

Case Report on Fungal Infection in Post Operative Patient

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ABSTRACT- Invasive fungal infections have become a major source of morbidity and mortality in post operative patients. Critically ill patients after extended surgical procedure are more risk to post surgical fungal infections. Life saving devices like central venous catheters cans increases risky for fungal infections. Surgical infections are infections of the tissues, organs or spaces exposed by surgeons during performances of surgical procedure. Mold infection is increasingly common in post operative patients. Postoperative surgical infection represents an uncommon but potentially devastating complication of surgery. Unfortunately, the medical community is not much aware of such secondary infections due to fungi in post operative patients leading to grave consequences. Better diagnostic methods are needed to improve the outcome of successful surgery and better health care for the public. The diagnosis of invasion and dissemination in the majority of cases requires the acquisition and proper interpretation of clinical evidence.

Key-words: Diagnostic method, Postoperative, Secondary infections, Surgical infections

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INTRODUCTION

Fungal pathogenesis is a multifactorial phenomenon. Pathogenesis is the ability of a microorganism to infect the host and produce disease resulting from interaction of pathogen with host via expression of certain factors on both sides. Pathogenicity of a fungus depends on its ability to adapt to the tissue environment and to withstand the lytic activity of the host's defenses ^[1]. Postoperative surgical infection represents an uncommon, but potentially devastating complication of surgery. Mold such as *Aspergillus* are the most common opportunistic filamentous fungi, which can cause a very serious infection that develop rapidly and that can sometimes be fatal ^[2]. The infection is caused by the spores from the environment, which gets into the body through the lungs, gastrointestinal system or the skin.

Primary infection of the skin may occur only when the skin is damaged ^[3,4]. The development of surgical fungal infection is related to three factors, the degree of microbial contamination of the wound during surgery, the duration of the procedure and the host factors, such as diabetes, malnutrition, obesity, immunosuppression and the number of the other Underlying diseases ^[5]. Mold fungi should not at present be routinely tested for susceptibility. They should, however, be identified to the species level since this often gives very useful therapeutic clues ^[6]. Management of invasive mycoses, particularly *Aspergillus* infections, has proven remarkably challenging ^[7].

CASE HISTORY

A 45 years old woman admitted in the government hospital with complaints of excessive bleeding science four months with severe abdominal pain. According to the sonography reports large solid and cystic right adnexal mass seen with measures more than 137×120×132 mm. CT scan of the patient was normal. Histopathological reports also reveal follicular cyst. Further test of cancer (ca/25 test) screening was normal, which means the patient does not have ovarian cancer at present or at before. A sugar report of the patient of fasting was 90 mg/dl and after the meal was 132 mg/dl. The patient was admitted at the hospital for a week after surgery and patient was on

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radiotherapy for 10–15 days after surgery. The blood and urine sample of the patient was collected after 13 days of surgery. Doctors diagnosed ovarian cyst at the right ovary of the patient. The size of the ovarian cyst was 20×15×14 cm.

MATERIALS AND METHODS

The presented work was done in government Model science College (M.P.) India.

A) Procedure of collection

Blood: Fresh blood is collected in a sterile EDTA vial in with sterile needle.

Urine: Morning midstream urine of the patient collected in sterile a container.

A sample of the patient was brought to the lab for further process as soon as possible.

B) Procedure of Isolation of pathogen

Isolation from urine

The urine sample was centrifuged at 2000 rpm for 15 minutes and the sediment used to inoculate in the SDA slants. The direct microscopic slide was also prepared.

Isolation from blood

The blood sample was first added to the broth in the ratio of 1:10. Also few drops of blood sample used to prepare direct microscopic slides. Then the blood was inoculated in the SDA slants.

Identification of the isolated pathogens was done by Micro-morphology, Macro-morphology and Slide culture. Also, all the experiments performed into the laminar to avoid contamination also precaution was taken.

DISCUSSION

We have reported a case of patient who undergone abdominal surgery and developed Aspergillosis. Colour on SDA agar of *A. fumigatus* is olive green on surface view and uncolored to cream on reverse view. The colony texture is wooly. The outer edge of the colony is white. The macro-micro culture and slide culture revealed that the isolated pathogen was *A. fumigatus*.



A



B

Fig. 1: *A. fumigatus* (Photograph taken at 40x) (Slide culture)

Multiple abdominal visceral infections by *A. fumigatus* occurred in a female aged 37 years after laparostomy for Crohn's disease [8]. These infections are usually indolent, in some cases occurring several months after surgery [9]. Olushola *et al.* [10] reported a case of a 61-year-old cardiac transplant patient who developed a disseminated infection involving the upper extremity with a fungus known as *Aspergillus*. Histological staining of tissue from the skin biopsy and intra operation specimen demonstrated invasive fungal elements. The repeats of the experiment i.e. again the sample of the same patient was collected and inoculated for same growth observed.

CONCLUSIONS

Post-operative aspergillosis seems to be an underappreciated problem. Several reasons have been proposed for the increase in invasive fungal infections, including the use of anti-neoplastic and immunosuppressive agents, broad-spectrum antibiotics, and prosthetic devices and grafts, and more aggressive surgery. Invasive fungal infections in surgical patients are life threatening. The possibility of fungal infections should always be considered, especially in cases where the infection occurs a week or more after the surgery. Microbiological cultures of biological fluids and tissue for the detection of an invasive fungal infection require multiple days and occasionally weeks for the identification of a specific fungal pathogen. In order to improve the outcome, better diagnostic methods are needed. Infected patients should receive during surgery. Prevention of these infections should include special care of the ventilation system in the operating theatre and adequate sterilization techniques.

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