Urinary System Infection Caused by Paecilomyces Variotti

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ABSTRACT

Fungal organisms are one of the important factors in nosocomial urinary tract infections caused by endo-urological procedures. Herein we report a case of pyelonephritis caused by Paecilomyces variotti in a 14-month-old child following an urinary tract operation. He had operation in 3.5-month-old for reason of ureteropelvic junction obstruction. Approximately two months after the operation a tissue fragments ejected from urinary tract. The patient admitted to our hospital because of bimonthly recurrence was occurred. This tissue fragment was sent for fungal studies to our department. Direct microscopy revealed hyphae. P. variotti was isolated from discarded tissue fragments. Cure was achieved by 2 mg / kg / day for 15 days treatment with amphotericin B.

Key words: Paecilomyces variotti, Pyelonephritis, Urinary system infection

INTRODUCTION

Paecilomyces species exist extensively in the world as soil saprophyte, insect parasite and biological deterioration factor. Most important species of those that may occur in patient with intact or impaired immune system are cutaneous and subcutaneous infection, pulmonary infection, pyelonephritis, sinusitis, cellulitis, endocarditis and fungemia. Surgical operations, placed prosthesis, using of contaminated solutions or lotions are risk factors that cause infection. Because, conidium of both are partially resistant to the most of sterilization techniques (1). In this case, it is aimed to represent the urinary system infection case which is caused by P. variotti that grown after double -J (D-J) catheter insertion owing to ureteropelvic (UP) obstruction.

CASE

Because of UP obstruction, a double catheter was inserted to 14 months old patient when he was 3.5 months old. D-J catheter was removed one month later of installation. After that, patient discharged urine with tissue fragments painfully once in every 2 months. Patient was admitted our pediatric clinic with these complaints that continued for 10 months. An erythrocyte, 24 leucocytes (x400) but not epithelia cell was seen in urinalysis of patient. In urinary system USG, right kidney was 72x25 mm, left kidney was 95x42 mm in sizes while parenchyma thickness was 8 mm on right and 6 mm on left. Right kidney parenchyma echo had increased (grade1). Stone was viewed in bilateral kidneys. Pelvicalyectasy is viewed and pelvis anteroposterior (AP) diameter was measured.
DISCUSSION

Fungi in systemic infections, especially saprophytes have been encountered increasingly as an infection agent. It is important to describe the fungus at species level, owing to difference of susceptibility of all. Diagnosis of fungi, especially moulds is based on their macroscopic and microscopic features and must be performed by specialist microbiologists. Penicillium spp is confused with Paecilomyces spp morphologically. In distinctive diagnosis, be it colonies other than green or blue-green, be it phialides which is wider in basal parts, show obstruction towards to neck-point and be it to leave the main axis by bending, are the most significant morphological properties used to differentiate from Penicillium (1). Isolated P. variotii strain in this case is described by means of characteristic yellow-brown pigmented appearance and morphology of chain-shaped phialoconidia of single cell which is produced from phialide (2). It has been reported that P. variotii was isolated as a disease agent in patients who with intact or impaired immune system (2, 3, 4). Wang et al.(4) have reported a splenic abscess case caused by P. variotii in a 21 months old male patient who had chronic granulomatosis disease with impaired immune system. In this case there was not any detected immune defect as well as male and 14 months was similar terms, but an interventional transaction has performed on urinary system. Fungi have been source of nosocomial urinary system infection since the interventional urinary transactions started (2).

First Paecilomyces case isolated from genitourinary sys-


**Table 1. Minimal inhibitor concentrations of antifungals**

<table>
<thead>
<tr>
<th>Antifungal</th>
<th>MIC</th>
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<tbody>
<tr>
<td>Amphotericin B</td>
<td>0.008 µg/mL</td>
</tr>
<tr>
<td>Voriconazole</td>
<td>1.5  µg/mL</td>
</tr>
<tr>
<td>Caspofungin</td>
<td>16   µg/mL</td>
</tr>
<tr>
<td>Itraconazole</td>
<td>0.64 µg/mL</td>
</tr>
</tbody>
</table>

P. variotii is an infection case which occurred after correction of obstructive uropathy. A study published by Sriram et al. (2) at 1983, is an infection case which is occurred after correction of obstructive uropathy. A study published by Sriram et al. (2) 49 years old diabetic patient who had P. variotii case occurred after interventional urinary transactions, did not respond to treatment with 200 mg of fluconazole per day for 3 weeks and could be able to treated with 1mg/kg/day for 4 weeks. In the case of P. variotii grown after interventional transaction to urinary system, patient healed with 2 mg/kg/day of amphotericin B within 15 days and any problems observed in following months.

Extensive sensitivity studies of P. variotii, in vivo, are inadequate although studies on sensitivity to antifungals. Aguilier et al.(5) have indicated that P. variotii strains are most susceptible to amphotericin B. Kantarcıoğlu et al. (6) have indicated that P. variotii strains are susceptible to amphotericin B, itraconazole, ketoconazole and 5-flourouracil but resistant to fluconazole and miconazole. In this case lower MIC values were determined for amphotericin B and itraconazole; and higher MIC values for voriconazole and caspofungin as a result of in vitro antifungal sensitivity study. Fungal infections and, although rare than those, P. variotii should be considered as a factor of infections which occurred after interventional transactions in adult patient as well as pediatrics patients. Owing to P. variotii strains are able to resist to antifungals, it is necessary to perform antifungal susceptibility tests and treatments should be planned accordingly.

**REFERENCES**


