An Interesting Case of Stuck Mitral Valve by Clot, Post Thrombolysis Developed Acute Right Limb Ischemia Treated with Local Catheter Directed Re-Thrombolysis Successfully

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Prosthetic mechanical valve thrombosis is seen in patients with inadequate anticoagulation, irregular medications, and lack of proper follow up. Thrombolysis is a good alternative to surgery in selected cases. Acute limb ischemia may one of the embolic complications that may occur post thrombolysis. Early PAG and catheter directed re-thrombolysis despite having high risk can further save patients from such serious complications and its sequelae.

Keywords: MVR (mitral valve replacement), PVT (prosthetic valve thrombosis), CDT catheter directed Thrombolysis, MS [mitral stenosis], PAG (peripheral angiography)

INTRODUCTION

Prosthetic valve thrombosis is a serious complication post valve replacement, mostly with mechanical valves. Mortality and morbidity associated with valve thrombosis need early evaluation and management. ECHO and cinefluoroscopic are mainstay of diagnosis of PVT. Thrombolysis has been introduced as an alternative to surgery. Major complications of fibrinolytic therapy are systemic embolization leading to acute brain infarct, limb ischemia, major gastrointestinal bleed and intracranial hemorrhage. Cautious approach to such complications can help patient to come out of these unwanted sequelae.

CASE REPORT

A Twenty-five-year-old lady underwent MVR and tricuspid repair for RHD, severe MS severe TR, four months back presented in emergency with acute severe breathlessness. She was in atrial fibrillation with fast ventricular rate and blood pressure recorded was 100/70mmhg. INR recorded was 2.14. Her blood group was B negative not available in our hospital, so surgeons advised to give thrombolytic therapy first to relieve her symptoms. Injection streptokinase 2.5 lakh unit’s bolus followed by infusion 1lakh U/hr. for 24hrs was given. Mean valve gradient reduced to 6mmhg with well opening and closing prosthetic mitral valve [figure 2/3]. Subsequently after couple of hours she started complaining of right leg Pain. On examination RT sided pulse were absent below femoral. We have done doppler which revealed clot in superficial femoral and profunda femoris due to systemic embolization post thrombolysis. We have taken her to Cath lab were PAG was done which revealed totally blocked superficial femoral and profunda femoris with some collateralized flow seen below [figure 4]. She was given local thrombolysis with STK 1lakh international units which was repeated again after five minutes. Injection Streptokinase infusion was given for further 18hrs locally. Before catheter removal repeat PAG done revealed flows in distal superficial, Popliteal, Anterior Tibial, Posterior Tibial artery [figure 5]. Injection heparin infusion was followed for another 24 hrs. Later Doppler study done also revealed good flow in right lower limb arteries. She was further mobilized and was discharged on aspirin and acitrom with advice to regular follow up.

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DISCUSSION

Prosthetic valve thrombosis is one of the serious complication post MVR. Patients having Atrial fibrillation, pregnancy, inadequate anticoagulation valve thrombosis are precursor for acute valve thrombosis [Cevik C et al 2010]. Obstructive left sided PVT is considered an indication of surgery with thrombolysis reserved for particular situations. According to AHA guidelines fibrinolysis to reserve for NYHA 3-4, with high surgical risk or contraindication to surgery. Lengyl M et al [2001] showed thrombolysis to be superior to surgery in NYHA 4 with obstructed valve. Also, it can be given to NYHA 1/2 and small thrombus after failure of heparin infusion [Bonow R O et al 1998]. The reasoning against thrombolysis in patient NYHA class 1/2 is based on the relatively low surgical mortality in this group as opposed to embolic risks of 12-17% caused by thrombolysis [Roudaut R et al 1992; Swichit et al 1980; M Rusznak et al 1983]. Our patient’s blood group was rare B Negative so surgeons in the view of symptoms advise to go for thrombolysis. To open stuck valve we gave streptokinase infusion for 24 hrs. and revealed good results[figure 2/3]. Further acute limb ischemia is the vascular emergency and limb viability carries high risk of mortality and amputation[Kasirjian K et al 2000]. The Rochester study [Ouriel K et al 1994], the surgery verses thrombolysis for ischemic lower extremity trial [the STILE trial 1994], and thrombolysis or peripheral arterial surgery trial [topas][Ouriel K, Veith F et al 1996] and others were showing that CDT should be first line treatment for acute limb ischemia and can be done under following conditions: [a] Symptoms of ischemia less than 14days, [b] no absolute contraindications to thrombolysis [c] the predicted time to reestablish flow is short enough to preserve limb viability. Referring these criteria, we have done PAG followed by CDT. Streptokinase was given again for 24hrs followed by heparin infusion. Repeat doppler study was done revealed recanalized vessels. Patient was discharged on tab Acitrom, Aspirin and other supportive drugs with advice for regular follow up.

Figure 1: 2 D-ECHO showing Obstructed prosthetic mitral valve by clot with mean gradient of 30.9mmhg
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**Figure 2**
[Figure 2/Figure 3]: 3D ECHO Post thrombolysis showing well opening and closing prosthetic mitral valve

**Figure 4**: PAG picture showing Obstructed superficial femoris and profunda femoris artery

**Figure 5**: Repeat PAG - Post local thrombolysis showing distal flows seen in Popliteal and Anterior tibial/Posterior tibial arteries
CONCLUSION

Thrombolysis for valve thrombosis may be a good alternative to surgery in selected cases at tertiary care equipped with surgical and Cath lab and Neuro care facility so that complications can be managed successfully to achieve good results. All embolic and bleeding complications should keep in mind.

REFERENCES


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