Chromomycosis. A Case with a Widespread Rash, Lymph Node Metastasis and Multiple Subcutaneous Nodules

Chromomykose. Ein Fall mit ausgedehntem Rash, Lymphknotenmetastasen und multiplen subkutanen Knoten

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Summary: The patient is a male aged 62 living in Ibaraki Prefecture. Eight years ago, a rash first appeared on the left side of the lower back during summer. Two years later, the rash had spread to almost the entire body. In 1983, he was diagnosed by the dermatological department of the Mito Kyodo Hospital as having chromomycosis due to Fonsecaea pedrosoi. He received treatment using fluocytosine without any significant improvement. Superficial lymph node swellings and multiple subcutaneous nodules appeared in December of 1985. He entered our institute in May of 1987.

In addition to a rash, subcutaneous nodules, and lymph node swellings, at that time abnormal shadows were observed in both lungs and the liver. F. pedrosoi was isolated from the rash, subcutaneous nodules and lymph node swellings. F. pedrosoi was also isolated from a fluid obtained by brushing the left lung through a bronchus. The lesion of the right lung was excised. He was pathologically diagnosed as having squamous cell carcinoma. Findings suggesting infection by black fungi were not observed in this lesion and no fungi were isolated from this lesion.

karzinom. In dieser Läsion konnten Chromomycose-Erreger weder mikroskopisch noch kulturell nachgewiesen werden.

Introduction

The number of cases of chromomycosis reported in Japan has exceeded 250 (1). Cases where rashes have spread to the entire body, however, remain rare. In this case, many subcutaneous nodules and superficial lymph node swellings were observed in addition to a widespread rash, and Fonsecaea pedrosoi was isolated from each lesion. CT scanning found abnormal shadows in both lungs and the liver. Operation of the lesion of the right lung confirmed the presence of squamous cell carcinoma. A fungus of the same species was isolated from a fluid obtained by brushing the left lung through a bronchus.

Case Report

Patient: A male aged 62 living in Ibaraki Prefecture and working as a barber.
First admission: May 22, 1987
History of the current disease: Eight years ago (in 1979), a rash first appeared on the left side of the lower back and itching was reported.

The rash gradually enlarged, and two years later the rash covered almost the entire body. In 1983, he was diagnosed by the dermatological department of the Mito Kyodo Hospital as having chromomycosis due to F. pedrosoi (2).

He received treatment using flucytosine without any significant improvement. He entered the department of respiratory surgery of our hospital on May 22, 1987 with his chief complaint being chest pain.
Diagnosis at time of admission: As shown in Figs. 1 and 2, the rash which covered almost the entire body consisted of conglomeration and fusion of verrucous nodules covered with squamae and crustae and also include scars and healed surfaces. Small rashes were also observed on the extremities and the scalp. Moreover, subcutaneous nodules with a diameter of up to 1 cm were scattered over the chest and upper extremities. Lymph node swellings were observed behind the right ear (Fig. 3), on the right cubital fossa, and on the left inguinal region.

Direct examination: Many sclerotic cells were observed in a KOH preparation of crustae existing on the surface of the rash (Fig. 4) and in a KOH preparation of a fluid obtained by exploratory puncture of lymph nodes of the right elbow.

Histological images (Figs. 5–10): The skin of the abdomen, subcutaneous nodules of the left upper arm, and lymph nodes behind the right ear were examined by biopsy:

Skin eruption of the abdomen (Figs. 5 and 6): The surface consisted of a mixture of crustae...
Subcutaneous nodules of the right upper arm (Figs. 9 and 10): The development of a large granuloma was observed and a cavity developed in the center of the granuloma due to necrosis. Many sclerotic cells were present in the granuloma.

Culture: Black fungi were isolated from crustae of the surface of skin eruption, biopsy specimens of skin eruption, biopsy specimens of subcutaneous nodules, biopsy specimens of lymph nodes and fluids obtained by exploratory puncture of lymph nodes. A black colony (17 x 18 mm) covered with short gray hairs developed on Sabouraud glucose agar (4% glucose) at room temperature three weeks following inoculation by the fungus isolated from skin eruption; the center of the colony had a button-like protrusion (Fig. 11).

Development of conidia of this fungus was very slow during its slide culture (Fig. 12), and conidia of the Cladosporium type and the Rhinocladiella type were observed only after long-period (two month) slide culture. Conidia of the Phialophora type were not observed at that time. Based on the above findings, we identified this black fungus as Fonsecaea pedrosii. Similar findings were observed for all black fungi isolated from other regions, and we identified all of them as F. pedrosii.

Sensitivity tests of the black fungi were performed, and all the black fungi exhibited similar results. Specifically, the minimum inhibitory rates of the fungus for flucytosine, amphotericin B, miconazole and itraconazole were 80 µg/ml, 20 µg/ml, 0.16 µg/ml and less than 0.08 µg/ml respectively.

Results of clinical test: The results of urinalysis remained normal. Peripheral blood picture: WBC, 9200/mm³; RBC, 4.16 x 10¹²/mm³; Hb, 11.9 g/dl; Ht, 37.3%; PLT, 363 x 10³. Differential blood count: seg, 47%; band, 27%; lym, 21%; mono, 3%; eosino, 7%; baso, 0%. ESR: 60 mm/h.

Immunoglobulin rate: IgG, 2560 mg/dl; IgA, 191 mg/dl; IgM, 252 mg/dl.

Serum protein fraction: gammaglobulin, 23.3%. PPD reaction yielded a positive result. He had become sensitive to DNCB.
Fig. 3: Lymph node swelling at the back of the right ear.

Fig. 4: Sclerotic cells in a scale. KOH preparation. × 200.
Fig. 5: Histopathological findings of abdominal skin eruption. HE-stain. × 5.

Fig. 6: Fig. 5 magnified. Microabscess evident in the epidermis. Sclerotic cells are present within. HE-stain. × 200.
Fig. 7: Histopathological findings of a lymph node of the back of the right ear. HE-stain. × 20.

Fig 8: Magnification of Fig. 7. Sclerotic cells can be seen in the giant cell. HE-stain. × 500.
Fig. 9: Histopathological findings of a subcutaneous nodule of the left upper arm. HE-stain. × 5.

Fig. 10: Fig. 9 magnified. Sclerotic cells are present in the giant cell, one sclerotic cell has started to germinate. HE-stain. × 500.
Fig. 11: Giant culture from the skin eruption.

Fig. 12: Slide culture of *F. pedrosoi* from a skin lesion. Nomarsky stain. × 20.
The TB cell fraction was normal. T-cell proliferation reaction using PHA and ConA yielded a normal result.

Results of other tests: We investigated whether or not infection by black fungi had spread to the internal organs. CT scanning of the lungs found abnormal shadows in the right lower lobe and the left hilus pulmonis. CT scanning of the abdomen found an abnormal shadow in the right lobe of the liver. Three colonies of black fungi developed on a slant medium following inoculation with a fluid obtained by brushing the left lung under bronchography. These colonies were examined and identified as *F. pedrosoi*. No atypical cells were observed in the same fluid.

Treatment and progress: When fluycytosine (10 g/day) and itraconazole (150 mg/day) were jointly used, the rash showed a small improvement two months after the initial administration. However, pyothorax occurred during the improvement of the rash because bronchography was performed frequently. The lower lobe of the right lung was excised by a surgeon in the department of respiratory surgery on July 22, 1987. No black fungi were isolated from excised specimens of the lower lobe of the right lung. The lesion of the lower lobe of the right lung was diagnosed as squamous cell carcinoma by the pathologist. No findings suggesting infection by black fungi were observed within the lesion. Since there was satisfactory progress following the operation, combined use of fluycytosine and itraconazole was resumed. Local heat treatment using an electric sheet was also performed.

Discussion

The number of cases of chromomycosis reported in Japan has exceeded 250 (1), but cases where rashes have spread to the entire body remain rare. It appears that cases with widespread rashes remain rare also in foreign countries (3).

According to various references from outside Japan (4), in cases of chromomycosis, despite the fact that the skin lesion is chronic, both lymph node metastasis and metastasis to other organs through blood vessels are rare. However, of the cases of chromomycosis reported in Japan, metastasis to the regional lymph nodes was confirmed in seven cases (5). Among these seven cases, the disease was caused by *F. pedrosoi* in five cases and the disease was caused by *Phialophora verrucosa* in the other two cases. It is thought that the present case is rare because of the widespread rash, lymph node metastasis and multiple subcutaneous nodules. Since these subcutaneous nodules were sporadically observed in various parts of the body, metastasis through blood vessels is inferred. In any case, lymph node metastasis and subcutaneous nodules suggest the possibility of the presence of internal organ metastasis. Although this case also had lung cancer, we were unable to discover any previous cases of chromomycosis by cancer. Although the reason that this case had a widespread rash is unclear, he reported strong itching and therefore self-inoculation caused by scratching may be the causative factor. In this case, the rash spread to almost the entire body in a relatively short period of two years after the rash (small lesion) first appeared. It appears that this course is also different from usual chromomycosis. This patient had used corticosteroid ointment before he visited our hospital and the use of this ointment appears to have participated in the spread of the rash. No immunological abnormality was observed in this case. The fungus isolated from this patient was characterized by very slow and nonvigoruous formation of conidia. This fungus grew at 37°C but did not grow at 40°C.

When the patient entered our hospital, clinical examination found abnormal shadows in both lungs and the liver. The lesion of the right lung was diagnosed as squamous cell carcinoma by pathological examination performed after excision of the lower lobe. No abnormal changes suggesting infection by black fungi were observed in the lesion, and no black fungi were isolated from the
lesion. But, *F. pedrosoi* was isolated from a fluid obtained by brushing the left lung through a bronchus. However, the nature of this lesion remains unknown because operation or biopsy of the lesion of the hilus pulmonis of the left lung has not been performed to date.

References


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