CASE REPORT

A case of tuberculous pericardial effusion

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Abstract

We report a case of an 80-year-old caucasian female in the UK who presented with weight loss and was found to have a pericardial effusion. There was neither previous exposure to tuberculosis nor any suggestion of immunosuppression. Repeated analysis of pericardial fluid established a tuberculous origin. Search of medical literature did not reveal any similar cases in the elderly in the UK.

Keywords: aged 80 and over, pericardial effusion, pericardiocentesis, tuberculosis

Case report

An 80-year-old Caucasian lady with no past history of chest disease presented with loss of appetite and tiredness following a recent chest infection. She had lost weight and felt ‘hot and shivery’ intermittently. She was not on any medication.

On examination, she was afebrile, pulse rate 97/min, regular, blood pressure 157/86 mmHg, respiratory rate 14/min, JVP not raised and heart sounds were muffled. There was no peripheral oedema, hepatosplenomegaly or lymphadenopathy. Laboratory results were normal apart from albumin 27 g/l (35–50), globulin 37 g/l (18–36), ESR 73 mm (1–20) and CRP 92 mg/l (<5.0). ECG showed low voltage complexes, sinus tachycardia and inferolateral ischaemia. Chest X-ray indicated left basal consolidation and effusion. Cardiac silhouette was slightly enlarged and globular.

Echocardiogram showed a 2.0 cm global pericardial effusion with fibrin strands and visceral pericardial thickening. There was no right heart compression. Repeat echo 5 days later showed an increase in effusion with right heart compression. An ultrasound guided pigtail catheter was inserted. Over the next few days 1000 ml of straw-coloured fluid was drained. Samples were sent daily for analysis. The fluid was an exudate. Samples sent on the 6th and 7th day stained positive for AAFB. Culture identified Mycobacterium tuberculosis sensitive to all anti-tuberculous drugs.

She had 6 months of anti-tuberculous chemotherapy [1] and high dose prednisolone. Follow-up after 2 years showed no evidence of effusion or constrictive pericarditis.

Discussion

Extrapulmonary tuberculosis occurs in 20% of patients with tuberculosis [2], which rises to over 50% in people with HIV. Tuberculous pericarditis is seen in 1–8% of these patients. The route of spread to pericardium is
usually from mediastinal or hilar nodes or from lung and rarely as part of miliary tuberculosis. Tuberculous pericarditis can present with recurrent pericardial effusion without any history or symptoms of tuberculosis.

Pericardial fluid analysis in patients with large effusion, without tamponade or suspected purulent pericarditis, have a very low (7%) diagnostic yield [3]. Meyers et al. [4] suggests that routine pericardial fluid analysis may be limited to bacterial culture, cytology, cell count and protein. Fluid cytology has a sensitivity of 92% and specificity of 100% for malignancy. Culture positive fluid had more neutrophils. Serous pericardial fluid was suggestive of idiopathic origin.

Thickened pericardium and fibrinous strands [5] on echocardiography, predominant lymphocytes and high adenosine-deaminase activity [6] in pericardial fluid are useful in diagnosing tuberculous effusion. Exudative pericardial coating is sensitive but less specific for tuberculosis (found in malignant and purulent effusions). PCR is the gold standard diagnostic test in cases where other tests are negative [7].

Treatment of tuberculous pericarditis is by standard antituberculous chemotherapy. Corticosteroids help in rapid improvement of symptoms and reduce mortality, but do not influence the resolution of pericardial effusion [8].

Early cardiac tamponade is a good predictor of subsequent constrictive pericarditis [9] presenting in up to 50% of patients. Where complete drainage of fluid by pericardiocentesis is not possible, transcatheter intra pericardial urokinase [10], if given early, helps fibrinolysis and drainage.

Incidence of tuberculosis is rising due to HIV, migrant population and drug resistance. Tuberculous pericardial effusion in an elderly patient with no risk factors or previous exposure to tuberculosis is rare. Our case demonstrates the need for a high index of suspicion for tuberculosis in any case of pericardial effusion. Repeated samples for analysis may be more productive than a single sample. When available PCR should be the choice of investigation. PCR testing may decrease the number of cases classified as idiopathic.

Early diagnosis, antituberculous chemotherapy and high dose steroids should decrease the incidence of pericardial constriction and mortality following tuberculous pericarditis.

**Key points**

- Tuberculous pericardial effusion though uncommon is being increasingly found, especially in immunosuppressed persons.
- Thickened pericardium and fibrinous strands on echocardiography are suggestive of infective aetiology.
- Tuberculous pericarditis can present without any previous history of exposure to tuberculosis. A high index of suspicion should be maintained in every case of pericardial effusion.
- Repeated samples for analysis may be more productive than a single sample.
- PCR is diagnostic and is the gold standard.

**Acknowledgements**

We would like to thank Christopher Hesketh for the echocardiography images.

**References**


