



Case Report- Rarest Presentation of Actinomycosis with Pericardio-Pleural Effusion & Ascites

KEYWORDS

Actinomyces, Pericardio-pleural effusion and ascites.

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ABSTRACT *Background-* Actinomycosis is a uncommon disease caused by *Actinomyces spp.*, Gram-positive, anaerobic or microaerobic bacteria that normally colonize the human mouth and GIT and genital tracts. rarely cardio-pulmonary actinomycosis with peritoneal involvement.

clinical case- 29 years old female came with presentation of right lower chest pain with severe shortness of breath and low grade fever last 4 hrs . O/E dental caries ,right chest bulging with diminished breath sounds,distended abdomen ,raised WBC counts, normal ECG, Chest X-Ray showed right sided pleural effusion and bilateral opacity & pericardial effusion and ascites which were confirmed by 2D echo ,CT chest & abdomen . Finally she was diagnosed as an actinomycosis israelii on based of culture and biopsy.

Conclusion-Patients with actinomycosis require prolonged high doses of penicillin G or amoxicillin and other sensitive antibiotics and drainage. Early diagnosis will reduce the hospital stay or mortality in such kind of patients.

Introduction-

Actinomycosis cases are found very uncommonly across the world around 1 in 2,00,000 population with presentation of mouth, GIT and genital lesion. Actinomycosis occurs due to actinomyces sp., actinomyces israelii or actinomyces odontolyticus as gram positive, anaerobic or microaerophilic filamentous bacilli. It is rarely present as cardiopulmonary or abdominal actinomycosis. Previously few cases were reported as cardiac , pulmonary actinomycosis but we are reporting first time a rarest case of cardiopulmonary-abdominal actinomycosis with presentation of pericardial effusion , pleural effusion and ascites.

Case Study-

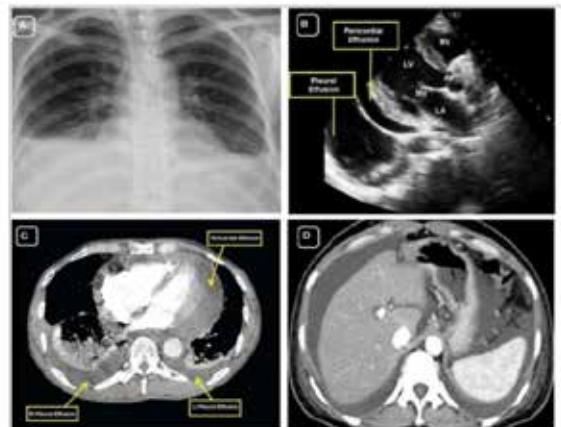
29 years old female was admitted in emergency department with presentation of severe breathlessness, poor mental status and drowsiness, pulse rate 141 beats per minute, respiratory rate was 37 /min , low grade fever, spo2 -66% very low. Immediately she was shifted to medical & cardiac combined ICU at our medical centre.

In actual way she was referred to us by gynaecologist from different private hospital. according to patient's husband she was admitted under her department 2 days ago with history of acute abdominal pain , chest heaviness and 3 months of amenorrhea without evidence of intrauterine device. As per ultrasonography gynaecologist suspected either small ill-defined ovarian mass or ectopic pregnancy subsequently she was shifted to gynae operation theater for mass removal. on the table there was different type of ovarian mass with pelvic and peritoneal fluid collection rather than ectopic pregnancy. finally mass was removed safely. Treating surgeon was suspected tubercular or malignant lesion , so fluid sample & mass piece sent for culture and biopsy. Same day of post operative procedure patient had sudden episode of severe breathlessness, very low oxygen saturation, tachycardia, tachypnea and low blood pressure . due to isolated gynae centre she was referred to our medical centre.

In ICU we kept on oxygen and head-down position with

support of IV assess and IV fluids, ionotropes and other supportives. On the examination poor mental status, dirty oral cavity with dental caries due to chronic tobacco chewer , pallor, leg edema, and abdominal distention, blood pressure - 98/48 mmHg, pulse- 141 beats/min, jugular venous pressure of 7 cm, no pulsus paradoxus, no pericardial rub, muffled heart sounds, no murmur, right chest bulging with diminished breath sounds and no neurological deficit. Electrocardiogram showed low voltage otherwise normal ST-T changes and Chest x-ray revealed pleural effusion and pericardial effusion (figure-1A).

Figure-1.(Imaging.Tools)

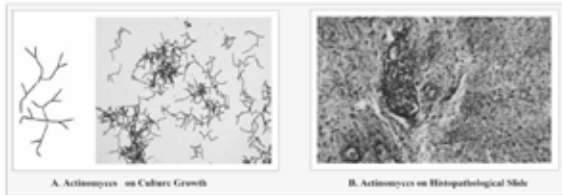


Chest x-ray revealed pleural effusion and pericardial effusion (figure-1A). which were confirmed by 2D echo (figure-1B) and CT chest (figure-1C) , followed by CT abdomen (figure-1D) revealed ascites without any mass or lesion .

which were confirmed by 2D echo (figure-1B) and CT chest (figure-1C) , followed by CT abdomen (figure-1D) revealed ascites without any mass or lesion . 2D Echocardiography revealed pericardial and pleural effusion without evidence of cardiac tamponade or constrictive pericardi-

tis. Initially she was suspected as tubercular or malignant lesion based on tapped pleural and ascitic fluid but she was ruled out for same due to normal range of Adenosine deaminase ; ADA, ADA-2 and Gama-interferon value or cytology. Finally she was diagnosed as an actinomycosis israelii on based of culture and biopsy. Culture showed branched elongated bacilli (figure-2A) and histopathological examination from the ovarian mass showed presence of chronic abscess with acute and chronic inflammation, surrounding granulation tissue and fibrosis (figure- 2B). A few characteristic filaments of organisms are noted which are PAS positive. No evidence of malignancy or granulomatous inflammation.

Figure- 2.(Microscopy & Histopathology)



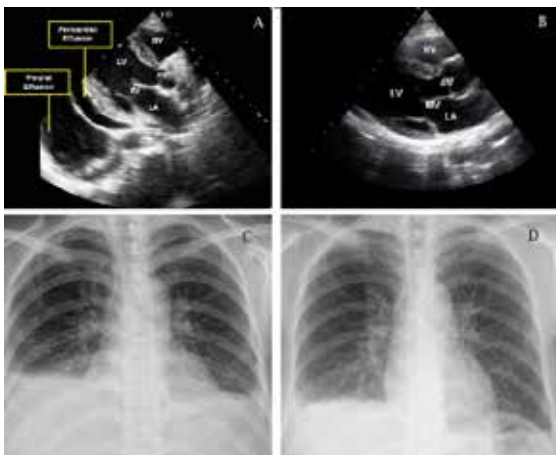
Culture showed branched elongated bacilli (figure-2A) and histopathological examination from the ovarian mass showed presence of chronic abscess with acute and chronic inflammation, surrounding granulation tissue and fibrosis (figure- 2B).

As per antibiotic sensitivity she was treated with imipenem plus cilastatin and amoxicillin plus clavulonic acid intravenously for 2 wks with support of pericardial and pleural drain followed by oral amoxicillin-clav for next 6 wks and other supportives. No surgical interventions were required.

After 6 wks follow-up he became asymptomatic and recovered clinically and radiologically

We can see in figure-3 (A) before treatment- 2D Echo PLAX view showed pericardial and pleural effusion. (B) after treatment-2D Echo PLAX view showed clear. In figure-3 (C) before treatment- X-Ray chest PA view showed pericardial and pleural effusion. (D) after treatment- X-Ray chest PA view showed clear.

Figure-3. (Imaging Tools)



(A) before treatment- 2D Echo PLAX view showed pericardial and pleural effusion. (B) after treatment-2D Echo PLAX view showed clear. In figure-3 (C) before treatment-

ment- X-Ray chest PA view showed pericardial and pleural effusion. (D) after treatment- X-Ray chest PA view showed clear.

Discussion-

As per morphology actinomyces israelii is an elongated branching gram positive bacilli, anaerobic or microaerophilic at 35 to 37 degree C temperature with slow growth on blood agar in 4-7 days or molar tooth appearance. It usually present as flora of mouth and female genital tract. In the lab , surface granules in the pus specimen, finely branching filamentous bacilli on direct gram smear and acute or chronic inflammation with surrounding granulation tissue & fibrosis on histopathological slide are diagnostic tools for actinomycosis. Apart from usual presentation , actinomyces affects heart, lung and abdominal cavity rarely found in US or rarest in developing countries like india. last three decades few case reports had published on actinomycosis with cardiac or pulmonary manifestation and we are presenting now a very rarest case with thoraco-abdominal or cardiopulmonary-abdominal actinomycosis.

Thoracic actinomyces commences in the lung, probably as result of aspiration of actinomyces from the mouth. Sinuses often appear on the chest wall, ribs and spine may be eroded. Primary endobronchial actinomycosis is an uncommon complication of inhaled foreign body. Also its involve in pleura and pericardium represent pleural effusion and pericardial effusion followed by tamponade with history of shortness of breath and chest pain , muffled heart sounds and diminished breath sounds. Abdominal actinomycosis commence in the appendix or less frequently in colonic diverticulae. Pelvic actinomycosis occurs occasionally in women fitted with plastic intra-uterine contraceptive devices. actinomycosis have been isolated from cases of chronic granulomatous disease.

Thoracoabdominal actinomycosis is rare and fatal condition . ultimately it is responsible for rapid collection of pericardial , pleural or peritoneal fluid and leads to progression of severe sepsis. So all physicians should be aware about this fatal condition and its long term management by optimal drainage and prolonged uses of sensitive antibiotics like penicillin G or amoxicillin, imipenem or dorepenem, and sulfamethoxazole/trimethoprim. initially we should treat vigorously with intravenous therapy for 2 weeks atleast followed by oral antibiotics for 4 to 6 months.

Conclusion-

Physicians should aware about rarest presentation of actinomycosis with regular followup. Patients with actinomycosis require prolonged high doses of penicillin G or amoxicillin and other sensitive antibiotics and drainage. Early diagnosis will reduce the hospital stay or mortality in such kind of patients.

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