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Case report

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Right atrial rhabdomyosarcoma presenting with recurrent pericardial effusion and haemoptysis: a case report

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Abstract

We report on a 33-year-old female with exudative pericardial effusion and elevated ADA enzyme initially thought to be tuberculous. Atrial rhabdomyosarcoma was diagnosed when pericardial effusion recurred, and haemoptysis developed while on treatment for tuberculosis.

Introduction

Primary neoplasms of the heart are rare with rhabdomyosarcoma responsible for 20% of these lesions [1]. Rhabdomyosarcomas can affect any cardiac chamber [2]. Unfortunately, by the time the patient becomes symptomatic, the tumour has usually metastasized [3]. There is no consensus on how to treat. Furthermore, the benefits of treatment with one or more of surgery, chemotherapy and radiotherapy are unclear and prognosis is usually poor. We report on a case of right atrial rhabdomyosarcoma presented with recurrent pericardial effusion and subsequent haemoptysis which was initially treated as tuberculosis.

Patient and observation

A 33-year-old lady was referred to Nelson Mandela Academic Hospital (NMAH) from district level hospital where she presented with 2 weeks history of breathlessness and bilateral leg swelling. Blood pressure was 119/71mmHg with pulse rate of 111 beats per minute. Apex beat was not palpable and heart sounds were muffled. The lung fields were clinically clear. Examination of abdomen and nervous system was unremarkable. Chest radiograph showed a globular heart shadow with increased cardiothoracic ratio and clear lung fields. Echocardiography revealed a large pericardial effusion with right ventricular collapse. Percutaneous pericardiocentesis was done under continuous ECG monitoring and 700mls of fluid was drained. Pericardial fluid analysis showed elevated levels of protein, LDH and ADA of 51g/L (transudate <30 g/L), 5666 units/L (<200 units/L) and 42.7 units/L (>30 units/L is suggestive of TB) respectively, however, the GeneXpert was negative. Anti-tuberculous therapy and prednisolone were commenced for a presumptive diagnosis of tuberculosis because of exudative pericardial effusion and a raised ADA. She was discharged home 5 days after admission. She represented at 2 months post discharge from hospital with haemoptysis associated with pleuritic type of chest pain. This was after 2 months of anti-tuberculous therapy. Repeat chest radiograph showed globular heart shadow and multiple nodular opacities in all lung fields. Echocardiography showed that pericardial effusion had re-accumulated. Computerized tomography (CT) scan of the chest revealed a lobulated mass involving the free wall of the right atrium, pericardial effusion, and multiple nodules in the periphery of both lungs. Histology of lung tissue obtained by CT guided biopsy were in keeping with metastatic rhabdomyosarcoma. Patient´s diagnosis was then revised to rhabdomyosarcoma of the right atrium with pericardial and pulmonary metastases. She died a month later.

Discussion

Our patient was initially treated for tuberculosis as this is the commonest cause of exudative pericardial effusion in South Africa particularly with elevated fluid ADA [4]. However, the recurrence of pericardial effusion and progression of disease to involve the lungs raised concerns of alternative diagnosis. Metastatic rhabdomyosarcoma of the heart which is a rare disease that has an extremely poor prognosis was eventually diagnosed [2]. The delay in diagnosis and treatment for a pathology with a poor prognosis no doubt contributed to her early demise. While most cases of cardiac rhabdomyosarcomas have been reported in elderly patients aged above 60 years [2,3,5], our patient was relatively young at 33 years but nevertheless had an aggressive course. While our patient presented with features of pericardial effusion and subsequently haemoptysis from pulmonary metastases, stenotic lesions from mass effect involving the mitral and pulmonary valves have been reported in the literature [6]. Like other reports, our patient had metastases to the lungs and liver [3]. Treatment which may involve surgery, chemotherapy and radiotherapy is usually not accompanied by good prognosis. Perhaps, an earlier diagnosis may have been made in our patient, had cytology been done on the pericardial fluid rather than assuming that tuberculosis was

responsible for the exudative pericardial effusion. Although tuberculosis is the commonest cause of exudative pericardial effusion associated with a raised ADA in our environment, this case underscores the need to keep in mind, the possibility of other aetiologies particularly where there is no definitive microbiologic or histologic evidence of tuberculosis.

Conclusion

We have reported on a young female with the exceedingly rare cardiac rhabdomyosarcoma with the initial presentation of exudative pericardial effusion which was first wrongly treated as tuberculosis.

Competing interests

The authors declare no competing interests.

Authors' contributions

All the authors contributed to conception, design, drafting and revising of the manuscript. All authors read and approved the final manuscript.

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