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Review article

Candida pericarditis: A rare case report

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ABSTRACT

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Fungal pericarditis is a rare entity especially in an immune competent host. Here we report a rare case of *Candida albicans* causing pericarditis in a 4 year old immune competent child. She presented with high grade fever and difficult breathing. The diagnosis was made by X ray Chest and confirmed by microbiological investigations on the drained pus material. The patient did not respond to surgical intervention and antimicrobial therapy and succumbed to her illness.

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1. Introduction

Pericarditis is inflammation of the pericardial sac surrounding the heart and the origins of the greatvessels. *Candida pericarditis*, first described in 1967, is an uncommon medical and surgical emergency caused by *Candida* infection of the pericardium. The clinicopathologic features of *Candida pericarditis* result from compromised cardiac performance and progressive inflammation. Thus, unless it is recognized early, *Candida pericarditis* has been shown to cause severe systemic sepsis, cardiac tamponade, and death. Over the last three to four decades *Candida* species have become the fourth cause of blood infection in hospitals. This is a result of the widespread use of antibiotics, prolonged immune-suppression, such as hematologic malignancies and transplants,

intravascular catheters, serious burns, premature babies, abdominal surgery and intravenous drug use (Glenn, 1997). Herein we report a four year old female child with pericarditis due to candida albicans.

2. Case report

A previously healthy four year old female presented to the casualty department of Dr. Ram Manohar Lohia Hospital & PGIMER with history of high grade fever for past fifteen days and was having respiratory distress since past seven days. On admission, her general condition was poor, weight 15 kg, febrile (temperature -101°F), pulse rate was 160/min, blood pressure was 70/50mmHg. On per abdomen examination, liver was palpable 3.5cm below costal margin and spleen was not palpable. On cardiovascular examination, heart sounds were muffled and there was bubbling sound around pericardium. On respiratory examination, air entry was equal on both lungs and bubbling sound heard around pericardium. Central nervous system was within normal limits. Immediately patient was intubated and shifted for further management in paediatric ICU.

2.1. Investigations

Laboratory findings showed- white blood cell count was 25,000/mm³ (Polymorphs 85%, Lymphocytes 13%, Eosinophils 1%), Hemoglobin 10.4 gm% and platelet count 60,000/mm³. Erythrocyte sedimentation rate was 21mm in the first hour. Serum Na +, K +, Ca ++, total bilirubin, direct bilirubin, AST, alkaline phosphatase, total protein, BUN and immunoglobulin profile were all within normal limits. Her HIV status was non-reactive & HBsAg and HCV was negative. X-ray chest was done immediately suggestive of pyopneumopericardium i.e. air and pus seen in the pericardium and bilateral pleural effusion (photograph 1). Ultrasound suggestive of mild ascitis, bilateral pleural effusion more on right side than left and pericardial effusion. Immediately ultrasound guided pericardiocentesis done. About 60ml of dark serosanguinous thick fluid was aspirated and sent for cytology, bacterial & fungal culture. Pus cytology showed field full of pus cells, proteins 2.6gm/dl and sugar 61mg/dl. KOH mount showed budding yeast cells along with pseudohyphae (photograph 2). Gram stained smear also showed budding yeast cells and pseudohyphae. No bacterial element was visualised in wet mount. The aspirated fluid was inoculated on to the blood agar, MacConkey agar & Sabouraud Dextrose agar. Next day, there was no growth on blood agar & MacConkey agar and plates were reincubated for further 24 hrs. After 48 hrs of incubation on Sabouraud Dextrose agar, cream coloured, soft, smooth & pasty colonies were seen. Gram stain from colonies showed oval budding yeast cells along with pseudohyphae. Germ tube was positive. The isolate was inoculated on Hi Chrome agar & in automated system (Microscan WalkAway 40plus system) which identified the isolate as *Candida albicans*. The blood and urine cultures did not reveal growth on SDA, blood agar, and MacConkey agar. The oral, throat swabs and stool culture showed no fungal growth.

2.2. Treatment and outcome

Patient was started on meropenem, vancomycin & Amphotericin B. However her condition deteriorated & succumbed to her illness after twelve days of antimicrobial therapy by cardio- respiratory arrest.

2.3. Discussion

Purulent pericarditis, a localized infection within the pericardial space, has become a rare entity in the modern antibiotic era. Viral infection is the most common cause of pericarditis, while other causes include bacterial infection, myocardial infarction, trauma, malignancy, uremia, hypothyroidism, collagen vascular disease, and the effects of certain drugs, notably hydralazine and procainamide. Many infections that cause pericarditis, particularly fungal and nonbacterial infections, occur most often in immunocompromised patients (Krishan, 2002). *Candida* infection is a form of hematogenously disseminated disease. First, antibiotic therapy, a major predisposing factor for *Candida* pericarditis, has been shown to promote fungal colonization of various organs, such as the skin, airways, and urinary tract, probably by facilitating superinfection. Second, immunosuppressed conditions such as malignancy or chronic steroid therapy have been identified to render patients susceptible to *Candida* infections (Reuven, 1997). In this case patient must have taken antibiotics. The pathogenesis of pericarditis is that large acute accumulations of pericardial fluid may cause intrapericardial pressure to rise, thereby impeding filling of the right side of the heart through the superior vena cava and inferior vena cava. Acutely, this situation can result in cardiac tamponade. If the pericarditis process continues and the fluid organizes into a thickened (even calcified) coating, the resultant constrictive pericarditis may mimic restrictive cardiomyopathy (Krishan, 2002). The clinical

presentation of Candida pericarditis is often nonspecific, prompt diagnosis of this syndrome can be difficult. When pericarditis is suspected, an electrocardiogram and a chest radiograph should be obtained. If more than 250 mL of fluid has accumulated, the cardiac silhouette is usually enlarged on the chest radiograph. Smaller accumulations may appear normal. The diagnostic test of choice is two-dimensional Doppler echocardiography which shows the characteristic swinging motion of the heart that gives rise to electrical alternans (Krishan, 2002). Emergency pericardiocentesis can be lifesaving in such patients and for continuous drainage, a catheter may be left in the pericardial sac, or a pericardial window may be created surgically (Krishan, 2002). In this case diagnosis of pericarditis was made on X ray chest PA view. The condition of the patient was critical and hence Doppler test could not be done. Ultrasound-guided pericardiocentesis facilitated the diagnosis by yielding a sample of pericardial fluid for microbiologic analysis. Repeated isolation of Candida species in cultures from pericardial fluid along with evidence of acute inflammation, establish a definitive diagnosis. Treatment of most patients diagnosed while having active disease included a combination of antifungal agents, pericardiocentesis, and operative drainage. The combined administration of amphotericin B with flucytosine has been reported as well (Reuven, 1997). Our patient was started on Amphotericin B but her condition deteriorated and she succumbed to her illness after twelve days of admission.

In conclusion, Candida pericarditis is a rare syndrome that should be suspected in pericarditis cases. The diagnosis should be established by microbiologic or histologic identification of Candida in pericardial fluid or tissue. Treatment includes antifungal agents in combination with pericardiocentesis and operative drainage. Unless it is treated, Candida pericarditis is highly lethal, but prompt diagnosis and treatment results in a favourable outcome.

References

- Glenn, e., Mathisen., johnson, p., 1997. Brain abscess. *Clinical infectious diseases.*, 25, 763–81.
- Krishan, k., Goyle, a., walling, d., 2002. Diagnosing pericarditis. *American Family Physician* volume 66, number 9 november., 1, 1695-1702.
- Reuven, R., Damian, S., Philip, O., Jeffrey, R.G., Jocelyn, J.S., 1997. Candida pericarditis, clinical profile and treatment *Ann. Thorac. Surg.*, 63,1200–4.



Photo. 1. X ray Chest PA view showing Pyopneumopericardium