If anything can go wrong, it will: management of a pericardial effusion in a young patient

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Case Report: A 25 year-old male patient with an unremarkable past medical history presented to the Emergency Department due to a hemodynamically stable wide complex tachycardia at 260bpm with no response to adenosine, which was successfully treated with synchronized electrical cardioversion. Post cardioversion EKG revealed a pre excitation pattern and the transthoracic echocardiogram showed a large pericardial effusion with diastolic right atrial collapse. The patient was admitted in the Cardiology Department for emergent pericardiocentesis and further investigation. A total of 800 mL of bloody pericardial fluid was removed, compatible with an exudate, but fluid culture and cytology were inconclusive. Due to a rapid reaccumulation of pericardial fluid, the patient underwent a pericardial window, after which he developed an intractable pleuritic thoracalgia, refractory to the combination of ibuprofen, colchicine and oral steroid, despite the resolution of the pericardial effusion. He was also submitted to an electrophysiologic study with successful ablation of a right sided accessory pathway. Analysis of the pericardial fluid and biopsy were inconclusive once again, including a low level of adenosine deaminase and negative acid-fast bacilli test and nucleic acid amplification test for Mycobacterium tuberculosis. The patient was afebrile and denied any constitutional symptoms or relevant epidemiological context. The remainder etiological study was unremarkable, with the exception of fluctuating antibody titers for adenovirus, Borrelia burgdorferi and Mycoplasma pneumoniae, which were interpreted as a result of cross-reactivity. Nevertheless, a course of 21 days of doxycycline was tried without any significant improvement. Thoracic-abdominal-pelvic CT and PET scan were normal. Direct inoculation in guinea pig led to positive results for Mycobacterium tuberculosis and antituberculous therapy was started. Despite pathogen directed antibiotic treatment, there was no clinical improvement and the pericardial effusion gradually relapsed, evolving to cardiac tamponade requiring emergent drainage. Histologic examination of pericardial fragments finally revealed massive infiltration by an undifferentiated malignant tumor compatible with a malignant epithelioid hemangioendothelioma. Due to the patient’s poor performance status and rapidly deteriorating clinical course, it was decided not to start chemotherapy. The patient eventually died, 6 months after his admission to the ED and 2 weeks after the neoplasm’s diagnosis.

Conclusion: In regions with a high Tuberculosis incidence, there should be a high degree of suspicion for tuberculous pericarditis, especially in cases of recurrent pericardial effusion. Immunosuppressed individuals, such as oncologic patients, are at an increased risk for tuberculosis. The management of relapsing pericardial effusion remains a diagnostic challenge as described in this clinical case.