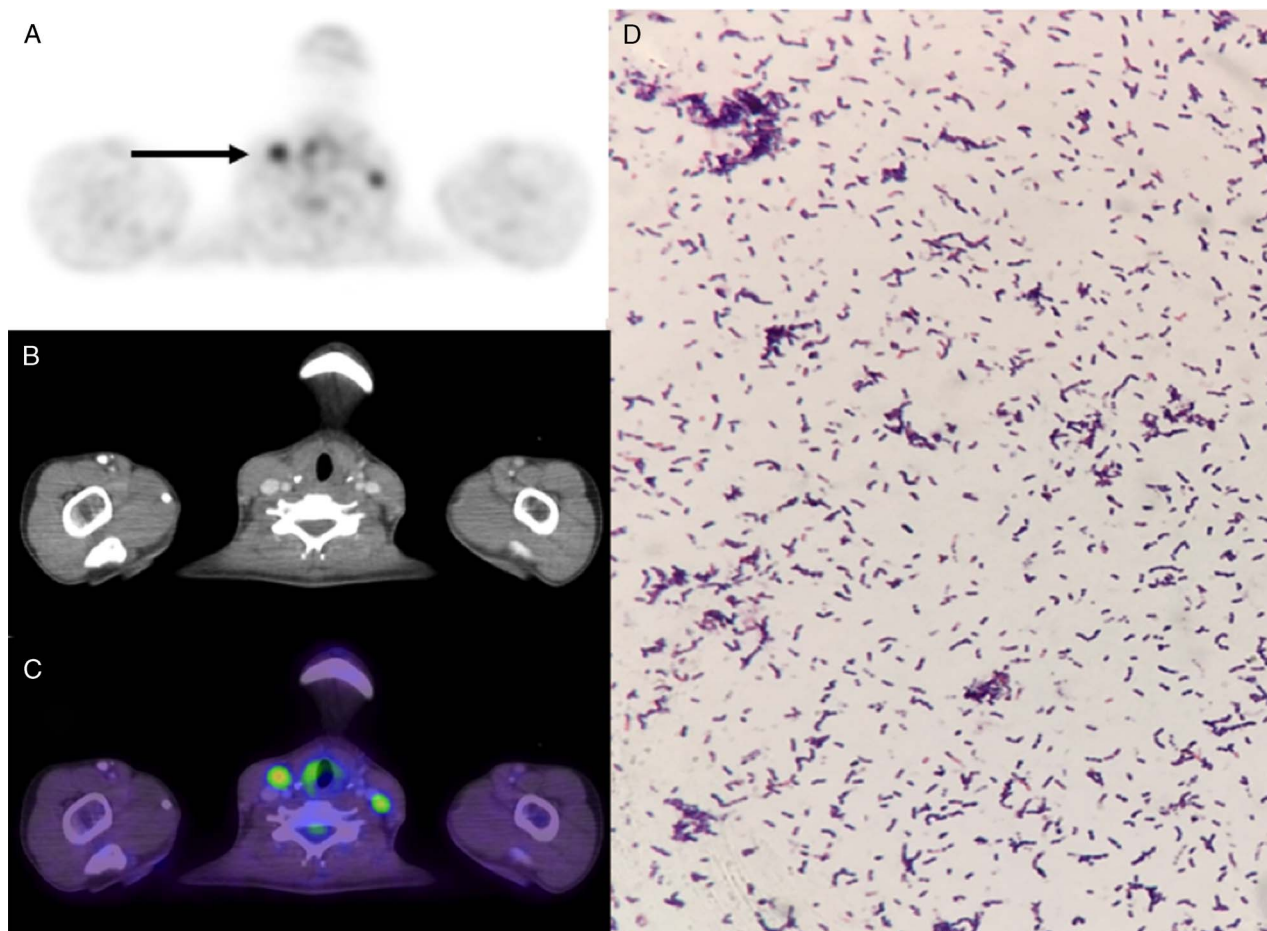


FIGURE 2. Subsequently, a right cervical lymph node (A–C) surgical biopsy was performed and did not show any lymphomatous disease. Additional bacteriological culture revealed Gram-variable bacteria (D), and polymerase chain reaction was positive at *Gardnerella vaginalis* (GV). Bacterial vaginosis was found on cervicovaginal smear, with typical clue cells and GV. An antibiotic therapy (metronidazole during 15 days) was initiated, leading to symptom resolution and clinical decrease in lymph node size. *Gardnerella vaginalis* is a facultatively anaerobic bacillus that can colonize the vaginal mucosa of women and is mainly associated with bacterial vaginosis.¹ It has also been detected in men and in extravaginal reservoirs, such as oral and rectal cavities.^{2,3} It can appear as a systemic infection especially in the context of postpartum, with well-known adverse pregnancy outcomes affecting both the woman and her newborn child.^{4,5} Less frequently, some cases of septicemia in male population^{6,7} and hip prosthesis joint infection have been described.⁸ In our patient with immunodeficiency background (cystic fibrosis, lung transplantation, and immunosuppressive therapy), GV has been spreading from the vaginal cavity to a systemic infection, with important nodal involvement. ¹⁸F-FDG PET/CT false-positive findings are well known during and after lymphoma treatment,⁹ but infection should also be considered at diagnosis, such as lymph node tuberculosis,¹⁰ particularly in immunocompromised patients.