Case Reports

Fallopian tube cancer associated with paraneoplastic dermatomyositis - asymptomatic multivisceral exacerbated dermatomyositis mimicking recurrent widespread malignant disease: case report

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Summary

Objective: To report an uncommon case of a recurrent episode of primarily paraneoplastic dermatomyositis which was completely disconnected from the initially triggering malignancy and manifested as a silent pure multivisceral exacerbation. *Case:* A 70-year-old woman presented with a pure multivisceral episode of dermatomyositis without characteristic musculo-cutaneous symptoms one year after successful treatment of fallopian tube carcinoma with complete resolvement of a concomittant paraneoplastic dermatomyositis. The uncommon manifestation of recurrent dermatomyositis involving the lungs, spleen and liver, both adrenal glands and abdominal lymph nodes, mimicked a highly disseminated recurrence of the fallopian tube cancer. Physicians participating in the interdisciplinary tumor board were misled to opt for reinductive chemotherapy. Only histologic diagnosis obtained from multiple biopsies uncovered the inflammatory nature of the disease and spared the patient unneeded chemotherapy. *Conclusion:* Asymptomatic multivisceral dermatomyositis may mimic metastatic spread of the initially underlying malignancy and may misdirect therapeutic strategies towards inadequate antineoplastic treatment.

Key words: Carcinoma of the fallopian tube; Dermatomyositis; Paraneoplastic disease; Metastatic disease.

Introduction

Primary carcinoma of the fallopian tube accounts for less than 1% of all malignant neoplasms of the female reproductive tract. However, incidence is probably underestimated as many advanced cases are mistaken for ovarian cancer [1, 2]. In rare cases, three have been published in the literature so far [3-5], fallopian tube cancer is complicated by symptoms of paraneoplastic dermatomyositis (DM), which may account for early diagnosis of the underlying silent malignancy.

DM is an infrequent disorder with a prevalence rate estimated at less than one per 100,000 and is presumed to be of autoimmune pathogenesis. The disease is characterized by a symmetric proximal, extensor, inflammatory myopathy and typical cutaneous eruptions. The most important diagnostic feature is poikiloderma of the skin characterized by a violaceous color, features of hyper- and hypopigmentation, telangiectasis and epidermal atrophy. A striking attribute of poikiloderma in DM is photodistribution. Pulmonary disease occurs in approximately 15%-30% of patients with DM and generally presents as a diffuse interstitial fibrosis, which is a feature of patients with anti-transfer-RNA synthetase syndrome with Jo-1 antibodies [6]. Patients may develop adult respiratory distress syndrome, which accounts for a significant proportion of morbidity and mortality because of resistance to therapeutic agents including corticosteroids and therefore follows a course independent from that of the muscle disease.

The autoimmune origin of DM is supported by its association with other autoimmune disorders, autoantibodies and histocompatibility genes. The primary antigen target in DM is the endothelium of the endomysial capillaries [7, 8]. Initiation of the autoimmune-mediated processes is triggered by outside factors (e.g. malignancy, drugs or infections) in genetically predisposed individuals.

The reported frequency of DM as a paraneoplastic disorder varies from less than 10% to over 50% in adults [9]. The most commonly observed cancer types in women with DM are ovarian cancer, followed by breast and other gynecological and gastrointestinal cancers. Malignant disease may occur before the onset of DM, concurrently or afterward. Currently proposed hypotheses to explain the paraneoplastic nature of DM are 1) a common environmental trigger for both cancer and myositis in genetically susceptible hosts, 2) tumor products causing muscle and skin inflammation, and 3) cross-reactivity between tumor and muscle or skin antigens in the context of a tumor-induced dysregulation of the immune system [9].

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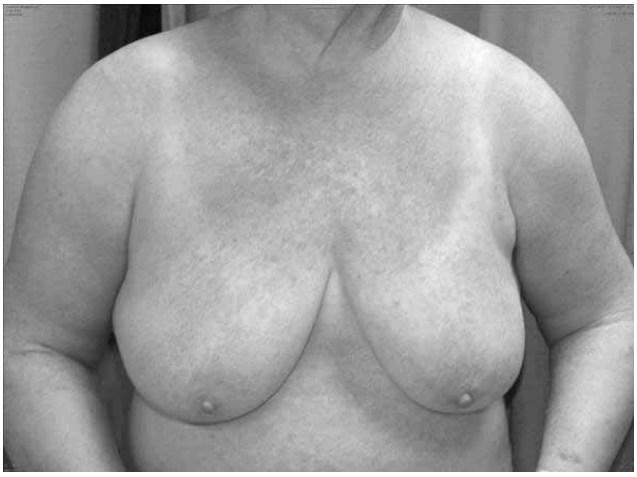
Fig. 1



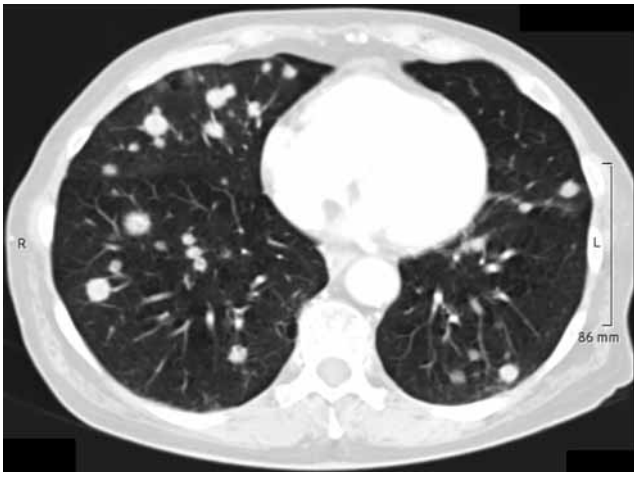


Fig. 2

Figure 1. — A 70-year-old patient with typical features of DM: characteristic violaceous poikiloderma with photodistribution.
Figure 2. — CT scan, one year after successful treatment of the carcinoma of the fallopian tube, showing multiple lesions in both lungs that were highly suspicious for metastatic disease.

Case

A 70-year-old woman applied to the Department of Dermatology in January 2004 because of an itchy exanthema on her face and arms without recovery on conservative therapy with local corticosteroids. The patient exhibited typical features of DM: a characteristic violaceous poikiloderma with photodistribution and nail fold changes (Figure 1). The characteristic clinical picture of DM was supported by laboratory findings: increased CK (707 U/l; normal range: 26-140), LDH (408 U/l; normal range: 130-223) and aldolase (13.5 U/l; normal range: 3.9-9.5). Particular antinuclear antibodies (ANA) were found at a titer of 1:640. Jo-1 antibodies however, were negative. Due to the clinical picture of DM, an extensive search for a malignant condition was initiated. The computed tomography (CT) scan revealed a 6-cm mass in the left iliac fossa that was initially thought to be an ovarian tumor. The pelvic mass was confirmed by transvaginal ultrasound and described as predominantly cystic but partially solid. Serum CA-125 was elevated to 144 U/ml (normal range: 0-35 U/ml).

Systemic therapy with methylprednisolone (80 mg daily) was started, and the 6-cm multicystic tumor adherent to the sigmoid and originating from the left tube was removed during laparotomy. Debulking surgical procedures consisted of bilateral salpingo-oophorectomy, hysterectomy, partial resection of the sigmoid with end-to-end anastomosis, omentectomy and pelvic lymphnodectomy and led to a complete clearance of the macroscopic visible tumor. Paraaortal lymphadenectomy was omitted because of major respiratory complications during general anesthesia.

Histopathological examination revealed a poorly differentiated carcinoma of the tube involving the resected colon and the peritoneum of the lower pelvis. Metastases were diagnosed in three out of 32 resected lymph nodes. According to FIGO (International Federation of Gynecology and Obstetrics) classification, disease was staged IIIc.

The patient had an unremarkable postoperative recovery, and the symptoms of the dermatomyositis improved promptly. Treatment was completed by adjuvant chemotherapy with carboplatin AUC-5 and paclitaxel 175 mg/m^2 given at three-week intervals for six cycles. The corticosteroid dose was reduced to 20 mg daily during and to 10 mg daily after chemotherapy. As all symptoms of dermatomyositis had resolved, the corticosteroid dose was reduced stepwise and consolidation treatment with azathioprine 3 x 50 mg daily was started.

One year after primary diagnosis, in January 2005 a CT scan performed in accordance to the guidelines of our aftercare program, showed multiple lesions in the lung (Figure 2), liver, spleen and in both adrenal glands that were highly suspicious for metastatic disease of the fallopian tube carcinoma. PET-CT scan confirmed these results and caused multiple metastases to be suspected in the lymph nodes of the left lower abdomen. However, serum CA-125 had further decreased to 6 U/ml. The patient was completely asymptomatic, without cough or dyspnea, cutaneous or muscular symptoms. At this time treatment consisted of 2 mg of methylprednisolone and 3 x 50 mg of azathioprine daily.

Based on diagnostic imaging the interdisciplinary tumorboard opted for reinduction chemotherapy with platinum and taxanes. However, before chemotherapy was started a decision was made to confirm the clinical diagnosis of widespread metastatic recurrent fallopian tube cancer by multiple CT scan- and ultrasound-guided biopsies from the lesions of the lungs and the liver. Histopathological examination revealed a bronchiolitis obliterans organizing pneumonia with a surrounding lymphocytic interstitial pneumonia and chronic hepatitis without evidence of malignancy. The patient received 500 mg of clarithromycin twice a day for three weeks, and the corticosteroid dose was concomittantly increased to 20 mg daily. Four weeks later a significant regression of all previously described lesions was shown by CT scan.

In June 2005 another CT scan revealed that the liver and lung lesions had further regressed and all other lesions (adrenal glands, spleen, lymph nodes) had completely disappeared. To date, more than two years after the pure visceral episode of DM, the patient is in very good physical condition without any signs of DM and without evidence of recurrence of the fallopian tube carcinoma. Six months ago immunosuppressive medication was discontinued.

Discussion

In the reported case, severe symptoms of DM were decisive in bringing to light an underlying silent carcinoma of the fallopian tube, hence diagnosed at a stage of

relatively confined dissemination, allowing surgical clearance of all macroscopic tumor. The most intriguing aspect of this case, however, was the uncharacteristic purely multivisceral and asymptomatic manifestation of recurrent DM that was furthermore completely disconnected from the initially triggering malignant condition.

In general, a parallel course of both conditions is expected and exacerbation of the symptoms of paraneoplastic DM is commonly observed just before or concomitantly with the diagnosis of recurrent malignant disease [10]. However, our patient was completely free of symptoms when multiple lesions in both lungs and adrenal glands, the liver and lymph nodes of the lower pelvis were diagnosed by CT and PET scan. The lack of characteristic musculo-cutaneous symptoms of DM, the exclusion of interstitial lung disease frequently observed in DM by high-resolution CT scan and the fact that lesions of the liver, spleen and adrenal glands are very uncommon in DM [11] led to the clinical diagnosis of highly hematogenous disseminated recurrent fallopian tube carcinoma. Consequently, the majority of physicians participating in the interdisciplinary tumor-board opted for reinductive platinum-based chemotherapy.

Nonetheless, some of the findings such as the further declining levels of serum CA-125 and the lack of peritoneal involvement or ascites were discrepant with the diagnosis of widespread fallopian tube cancer. Even though hematogenous spread is slightly more frequent in fallopian tube carcinoma than in ovarian cancer, the disease generally remains confined to the abdominal cavity and purely hematogenous tumor dissemination is more than exceptional [12]. Thus, the case was readdressed and the decision was made to perform CT scan- and sonography-guided biopsies of the lesions to obtain a histological diagnosis. Histopathological examination revealed a surprising result since there was no evidence of malignant disease, either in the lung or the liver, but the examined lesions were inflammatory in nature. The DM-related immunologic background of the multivisceral inflammatory disease was finally corroborated by the disappearance of all lesions after increasing the corticosteroid doses.

We conclude from our own experience, that in malignancies complicated by paraneoplastic DM, patients have to be viewed in consideration of each particular disease. Physicians should be aware of a pure multivisceral and asymptomatic manifestation of recurrent DM, which may remain unrelated to the course of the initially underlying malignant tumor, but can convincingly mimic widespread malignant disease. Especially in such cases, it is mandatory to confirm the malignant nature of suspicious lesions by histology in order to spare patients from unneeded chemotherapy.

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