Case Report

Mediastinitis Presenting as Pyrexia of Unknown Origin

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Abstract

A 55 year old female was admitted as a case of pyrexia of unknown origin (PUO) of 2 months duration. She had developed throat ache, progressive dysphagia for both solids and liquids, dry cough and retrosternal pain for one week. Examination revealed fever, tachycardia, tachypnoea and a soft tissue warm tender, erythematous, non-fluctuant swelling in lower anterior neck with chest findings suggestive of bilateral pleural effusion. Plain X-rays of the neck and chest strengthened the clinical suspicion of cellulitis of lower neck with bilateral pleural effusion. CT scan confirmed the radiologic findings and also revealed pericardial effusion and thickening; small mediastinal lymphadenopathy and mediastinitis. Patient responded to parenteral antibiotics (ceftriaxone and metronidazole) and hydrocortisone with complete resolution in 10 days.

INTRODUCTION

Pyrexia of unknown origin (PUO) is a vexing problem for the physician and at times the most demanding of all challenges. Determining the cause of PUO requires great skill and diligence. We report here an interesting case who presented as PUO secondary to mediastinitis.

CASE REPORT

A 55 year old female presented with low to moderate grade fever of 2 months duration accompanied by pain in throat and progressively worsening dysphagia both to pain in throat and retrosternal and bilateral upper chest pain. She was a known case of bronchial asthma and hypertension controlled on inhalational steroids and ß2-agonists, amlodipine and enalapril. She had a history of acute myocardial infarction 3 months back for which she was thrombolysed. There was no past history suggestive of any other chronic illness including tuberculosis and diabetes mellitus.

Physical examination revealed tender, warm, erythematous, non-fluctuant, indurated swelling in the suprasternal area. Floor of the mouth was normal and there was no intraoral abnormality. There was no cervical/ supraclavicular lymphadenopathy and no obvious bulge, swelling or crepitus in bilateral supraclavicular areas. Patient was febrile (101.4°F) with BP-130/80 mm Hg. pulse 102/min regular, and tachypnoea (respiratory rate - 20/min).

On respiratory examination, trachea was in midline; upper part of anterior chest wall was tender bilaterally. Percussion note was dull and air entry was decreased in bilateral areas, more on the right side and crackles were present in left infraesophageal area. Cardiovascular, per-abdomen, nervous system and ENT examination were unremarkable.

Haematological investigations revealed haemoglobin of 10 g/dl, polymorphonuclear leucocytosis (TLC-23,000/mm3, P82, L16, E2) and ESR of 100 mm at the end of 1st hour. Biochemical and metabolic profile were normal. Blood, urine and sputum were sterile for pyogenic and fungal organisms. Repeated sputum testing for AFB, pyogenic and fungal organisms failed to show any organisms. HIV-1 and 2 was negative (ELISA). Chest roentgenogram revealed bilateral blunting of costo-phrenic angles. Pleural tap revealed proteins - 3 g/dl, sugar 84 mg/dl and cells - 20/mm3 - P10, L10. No organisms were seen on Gram or Ziehl-Neelsen staining. Lateral x-ray of neck showed soft tissue swelling anterior to trachea. FNAC did not reveal any pus but the smear cytology showed non-specific inflammation; no bacilli or fungal elements were visualized. Ultrasonographic evaluation of neck also suggested a soft tissue swelling in pretracheal area, no fluid collection was seen. A diagnosis of cellulitis was made. Upper gastrointestinal endoscopy revealed diffuse oesophageal candidiasis. Electrocardiogram was normal. Echocardiography revealed minimal pericardial effusion with normal valves and chambers, normal ejection fraction, no motion abnormality and no evidence of vegetation or clot.

Contrast-enhanced computerized tomography of the neck and chest revealed ill-defined heterodense soft tissue thickening in the lower neck anteriorly, involving the strap muscles of neck and lower poles of the thyroid gland with
soft tissue streaky densities in the subcutaneous fat (Fig. 1). There was evidence of mediastinal widening with soft tissue streaking densities and areas of fluid attenuation within the mediastinal fat. Multiple small hypodense lesions were seen in pre-tracheal, para-tracheal and pre-carinal regions suggestive of lymphadenopathy. There was evidence of mild pericardial effusion with associated pericardial thickening and bilateral pleural effusion (Fig. 2) with extension into the oblique fissures. Overall features were suggestive of mediastinitis and cellulitis in lower neck.

On repeat endoscopy there was no evidence of mucosal tear. On specific probing, patient revealed that some procedure was tried on her neck when she was admitted for acute myocardial infarction three months back. Historically, she did not have any indwelling catheter after the procedure and no report of cardiac catheterization or radiofrequency ablation or pacemaker insertion was forthcoming in the discharge notes.

The patient was treated with ceftriaxone, metronidazole and intravenous steroids for 2 weeks. Oral fluconazole was administered for a week. Patient started improving within 48 hours of therapy and was afebrile after 5 days with complete clinical and radiological resolution by the 10th day of therapy. Patient was discharged on the 14th day on cefuroxime for a week and steroids were tapered over the same period. Patient is asymptomatic for last six months, presently on antihypertensive and inhalational steroids.

**DISCUSSION**

Pyrexia of unknown origin poses a particularly troublesome problem for both the clinician and the patient. Indolent infections and malignancies rank among the important causes. It is very unusual and rare for mediastinitis to present as pyrexia of unknown origin; invariably because the patient is quite toxic and an obvious cause of mediastinitis is usually elicitable. Probable aetiology for mediastinitis in our patient was attempted central venous canulation which served as the nidus of infection for mediastinitis. The common causes of mediastinitis have been enumerated in Table 1. Rarely, tooth abscess, supraglottitis, endotracheal intubation and laparoscopic cholecystectomy may be complicated by mediastinitis. Mediastinitis may also result from blunt or penetrating trauma to the chest wall. There may be associated abscess formation but this is not essential. Infection is invariably carried by lymphatics and there may be subsequent suppuration of mediastinal nodes. Tuberculous mediastinitis is rare these days and so is haematogenous spread from infection elsewhere.

The odd features in our case were subacute presentation and recent occurrence of cellulitis. The subacute presentation may have been a consequence of numerous inadequate oral antibiotic courses which the patient had received. The cellulitis might have become overt since she did not receive any antibiotics while being investigated for PUO. Oesophageal candidiasis was possibly secondary to antibiotic therapy.
Treatment of mediastinitis includes broad spectrum antibiotics including anaerobic cover. Surgical drainage is required if pus collection is documented. Endoscopy directed procedures may help in removal of a foreign body, suturing an oesophageal tear or in conservative management of carcinoma oesophagus. Our patient responded well to antibiotics and corticosteroids and is presently symptom-free for last six months. Surgical drainage was not required.

**REFERENCES**


### Table 1. Common causes of mediastinitis

- Post-sternotomy for cardiac surgery
- Oesophageal perforation
  - Foreign body erosion in oesophagus
  - Difficult endoscopy
  - Attempts to dilate oesophageal stricture
  - Carcinoma oesophagus
  - Forceful vomiting
- Direct extension of infection from the
  - Neck
  - Retropharyngeal space
  - Lung, pleura, pericardium
  - Osteomyelitis of spine/ribs/sternum

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**Announcement**

**CME - 2003**

*Association of Physicians of India - Mumbai Branch*

*Association of Physicians of India - Mumbai Branch* is organising a **CME Program - CME 2003** on 24th and 25th May 2003 at **Hotel Taj Mahal, Mumbai**.

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