Dermatomyositis (DM) is a systemic inflammatory myopathy with characteristic cutaneous manifestations (a heliotrope rash, Gottron’s papules, paronychial erythema and nailfold bleeding) and is often associated with interstitial lung disease and internal malignancy. Thus far, some autoantibodies specific for myositis have been discovered, including antibodies to aminoacyl-tRNA synthetases (ARS), anti-Mi-2 antibodies, anti-CADM 140 antibody, anti-p155/140 antibody and others (1–3). The various autoantibody-positive subgroups of DM vary in their clinical features. Of these myositis-specific autoantibodies, the anti-p155/140 antibody is a 155-kDa reactive nuclear protein relevant to cancer-associated DM (1, 4–8). However, the frequency of malignancies in patients with anti-p155/140 antibody is undefined because no large epidemiological studies have been undertaken. We describe here a patient with anti-p155/140 antibody-positive DM who had a poorly differentiated metastatic adenocarcinoma; however, the primary tumour could not be identified despite comprehensive examination.

CASE REPORT
A 57-year-old man presented with refractory erythema on the hands and face, muscle weakness and dysphagia. Two months before consultation, he had had erythema on the face, which had spread to the precordium and limbs.

At the first presentation the patient had a typical heliotrope rash, Gottron’s papules, paronychial erythema, nailfold bleeding and hyperkeratotic erythema over the elbow (Fig. 1). Blood examination revealed a high erythrocyte sedimentation rate (62 mm/h), high levels of lactate dehydrogenase (LDH) (295 IU/l), C-reactive protein (CRP) (8.13 mg/dl), creatine kinase (CK) (863 IU/l; reference values: 50–200 IU/l), myoglobin (240 ng/ml) and aldolase (8.6 U/l). The antinuclear antibody titre was positive at 1:40 with a homogeneous and speckled pattern. As for tumour markers, carcinoembryonic antigen (CEA) was high at 115 ng/ml (reference values: < 5.0 ng/ml). He was later found to be positive for anti-p155/140 antibody by an immunoprecipitation study performed using extracts of the leukaemia cell line, K562 (4, 9) (Fig. 2). Chest computerized tomography (CT) revealed aspiration pneumonia. However, there were no signs of interstitial pneumonia.

Biopsy specimens were obtained from the left deltoid muscle and the Gottron’s papule on the fifth metacarpophalangeal joint of the left hand. Histology of the muscle showed inflammatory infiltration of mainly lymphocytes around the muscle fibres. The muscle fibres showed necrotic changes, including size irregularities and reduced staining. The skin biopsy showed hyperkeratosis, thickening of the granular layer, slight lymphocyte infiltration and pigment incontinence at the dermo-epidermal junction.

On the basis of the clinical and pathological findings, we diagnosed this case as DM. Taking into account the high CEA, upper gastrointestinal endoscopy and colonoscopy, hepatic and mammary ultrasonography, systemic contrast-enhanced CT, head magnetic resonance imaging (MRI) and tumour scintigraphy were performed; however, no malignancies were found. From initial consultation we started the patient on 60 mg/day of prednisolone and antibiotics for aspiration pneumonia. Although these symptoms did not recur, CEA continued to rise. The systemic PET-CT scan showed abnormal accumulation of fluorine 18 fluorodeoxyglucose (FDG) in the lymph node swelling in the supraclavicular fossa and mediastinum. Therefore, a mediastinal lymph node biopsy was carried out by fine needle aspiration through upper gastrointestinal endoscopy. On haematoxylin and eosin staining, the biopsy showed a poorly differentiated adenocarcinoma. Immunostaining for cytokeratin 7 and thyroid...
tissue factor-1 (TTF-1) was positive, but immunostaining for cytokeratin 20 was negative. Taking these histological findings into account, we suspected that the primary tumour in our patient was a lung or thyroid carcinoma. Therefore, cervical MRI and bronchoscopy were performed, but failed to show any signs of malignancy in those organs.

One month after the mediastinal lymph node biopsy, bone scintigraphy showed multiple metastases to the ribs. The patient died of a relapse of aspiration pneumonia 2 days after re-hospitalization. Autopsy was not carried out due to non-consent of his family.

DISCUSSION

Anti-p155/140 antibody is an antinuclear antibody that appears in a speckled pattern, and its target is proposed to be transcriptional intermediary factor 1-gamma (10). This autoantibody is strongly relevant to cancer-associated DM (1, 4) and has a high specificity (95.9%) (6). Cancer onset is mostly concomitant with DM or occurs within a year of diagnosis of DM (6). Currently, only the anti-Jo-1 antibody is examined in routine tests concerning DM. Thus, it is necessary to develop a simpler and more widely available test to help precise and early diagnosis of anti-p155/140 antibody-positive DM.

The clinical features of anti-p155/140 antibody-positive myositis are considered to be typical skin eruptions (such as V-sign rash, heliotrope rash and Gottron’s papules) and the absence of interstitial pneumonia (1). Moreover, flagellate erythema is the most significant type of skin eruption, and most patients have muscle weakness or elevated serum CK levels (4).

Although flagellate erythema was absent in our patient, the other typical symptoms and absence of interstitial pneumonia were all evident, which along with the continuous increase in CEA levels strongly suggested an internal malignancy. Indeed, we discovered mediastinal lymph node metastases and diagnosed their histological type, but could not identify the primary tumour. The association with anti-p155/140 antibody is reported to be with carcinomas of the stomach, lung, breast and gall bladder (4). The possible primary cancer in our patient was thought to be of the lung, but the diagnosis remains unknown because autopsy was not performed.

In Table 1, we have summarized five cases of dermatomyositis positive for the anti-p155/140 antibody (Fig. 2), including the present case, reported in our affiliated hospitals. Although the heliotrope rash was not present in two cases, none of the cases had interstitial pneumonia. All except the one patient who could not be examined had malignant tumours. Four patients with elevated CK levels showed muscle weakness, and the anti-nuclear antibody titres were not very high in any of the cases.

REFERENCES


Table I. Characteristics of five cases of dermatomyositis with the anti-p155/140 antibody and no interstitial pneumonia

<table>
<thead>
<tr>
<th>Case no.</th>
<th>Age/sex</th>
<th>Heliotrope rash</th>
<th>Gottron’s sign</th>
<th>Serum creatine kinase*</th>
<th>Internal malignancy</th>
<th>Anti-nuclear antibody</th>
</tr>
</thead>
<tbody>
<tr>
<td>1. 57/M</td>
<td>+</td>
<td>+</td>
<td>863</td>
<td>Poorly differentiated adenocarcinoma (the primary unidentified)</td>
<td>40× (Hom, Spe)</td>
<td></td>
</tr>
<tr>
<td>2. 76/F</td>
<td>–</td>
<td>–</td>
<td>523</td>
<td>Unexamined</td>
<td>80× (Spe)</td>
<td></td>
</tr>
<tr>
<td>3. 65/F</td>
<td>–</td>
<td>+</td>
<td>894</td>
<td>Lung (large cell carcinoma)</td>
<td>160× (Hom, Spe)</td>
<td></td>
</tr>
<tr>
<td>4. 74/F</td>
<td>+</td>
<td>+</td>
<td>146</td>
<td>Lung (large cell carcinoma)</td>
<td>80× (Hom, Spe)</td>
<td></td>
</tr>
<tr>
<td>5. 58/M</td>
<td>+</td>
<td>+</td>
<td>300</td>
<td>Metastatic hepatocarcinoma (the primary unidentified)</td>
<td>80× (Hom, Spe)</td>
<td></td>
</tr>
</tbody>
</table>

*Reference values of creatine kinase: 50–200 IU/l. †Present case. Hom: homogeneous type; Spe: speckled type.