Atrial Myxoma-Related to Chronic Imunosuppression: A case report

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Although rare, atrial myxoma is the most common primary tumour of the heart. Its relation to immunosuppression in solid organ transplant is presently debateable. We report the case of a 71-year-old male patient who underwent renal transplant 17 years prior. Since that time he continued high dose immunosuppression without physician consultation and presented to us with atrial myxoma and its complications raising the question of any association between immunosuppression and the development of atrial myxoma.

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Abbreviations: BD, bis in die (twice daily), OD, omne in die (once a day), MCA, middle cerebral artery, CT scan, computerized tomography, mg, milligram

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Case report

We present a case of a 71-year-old male, who underwent a renal transplant in 1995 for severe nephropathy, after which he was started on immunosuppression with 100 mg of cyclosporine twice daily (BD), 50 mg Azathioprin once daily (OD) and 5 mg Prednisolone OD. A complete evaluation was performed before the surgery as a routine preanaesthetic workup yielding no abnormality except severe nephropathy. Seventeen years later he presented to us as massive right middle cerebral artery (Rt. MCA) infarct. History revealed complaints of recurrent ischemic attacks, weakness and dyspnoea on exertion with palpitation for one year prior with insignificant past medical history except renal transplant (normal functioning graft) seventeen years prior. On physical examination vitals were all normal with left hemi paresis, slurring of speech and cranial nerve palsy. Lab investigations were all normal except mildly elevated serum creatinine to 2 mg/dl. CT scan showed Rt. MCA infarct. Initial investigation didn’t reveal any other abnormality. Later echocardiography was done which revealed the presence of mass in left atrium measuring 3.58 cm × 1.95 cm (Fig. 1). The mass had a multilobular appearance and was very mobile, suggestion potential embolism. The patient was planned for cardiac surgery after optimisation but the...
relatives refused the surgery. Patient was managed conservatively. His neurological status recovered fully and was discharged to home upon request. Further follow up with the patient revealed stable medical history until the time of this manuscript submission.

Discussion

Primary tumors of the heart are rare. Approximately three-quarters are histologically benign, and the majority of these tumors are myxomas [1]. We report a case of atrial myxoma which evolved over a long period of immunosuppression. We were unable to determine exactly when the tumour began developing but the patient became symptomatic one year prior to presenting. The most frequent type of tumors in chronic immunosuppression are lymphoproliferative disorders and squamous cell carcinoma [2], however there is no established correlation with atrial myxoma.

Very few cases of similar associations have been reported in the literature. A 65-year-old patient was reported to have developed cardiac myxoma in the left atrium following heart transplant. Immunosuppression consisted of cyclosporine, azathioprine and Prednisolone [3]. In a second case, a 51-year-old man developed myxoma following a heart transplant for ischemic cardiomyopathy and the immunosuppressive regimen included cyclosporine, azathioprine and Prednisolone [4]. A third case reported in literature was a 17-year-old thalassemic who underwent allogenic bone marrow transplant, who developed atrial myxoma with 47 days of starting the immunosuppression with cyclosporin [5]. Finally, a fourth case reported is of a 30-year-old diabetic female who underwent renal and pancreatic transplant and developed atrial myxoma after being on immunosuppression with cyclosporine, micophenolate mofetil and Prednisolone [6]. All these cases including the index case were immunosuppressed with cyclosporin, which raised the suspicion of specific association of cyclosporin medication with the development of atrial myxoma, however, this is difficult to assess due to rarity of the cardiac myxoma.

The association between neoplasm and immunosuppressive therapy is mediated through several pathogenic factors. Indirectly, immunosuppressive drugs greatly increase the post-transplant risk of malignancy by impairing cancer surveillance and facilitating the action of oncogenic viruses [7]. However, the direct pro- and anti-oncogenic actions of immunosuppressants also play an important role. Further a cell culture study demonstrated the inhibitory effect of cyclosporin on cytokine production including the IL-6 and IL-8 (cytokines know to have effect on the development of tumors) by the cardiac myxoma cells [8]. Our index case further strengthens the association of immunosuppression with the development of atrial myxoma.

Conflict of interest

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References


