PEACILOMYCES INFECTION IN AN IMMUNOCOMPROMISED PATIENT

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ABSTRACT

Paecilomyces sp. is a saprophytic fungus which has rarely been associated with human disease. We report the first case of invasive subcutaneous infection caused by this fungus in a 78-year-old female from Damghan, Iran, with diabetes and chronic renal failure. A biopsy provided an initial diagnosis of the mold in tissue. Multiple positive fungal cultures which were obtained from the biopsied tissue were subsequently identified by microscopic and macroscopic characteristics to be Paecilomyces sp. This case was successfully treated by oral ketoconazole (200 mg/day).

INTRODUCTION

Paecilomyces spp. is seldom associated with human infections. Most of the cases recorded have been of a mycotic keratitis. Several cases are now on record of endocarditis following valve replacement, and endophthalmitis following lens implantation. A common air-borne contaminant is resistant to most sterilizing techniques. There were 12 cases of endophthalmitis following intraocular lens implantation. The first case of endophthalmitis was reported by Uys in 1963, typical of these cases. The blood, from a thrombus overlying the mitral valve, and from an embolus in the iliac artery following the death of a patient who had had a valve replacement.

Paecilomyces spp. was recovered from the renal pelvis by Sherwood and Dansky, who reviewed Paecilomyces infections up to 1983.

Pulmonary infections and pneumonia have been noted. Georg from pulmonary lesion in a giant tortoise. Mycelium was present in many small abscesses throughout the lung. Most cases are cutaneous or concern transient catheter-related infections, but also deep infections are known. The present article describes Paecilomyces spp. from subcutaneous tissue in the insulin induction site.

CASE REPORT

The patient was a 78-year-old woman residing in Damghan, diabetes mellitus for a long time. She was seen by the Medical Mycology Department, Pasteur Institute of Iran with pruritic, erythematous, edematous subcutaneous nodules of the left hand with adjacent suppurative lymphatics. His problem began 28 days before she referred to the Medical Mycology Pasteur Institute laboratory. Organisms had inoculated in the left hand in the insulin induction site. Biopsy specimens of the lesions were performed.

Her clinical history revealed that she had chronic renal failure over a period of 25 years and diabetes mellitus for over 14 years. She received insulin for 4 years before her problem began. Biopsy specimens of the lesions were performed.

Specimens were directly examined with 10% potassium hydroxide. The biopsy specimen showed hyphae. The tissue sections were stained by hematoxylin and eosin and periodic acid schiff stains. A granulomatous reaction was seen.
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Fig. 1. Clinical appearance of the subcutaneous lymphatic abscesses.

Fig. 2. Histopathological section of biopsy specimen, showing numerous hyphae (hematoxylin – eosin stain).

Fig. 3. Colony of Paecilomyces sp. on sabouraud dextrose agar.

Fig. 4. Slide culture stained by cotton-blue method.

DISCUSSION

Paecilomyces spp. is a common fungus in the air and can grow in environments with high ambient temperatures. The fungus has been reported to be the causative agent of human mycoses in the literature, mostly occurring in conjunction with prosthetic implants or immunosuppression. Cases include pneumonia,20-21 peritonitis,11-25 a fatal infection of a ventriculoperitoneal shunt19 a case of pyelonephritis,26 fungemia,27 soft tissue infection of the heel,28 sinusitis29-30 endophthalmitis,31 chronic suppurative otitis media,32 cutaneous infection,33-34 and a mycosis at the incision site of a patient who underwent a cesarean section.35 Essential data are summarised in Table I.

Anderson et al13 described infectious complications in 80% of renal transplant patients or renal failure, ciated with high-dose corticosteroid therapy, hypergly-
cemia, leukopenia, or age over 40 years. These risk factors operated presumably by effects on suppression of humoral and cellular immunity and impairment of polymorphonuclear leukocyte function.11 Our patient’s infection was caused by the opportunistic fungus *Paecilomyces* and was associated with three of the four risk factors noted above.

Because the organism was demonstrated in the dermis in pure culture on two separate biopsies, we considered it etiologic in our patient’s infection. Many organisms that were previously considered to be contaminants when isolated from human specimens have emerged as major causes of disease, especially in the immunocompromised host.20 Our patient survived with antifungal treatment. This treatment included ketoconazole (200 mg per day) for 40 days.

### REFERENCES


### Table 1. Review of human *Paecilomyces* spp. infection.

<table>
<thead>
<tr>
<th>Infection</th>
<th>References</th>
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</table>

M, male; F, female; DM, diabetes mellitus; CAPD, continuous ambulatory peritoneal dialysis; VSP, ventriculo-peritoneal shunt placement; CT, chemotherapy; BMT, allogenic bone marrow transplant; CGD, chronic granulomatous disease; LT, lung transplant; CF, cystic fibrosis; RF, renal failure.
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