Correspondence

A patient with Parkinson's disease developed dermatomyositis with serum anti-transcriptional intermediary factor 1-γ antibody

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Although Parkinson's disease (PD) is the second most common neurodegenerative disease after Alzheimer's disease [1], PD patients are rarely complicated with autoimmune rheumatic disease (ARD) [2]. Here we report a dermatomyositis (DM) patient who had advanced gastric cancer and PD.

A 73-year-old man with PD was referred to our dermatology department because of general erythema on the scalp and face. He has also developed difficulty in swallowing and muscular weakness in his shoulders. The dysphagia gradually worsened, and the patient frequently experienced choking. His PD symptoms also worsened, which resulted in akinesia. He was admitted to our hospital 1 week later, and we regard the date of admission as Day 1. He had had PD for 52 months and was being medicated with carbidopa/levodopa and pramipexole. His father had colon cancer and his mother had PD. He had no family history of ARD.

On admission, physical examination revealed erythema on the scalp and face (*Figure 1a, 1b*). Periungual erythema and cuticular hemorrhage were seen (*Figure 1c*). Laboratory examinations revealed the following: lactic dehydrogenase 402 IU/L (normal range: 115-280), creatine kinase (CK) 1266 IU/L (62-287), aldolase 14.2 IU/L/37°C (2.7-5.9), C-reactive protein 8.8 mg/dL (0-0.5). Computed tomography (CT) scans demonstrated gastric wall thickening of lesser curvature and multiple abdominal

lymphadenopathies. CT scans also demonstrated a slight interstitial change in the lower lung fields; however, his interstitial lung disease was not progressive. Magnetic resonance imaging showed findings of myositis in the right upper arm, shoulder and thoracic muscle. The unit of serum anti-TIF1-γ antibodies was 319.8 U (cutoff: 7.3 U) [3].

Ampicillin-sulbactam was given for aspiration pneumonia from Day 1 to Day 15. From the gastroscopic findings and histopathology of the biopsy specimens, the diagnosis of advanced gastric cancer was made on Day 12. He had a high risk of aspiration by oral intake. Therefore, high-calorie intravenous infusions and water-soluble prednisolone at 20 mg/day were administered via a central venous catheter from Day 15. The DM symptoms stabilized, and we tapered the prednisolone to 10 mg/day from Day 33. We started docetaxel chemotherapy every 3 weeks from Day 41. However, he presented fever with neutropenia after the first treatment and his general condition worsened. We decided to discontinue chemotherapy and start palliative home healthcare. Although the dysphagia remained unchanged, we stopped the prednisolone on Day 53. He was discharged on Day 68. He developed aspiration pneumonia again on Day 86 and died from exacerbation of the pneumonia on Day 95.

Muscle weakness is a key symptom for diagnosing DM, although it was

difficult for this patient because the muscle weakness was masked by PD. In the present case, the rapid progression of muscle weakness was attributed to the DM, as the PD conditions were stable. The patient had neither Gottron's sign nor Gottron's papules, and the heliotrope rash was atypical. However, the findings of periungual erythema and cuticular hemorrhage led us to the correct diagnosis. Moreover, anti-TIF1-γ antibody, which is a DM-specific marker autoantibody [4], was also present in his serum. Anti-TIF1-γ antibodies are important, because they are closely associated with the complication of malignancy in DM [5]. Meta-analysis indicated that the sensitivity of anti-TIF1γ for cancer-associated DM is 0.50 to 1.00, combined 0.78 (95% confidence interval, 0.45-0.94), and the specificity is 0.79-1.00, combined 0.89 (95% confidence interval, 0.82-0.93) [6]. The present case suggests that, in patients with neurological disorders such as PD, the careful observation of cutaneous manifestations is important for the diagnosis of DM and that the detection of DM-specific marker autoantibodies is useful for speculating on the subset of the disease [7].

Although a previous study addressed ARD and the risk of PD; however, the results did not support the hypothesis that autoimmune diseases increase the risk of PD [2]. Some immunosuppressive drugs are considered to delay the onset of neurodegenerative diseases [8, 9]. Since our case developed the PD before the DM, we

searched for an association between the DM and his drugs. We were unable to find any reports on the association of anti-PD agents with DM. A search of PubMed found no case reports of DM complicated with PD. Further investigations are needed to clarify whether there are any inverse correlations between autoimmune diseases and PD.

Disclosure

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FIGURE LEGENDS

Figure 1. Skin manifestations

(a) Erythema on the head, forehead, bilateral ears and cheeks. Heliotrope rash is seen unilaterally on the left periorbital area. (b) Erythema on the back of the neck. (c) Cuticular hemorrhage on the second and fifth fingers of the left hand.