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CORRESPONDENCE

A subcutaneous abscess following anti-programmed cell death 1/programmed death-ligand 1 antibody treatment for lung cancer

Although chemotherapy is traditionally used for the treatment of various malignancies, it is not enough to reach a satisfactory level of clinical outcomes. However, the knowledge gained from previous studies regarding antitumor immune reactions identified various immunological escape phenomena of malignancies against host immune cells, which become a candidate for cancer immunotherapy. Indeed, immune checkpoint inhibitor targeted programmed cell death 1/programmed death-ligand 1 or CTLA4 develops immune cell-mediated anticancer treatment showing a beneficial impact on the clinical outcomes.[1] On the other hand, these treatments sometimes enhance an undesirable immunological adverse reaction to various organs.[2] Herein, we experienced a case of subcutaneous abscess located in the previously received appendectomy following atezolizumab for lung cancer.

A 68-year-old man had undergone a surgical appendectomy for appendicitis 20 years ago. He had intractable distant metastasis of lung primary cancer and received pembrolizumab and atezolizumab experiencing cutaneous adverse reaction as a previously reported case.[3] Because of a cutaneous adverse reaction to pembrolizumab and atezolizumab, systemic therapy was discontinued. However, he recognized a subcutaneous lump and pain located in the previously received appendectomy site 1 month after the administration of pembrolizumab and gradually developed into a swelling subcutaneous mass (Figure 1A). Computed tomography revealed a subcutaneous abscess in the right lower abdomen (Figure 1B). Laboratory examination showed a high value of C-reactive protein was 11.98 mg/dl (normal <0.14 mg/dl) and slightly increased neutrophils with 7433/μl. Skin incision and drainage of subcutaneous abscess were conducted and amoxicillin-clavulanate potassium was administrated. We also noticed a nonabsorbent tied black color surgical suture in the wound (Figure 1C). The skin wound was cured by topical treatment 1 month after the drainage of subcutaneous abscess without the recurrence in other sites.

While the immunological reaction is important for host defense against the external environment, exceed inflammatory reactions sometimes lead to tissue damages and disability of organ dysfunction. Therefore, some tolerance mechanisms play an important role to regulate appropriate immunological reactions.[4,5] A subcutaneous abscess is observed as an immunological reaction to pathogens and nonself-recognized foreign body reactions. Although the detailed mechanisms remain unclear, we thought that there were two possibilities to cause subcutaneous abscess formation in our case. The first reason was some foreign body reactions to a surgical suture following immune checkpoint inhibitor treatment. Consistently, foreign body reaction is mediated by Th17 cells,[6] whose reaction can be enhanced by immune checkpoint inhibitor.[7] Several cases showed an immune reaction to nonabsorbent surgical sutures, leading to abscess formation[8]; therefore, the enhancement of immune reaction by immune checkpoint inhibitors might develop a foreign body reaction to a nonabsorbent surgical suture. The second reason was a reaction to the scar after the appendectomy. However, the other previous scars should enhance cutaneous immune reaction just same as forming a subcutaneous abscess. Although there was a possibility of accidental mechanism, our case might present the caution that the nonabsorbable suture in the human body might become a trigger to enhance a foreign body immune reaction following immune checkpoint inhibitor treatment.

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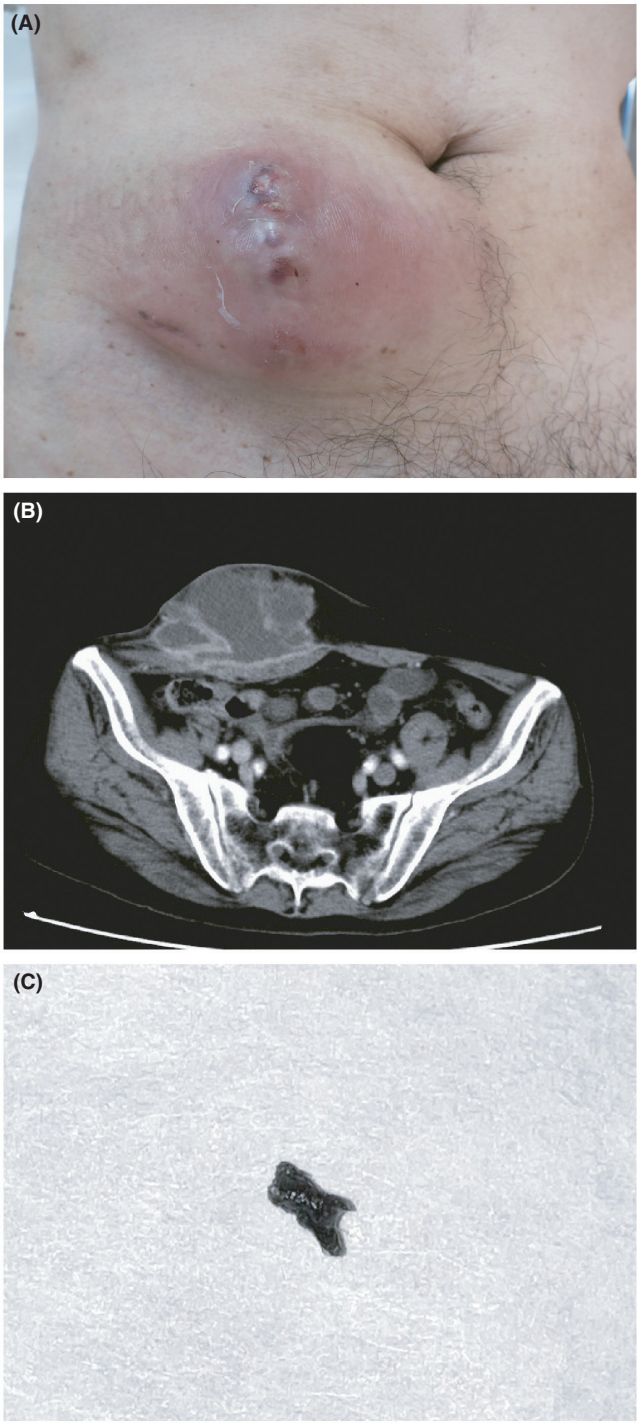

FIGURE 1 Clinical manifestation and a computed tomography imaging. (A) A clinical manifestation. (B) Computed tomography imaging. (C) A nonabsorbent surgical string in the wound

CONFLICT OF INTEREST

The authors declare no conflict of interest.

DECLARATIONS SECTION

Approval of the research protocol: No human participant was involved in this study.

Informed consent: N/A.

Registry and the Registration No. of the study/trial: N/A.

Animal Studies: N/A.

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