Dermatomyositis Associated with Testicular Tumour with Elevation of Serum Lactate Dehydrogenase (LDH) Isoenzyme-1

Sir,

It is well known that dermatomyositis (DM) is frequently associated with internal malignancy (1–2). Common malignant neoplasms found in association with DM are breast, lung, ovary, stomach and colon. Among such malignancies, testicular tumour appears to be rare and we found only one published case report of this combination (3). We report here a case of DM associated with a testicular tumour, with elevated serum lactate dehydrogenase (LDH), in particular its isoenzyme-1 (LDH-1).

CASE REPORT

A 24-year-old Japanese man presented at our hospital in December 1994 with erythema on the periorbital area, dorsum of the hands and metacarpophalangeal joints. The eruption had appeared 2 weeks before. Physical examination revealed erythema with severe oedema on the face, especially the periorbital area, with a violaceus colour (Fig. 1). Erythema was also noted on the dorsa of his finger, toe, elbow and knee. His upper back showed poikiloderma. Weakness and pain of the proximal muscles of the upper limbs were also found.

Laboratory examinations measured GOT 618 IU/l (normal range: 9–30 IU/l), GPT 115 IU/l (4–30 IU/l), LDH 1531 IU/l (202–357 IU/l) with normal isoenzyme pattern, CPK 13060 IU/l (30–180 IU/l), aldolase 61.6 IU/l at 37°C (1.7–5.7 IU/l) and serum myoglobin 2560 ng/ml (<50 ng/ml). Urinalysis, renal function test, C-reactive protein (CRP), erythrocyte sedimentation rate, serological tests for syphilis, and tests for tumour markers such as CA19-9, CA125, CEA and AFP were within the normal range. The antinuclear antibody titre was 1:640 with speckled and homogeneous patterns, while the tests for RA factor, anti-ENA (Sm, RNP, SS-A and SS-B), anti-Jo-1 antibody and anti-Scl-70 antibody were all negative. A CT scan of the abdomen and pelvis, endoscopic examination and a chest X-ray showed no abnormalities. On electromyographic examination myogenic patterns were detected in the deltoid muscle.

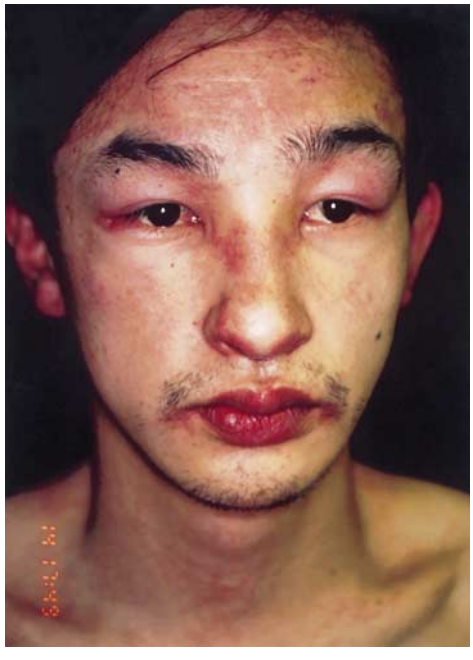

Fig. 1. The patient, with severe oedema on the face, especially in the periorbital area.

Histopathological examination of the erythematous skin from the dorsa of his finger showed an oedema of the upper- and mid-dermis and an inflammatory cell infiltrate. A biopsy specimen from the left deltoid muscle revealed a slight perivascular lymphocytic infiltration.

From these clinical and laboratory findings he was diagnosed as having DM. Both clinical symptoms and laboratory data were improved by administration of prednisolone (60 mg/day) for 2 months. However, serum LDH levels, especially LDH-1 levels gradually increased. In parallel, the left supraclavicular lymph node was enlarging. At this time, LDH measured 3333 IU/l, with LDH-1 isozyme 43.3% (normal range: 15.6–27.9%). Biopsy of the lymph node revealed poorly differentiated adenocarcinoma. CT of the abdomen and lung exhibited swelling of multiple para-aortic lymph nodes and lung metastasis. Detailed physical examination revealed a 2 cm diameter hard nodule in the left testis. A diagnosis of testicular tumour was made and orchitectomy was performed. Histologically, the tumour was diagnosed as an intratubular germ cell tumour. He was treated with combined chemotherapy (carboplatin, etoposide, bleomycin). After 5 cycles of chemotherapy the metastasis of the lung and para-aortic lymph nodes disappeared and LDH and its isozyme pattern came into the normal range. The clinical symptoms, such as muscle weakness and erythema, and laboratory data have not relapsed despite a reduction in the dose of oral prednisolone.

DISCUSSION

Patients with malignant tumour often have elevated total serum LDH with or without an abnormal isoenzyme pattern. This is caused mainly by the release of LDH from tumour tissues into the blood. The frequently observed abnormalities in serum LDH isoenzyme pattern are an increase in fractions of LDH-2,3,4,5, whereas an increase in LDH-1 is rare. The increase in serum LDH-1 suggests damage to the tissues containing a large amount of LDH-1, such as erythrocytes, heart muscle and kidney. However, in recent years, attention has been focused on the clinical usefulness of LDH-1 as a marker of germ cell tumours (4). When a patient with DM has high serum LDH, especially LDH-1, a possible combination of malignancy of a germ cell tumour arising mainly from the testis or ovary should be considered.

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Toshiyuki Ishizawa, MD, Yoshihiko Mitsuhashi, MD and Shigeo Kondo, MD
Department of Dermatology, Yamagata University School of Medicine, 2-2-2 Iida-Nishi, Yamagata 990-9585, Japan.