

FALSE POSITIVE VOCAL CORD UPTAKE ON FLOURODEOXY-GLUCOSE-POSITRON EMISSION TOMOGRAPHY (FDG-PET) DUE TO TEFLON INJECTION

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PJR January - March 2020; 30(1): 46-48

ABSTRACT

OBJECTIVES: To present a case of intense right vocal cord uptake on FDG-PET secondary to a Teflon injection in a patient with history of cervical sympathectomy and right vocal cord paralysis and to review common and uncommon causes of vocal cord uptake on FDG-PET. **CASE REPORT:** This is a case of a 78-year old female with intense right vocal cord uptake on FDG-PET secondary to a Teflon injection with history of cervical sympathectomy and right vocal cord paralysis. Intense increased FDG uptake by Teflon injection is a rare and unexpected finding. The mechanism of FDG uptake by Teflon injection will be discussed. Review imaging findings as well as common and uncommon causes of vocal cord uptake on FDG-PET. **CONCLUSION:** Medialization of the paralyzed vocal cord with Teflon can induce a granulomatous reaction that causes accumulation of FDG within the abnormal cord, mimicking a metastasis or recurrent neoplasm.

Keywords: False Positive, FDG-PET, lung cancer

Introduction

In patients with lung cancer or other malignancies involving the mediastinum, it is not uncommon to observe asymmetrically increased vocal cord uptake with vocal cord paralysis on the contralateral site due to recurrent laryngeal nerve injury. The findings of increased FDG activity at the side of vocal cord paralysis are rare, as in the case presented here. The aim of this report is to present a case of intense right vocal cord uptake on FDG-PET secondary to a Teflon injection in a patient with history of cervical sympathectomy and right vocal cord paralysis and to review common and uncommon causes of vocal cord uptake on FDG-PET.

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Submitted 1 March 2020, Accepted 3 March 2020

Case Report

The patient is a 78-year-old female in Family Medicine clinic with recent Computed Tomography (CT) findings of a pulmonary nodule in the left upper lobe (Fig. 1).

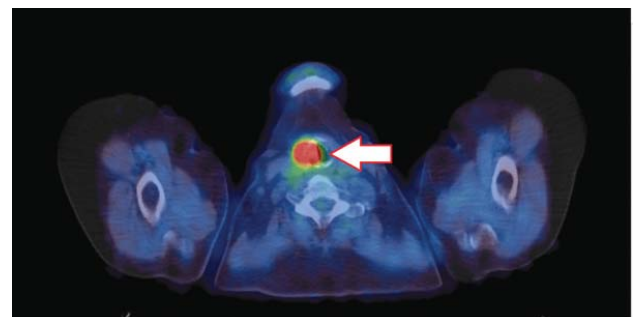


Figure 1: Axial fused PET/CT from the neck at level of vocal cords shows intense right vocal cord uptake (arrow)

On FDG-PET, there is a mildly hypermetabolic pulmonary nodule in the left upper lobe peripherally (Fig. 2), which was later biopsy proven to be an adenocarcinoma.

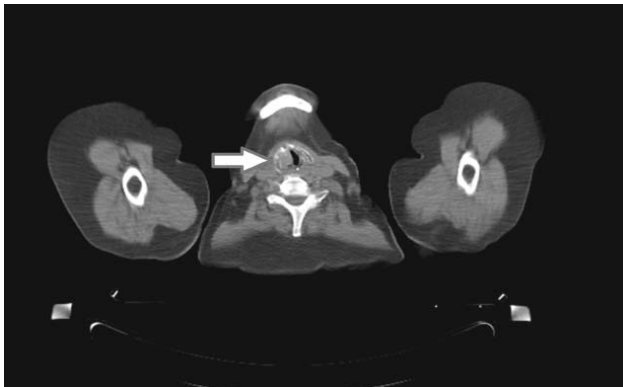


Figure 2: Axial CT demonstrate soft-tissue density in the right vocal cord

There is no lymphadenopathy in the mediastinum or hila. There is an unexpected finding of intense right vocal cord uptake (Fig. 3 & 5) with a maximum Standard Uptake Value (SUV) of 13.3, corresponding to soft-tissue density lesion on CT (Fig. 4).

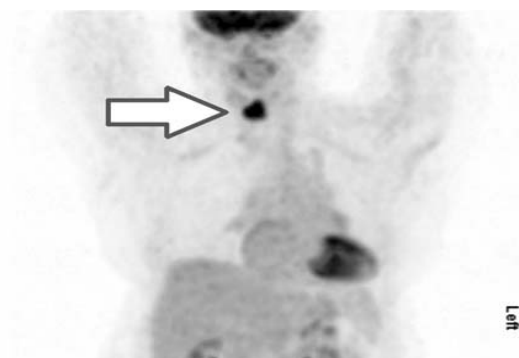


Figure 3: MIP from PET/CT shows the area of uptake

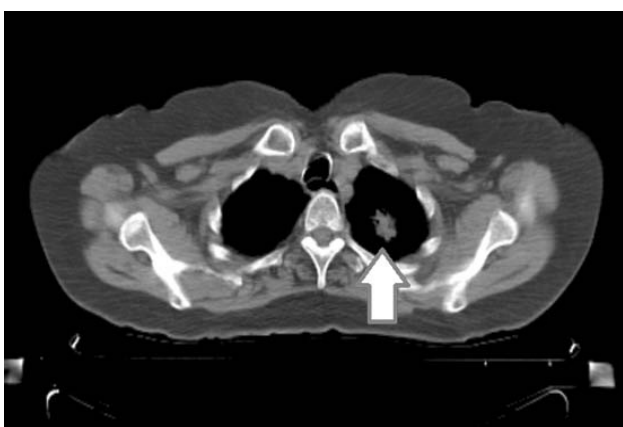


Figure 4: Axial CT from the chest shows pulmonary nodule in the left upper lobe

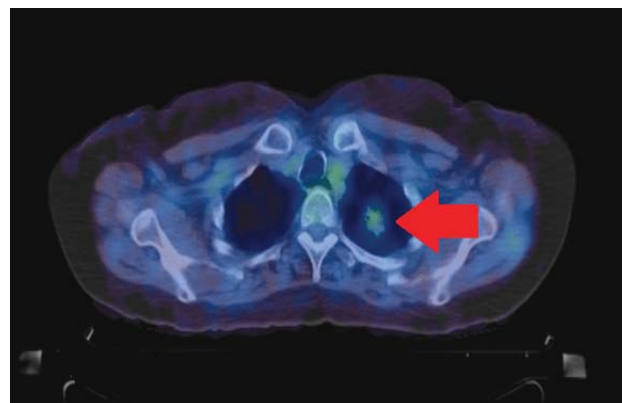


Figure 5: Axial fused PET/CT show mildly hypermetabolic pulmonary nodule in the left upper lobe peripherally intense right vocal cord uptake

The study was reported as suspicious for laryngeal squamous cell carcinoma, as the history of prior surgery was not available at the time of reporting. The PET findings prompted further review. The patient's history was significant for Raynaud's disease that was treated surgically by bilateral cervical sympathectomy many years ago. The patient subsequently developed right vocal cord paralysis and was managed by Teflon injection to medialize the paralyzed right vocal cord.

Discussion

Intense increased FDG uptake by Teflon injection is a rare and unexpected finding.¹ FDG is variably taken up by a variety of inflammatory tissues, including atherosclerotic plaques, abscesses,² fungal infections, and granulomas.³ Both experimental and postmortem studies have shown a chronic foreign body granulomatous reaction from Teflon. Whether secondary to infectious or autoimmune processes, granulomas introduce the potential for false-positive PET interpretation. In vitro studies have shown FDG accumulation in lymphocytes and macrophages, thus providing a mechanism for the increased uptake in macrophage-laden granulomas.^{4,5}

The presence of vocal cord FDG-uptake could be due to physiologic (bilateral and symmetrical), vascular, neoplastic, surgical/iatrogenic, inflammatory/infectious, infiltrative, traumatic and medialization with Teflon.

Conclusion

Medialization of the paralyzed vocal cord with Teflon can induce a granulomatous reaction that causes accumulation of FDG within the abnormal cord, mimicking a metastasis or recurrent neoplasm.

Conflict of Interest: None.

References

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