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Case report

Possible adverse effects of immunotherapy in non-small cell lung cancer; treatment and follow-up of three cases

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ABSTRACT

In the past decade novel agents are on the market for non-small cell lung cancer adenocarcinoma based on pharmacogenomics. The epidermal growth factor receptor mutation, anaplastic lymphoma kinase and programmed death-ligand 1 investigation is necessary in the everyday clinical practice for the oncologic patient. Immunotherapy is nowadays the novel therapy for advanced stage non-small cell lung cancer with two agents nivolumab and pembrolizumab. In the current case series we will present adverse effects from our centers and comment on the treatment and follow-up of the patients.

1. Introduction

During the past ten years a bloom of novel therapies has been observed for non-small cell lung cancer [1,2]. In specific based on the pharmacogenomics of the cancer novel targeted drugs are on the market [3]. The epidermal growth factor mutation (EGFR) and the anaplastic lymphoma kinase (ALK) should be first investigated in non-small lung cancer (NSCLC) adenocarcinoma. Moreover; nowadays programmed death-ligand 1 (PD-L1) has to be also investigated as in the case of >50% overexpression the patient can receive immunotherapy (pembrolizumab) as first line treatment. The programmed death-ligand 1 (PD-L1) overexpression can be investigated also in squamous cell NSCLC. In the case where both EGFR and >50% PD-L1 is observed then the patient should start its first line with tyrosine kinase inhibitors (TKIs) [4]. The cost of immunotherapy still remains high when compared to the standard non-specific cytotoxic therapy [5], however; the progression free survival is higher and less adverse effects for the patients. We present two cases with adverse effects due to immunotherapy administration and comment on them.

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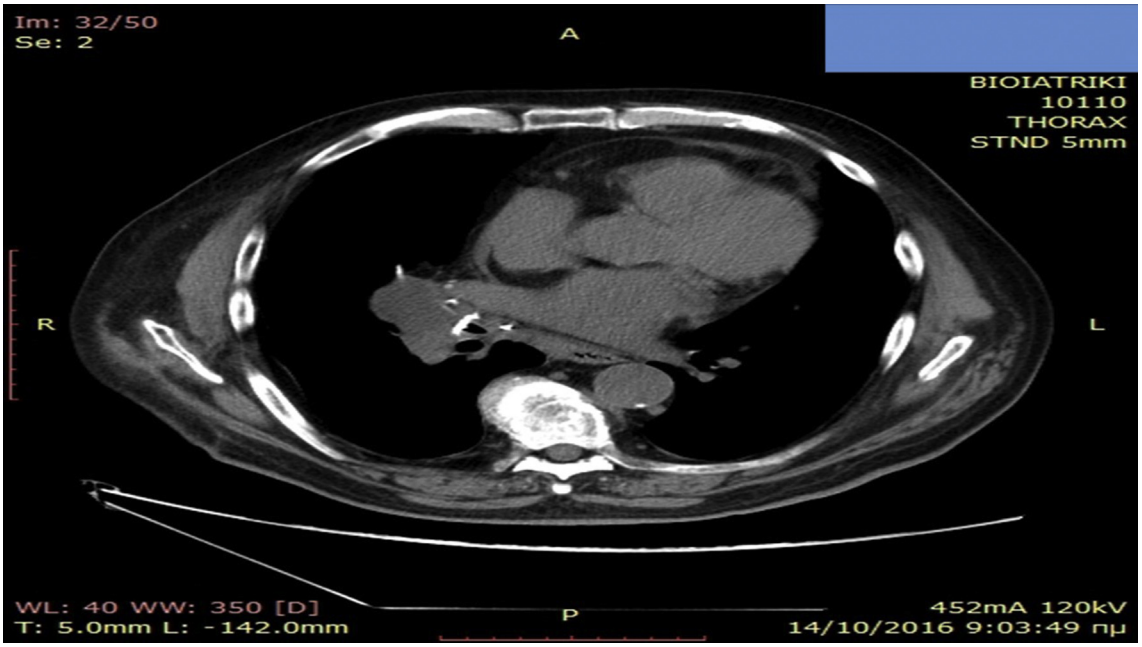

Fig. 1. Disease relapse with CT of the thorax.

2. Case report 1

A 65 year old patient was diagnosed with squamous cell carcinoma in 2014 stage IIa at that time. Two years after during follow-up he presented disease relapse in the site of the surgery (lobectomy) (Fig. 1). He received four cycles of carbo/pax doublet and remained under follow-up. Three months after he presented in the outpatient cabinet with head ache and bone metastasis was diagnosed with scintigraphy bone scan. Programmed death-ligand 1 (PD-L1) was investigated and the expression was 0%. However; nivolumab was initiated due to the toxic adverse effects presented during the first line with neutropenia. Nivolumab 150 mg/15 days was initiated and after three administrations bowel rupture was observed and the patient had an emergency surgery and colostomy was performed. After three months without any therapy the surgeons decided to make an anastomosis of the bowel. A PET-CT was performed in order to make restaging (Fig. 2). In the site of the anastomosis as it can be observed there is an area that retain Hi 18-FDG, however; it was considered to be due to the inflammation of the area. The patient during the three months had stable disease in the thorax and the bone pain was manageable with mild painkillers. Zoledronic acid was initiated along with a platinum doublet.

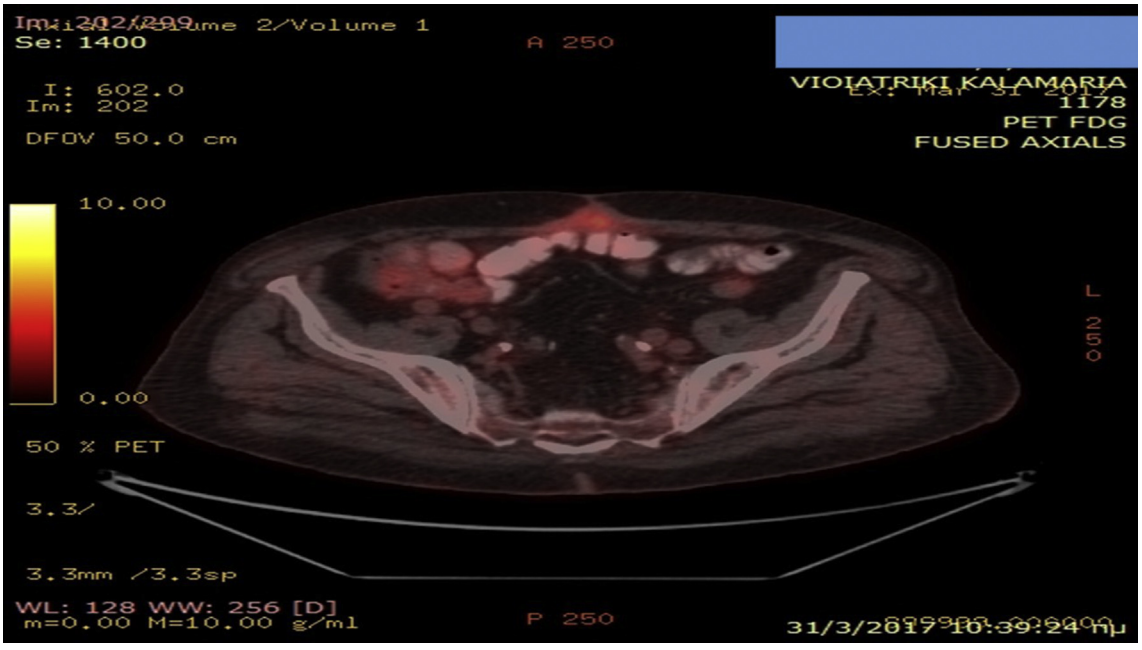

Fig. 2. PET-CT with hi FDG retention in the site of anastomosis.