

Nivolumab-induced polyarthrititis

Shoko Kodama,¹ Koji Kurose,² Tomoyuki Mukai,¹ Yoshitaka Morita¹

¹Department of Rheumatology, Kawasaki Medical School, Kurashiki, Japan

²Department of Respiratory Medicine, Kawasaki Medical School, Kurashiki, Japan

Correspondence to

Dr Shoko Kodama, shoko.0513@med.kawasaki-m.ac.jp and Dr Yoshitaka Morita, morita@med.kawasaki-m.ac.jp

Accepted 22 November 2017

DESCRIPTION

A 48-year-old Japanese woman with non-small cell lung adenocarcinoma (cT3N2M1b) received nivolumab (an immune checkpoint inhibitor) at a dosage of 3 mg/kg every 2 weeks. Treatment with nivolumab was effective. The primary tumour as well as metastases to the lymph nodes and spine almost completely disappeared, as shown on positron emission tomography-CT before treatment (figure 1A) and 4 months after treatment (figure 1B). However, she developed sustained pain and swelling in the shoulders and knees bilaterally after only one infusion of nivolumab, and active inflammation was detected in the shoulder joints bilaterally (figure 1B). She had no personal and family histories of autoimmune disease. Serum C-reactive protein level was 2.1 mg/L. Serum matrix metalloproteinase-3 was elevated at 209 ng/mL (normal <60). Antinuclear antibody, rheumatoid factor and anti-cyclic citrullinated peptide antibody were negative. Ultrasonography confirmed shoulder tenosynovitis and bursitis (figure 2). The arthritis responded well to low-dose prednisone, and she could continue to receive nivolumab. General physicians are encountering an increasing number of immune-related adverse events with increased use of immune checkpoint inhibitors.¹ Our case provides instructive images demonstrating both the efficacy of immune checkpoint inhibitors and the associated immune-related adverse events.

Contributors SK and YM involved in conception or design of the work. SK and KK are responsible for acquisition of data. SK, KK, TM and YM are responsible for analysis and interpretation of data. SK, TM and YM drafted or revised the manuscript.

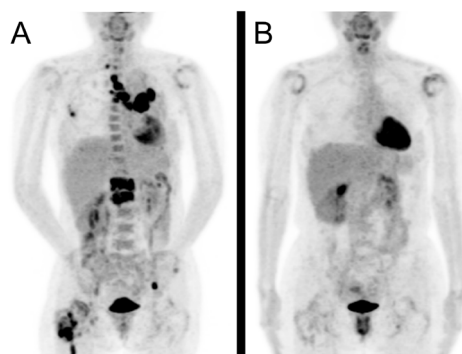


Figure 1 Positron emission tomography-CT before treatment (A) and 4 months after treatment (B) with nivolumab. The primary tumour as well as metastases to the lymph nodes and spine seen before treatment almost completely disappeared. On the other hand, active inflammation was detected in the shoulder joints bilaterally (B).

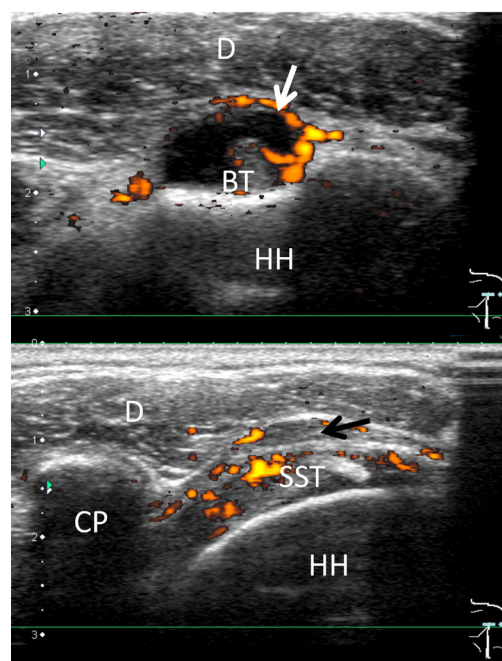


Figure 2 Ultrasonography showing shoulder tenosynovitis (white arrow) and bursitis (black arrow). BT, biceps tendon; CP, coracoid process; D, deltoid muscle; HH, humeral head; SST, supraspinatus tendon.

Learning points

- ▶ An increasing number of immune-related adverse events have been described with the increased use of nivolumab, an immune checkpoint inhibitor.
- ▶ This case provides instructive images showing both the efficacy of the immune checkpoint inhibitors and the associated immune-related adverse events.

Competing interests SK, TM and YM received scholarship donations from AbbVie, Actelion, Astellas, Bristol-Myers, Chugai, Daiichi-Sankyo, Eisai, Eli Lilly, Japan Blood Products Organization, Mitsubishi-Tanabe, MSD, Pfizer, Shionogi, Takeda, Teijin and UCB. KK received scholarship donations from Astellas, Boehringer Ingelheim, Chugai, MSD, Ono and Taiho.

Patient consent Obtained.

Provenance and peer review Not commissioned; externally peer reviewed.

© BMJ Publishing Group Ltd (unless otherwise stated in the text of the article) 2017. All rights reserved. No commercial use is permitted unless otherwise expressly granted.

REFERENCE

- 1 van der Vlist M, Kuball J, Radstake TR, *et al.* Immune checkpoints and rheumatic diseases: what can cancer immunotherapy teach us? *Nat Rev Rheumatol* 2016;12:593–604.



CrossMark

To cite: Kodama S, Kurose K, Mukai T, *et al.* *BMJ Case Rep* Published Online First: [please include Day Month Year]. doi:10.1136/bcr-2017-223387

Copyright 2017 BMJ Publishing Group. All rights reserved. For permission to reuse any of this content visit <http://group.bmj.com/group/rights-licensing/permissions>.
BMJ Case Report Fellows may re-use this article for personal use and teaching without any further permission.

Become a Fellow of BMJ Case Reports today and you can:

- ▶ Submit as many cases as you like
- ▶ Enjoy fast sympathetic peer review and rapid publication of accepted articles
- ▶ Access all the published articles
- ▶ Re-use any of the published material for personal use and teaching without further permission

For information on Institutional Fellowships contact consortiasales@bmjgroup.com

Visit casereports.bmj.com for more articles like this and to become a Fellow