

A CASE OF SUCCESSFUL PREGNANCY WITH PROSTHETIC MITRAL VALVE COMPLICATED BY MULTIPLE ARTERIAL EMBOLISM

Prabhadevi Kodey¹, John Satish Rudrapogu², Vijaya Kumar Netala³, Srinivasa Rao Gondl⁴, Lakshminarayana Kota⁵

¹Professor and HOD, Department of Obstetrics and Gynaecology, NRI Medical College and General Hospital, Guntur.

²Professor and HOD, Department of Cardiology, NRI Medical College and General Hospital, Guntur.

³Professor and HOD, Department of Cardiothoracic Surgery, NRI Medical College and General Hospital, Guntur.

⁴Professor, Department of Cardiothoracic Anaesthesiology, NRI Medical College and General Hospital, Guntur.

⁵Professor, Department of Obstetrics and Gynaecology, NRI Medical College and General Hospital, Guntur.

HOW TO CITE THIS ARTICLE: Kodey P, Rudrapogu JS, Netala VK, et al. A case of successful pregnancy with prosthetic mitral valve complicated by multiple arterial embolism. J. Evid. Based Med. Healthc. 2017; 4(78), 4643-4645. DOI: 10.18410/jebmh/2017/928

PRESENTATION OF CASE

Arterial thromboembolism is very uncommon in pregnancy. It is associated with complications like sudden death and long-term morbidity. Heart valve thrombosis without anticoagulation is devastating. All patients with mechanical prosthetic valves must continue anticoagulation without fail. If patient wants to have pregnancy, the type of anticoagulation should be changed according to period of gestation and condition. Maternal and foetal condition should be closely monitored. In patients of heart disease with mechanical prosthetic mitral valve, pregnancy is avoided due to the risk of complications during pregnancy. But, some patients insist on having a child due to their social need in spite of dreaded complications. Such patients should have anticoagulants under supervision of cardiologist.

A 22-year-old primi of 6th months pregnancy who had mitral valve replacement with mechanical prosthetic valve 5 years ago stopped anticoagulants after conception, developed symptoms of sudden shortness of breath, vomiting, palpitations, weakness of both lower limbs and right upper limb with numbness and not able to walk of two days duration admitted as an emergency in Cardiology Intensive Care, NRI General Hospital. On examination- Patient conscious. Temperature 101°F, pulse rate-150/mt., respiratory rate- 28 cycles/minute, BP- 110/78 mmHg and SPO₂- 85% with 5 litres oxygen. Right upper limb and both lower limbs were cold. Pulse of right brachial artery and both dorsalis pedis were feeble.

Cardiovascular System- S₁ and S₂- Normal. Soft prosthetic valve click audible in mitral area. Lungs- Fine crackles present bilaterally.

Per abdominal examination- Uterus 24 weeks. Foetal parts felt, foetal heart sounds good.

Financial or Other, Competing Interest: None.

Submission 08-07-2017, Peer Review 15-07-2017,

Acceptance 27-07-2017, Published 28-09-2017.

Corresponding Author:

Dr. Prabhadevi Kodey,

Professor and HOD, Department of Obstetrics and Gynaecology,

NRI Medical College and General Hospital,

Chinakakani, Mangalagiri Mandal,

Guntur-522503, Andhra Pradesh, India.

E-mail: drprabhakodey@gmail.com

DOI: 10.18410/jebmh/2017/928



DIFFERENTIAL DIAGNOSES

1. Multiple arterial thromboembolism with prosthetic mitral valve in pregnancy.
2. Raynaud's peripheral vasculitis.
3. Multisystemic connective tissue disorder with hypercoagulability.

CLINICAL DIAGNOSIS

Multiple arterial thromboembolism with stuck mechanical prosthetic mitral valve in pregnancy.

Investigations- Basic investigations normal.

Electrocardiogram (ECG)- Sinus tachycardia.

ECHO- Stuck valve with thrombus on prosthetic mitral valve.

Transmitral Flow Peak Gradient (PPG) 25 mmHg, Mean

Gradient (MMG)- 16 mmHg, no MR. Estimated RVSP - 45 +

RAP mmHg, fair LV and RV function.

Doppler Study- Complete thrombosis of right brachial, radial and ulnar arteries with absent blood flow. Complete thrombosis of distal abdominal aorta and both common iliac arteries with significantly reduced blood flow in both the lower limbs.

Obstetric Ultrasound- Single live foetus of 26 weeks gestation. Amniotic fluid Index-4.

The diagnosis was made as post mitral valve replacement pregnancy with acute ischaemia of both lower limbs and right upper limb due to thromboembolism.

PATHOLOGICAL DISCUSSION

Improper anticoagulation leads to thrombus of mechanical prosthetic valve, which may lead to embolism in any of the vessels with mortality and morbidity to the mother and foetus.

Our patient at 6 months of pregnancy developed acute ischaemia of right upper limb and both lower limbs due to embolism from thrombosis of artificial mitral valve. Treatment- Inj. Streptokinase, IV bolus followed by hourly infusion. Diuretic furosemide, nebulisation, oxygen 6 litres/minute and cardiac monitoring given. Along with supportive, decongestants, heparin, emergency multiple peripheral arterial embolectomy done under local anaesthesia.

Surgical Notes- Bilateral femoral arteriotomy made and with number 5, 6 F Forgaty catheters clots were extracted. Brachial arteriotomy done with number 4 F Forgaty balloon embolectomy catheter. Good ante and retrograde blood flow achieved.

Post Embolectomy Echo- Mitral prosthetic valve in position. Acceptable gradient across mitral valve. No thrombus, no paravalvular leak. Fair left ventricular and right ventricular function. Ejection fraction 0.52%. Doppler study showed normal. Postoperative recovery was uneventful. Pregnancy continued with heparin and warfarin anticoagulation and patient was counselled for strict adherence to treatment pregnancy continued and the patient had normal delivery with healthy baby at term with 2.7 kgs weight. Patient had uneventful postnatal period. She conceived and delivered successfully second time with proper advise of anticoagulants and had uneventful antepartum and postpartum.

DISCUSSION OF MANAGEMENT

Venous thromboembolism¹ is rare in pregnancy, but is associated with significant maternal mortality and morbidity. Myocardial infarction, stroke and peripheral arterial thrombosis are rare in pregnant women. Arterial thrombosis is very rare in women of child bearing age. In a patient with mechanical prosthetic valve, complications are very high and morbid without anticoagulation of an artificial valve. Managing pregnancy with proper anticoagulation needs close monitoring and is still associated with complications. These complications should be treated by multidisciplinary approach to prevent maternal and perinatal morbidity and mortality.

The success of peripheral embolectomy depends on how early diagnosis is made and with prompt surgical intervention. The major factor in the recovery of the limbs is embolectomy and the time lapse between the lodgement of the embolus and the attempt to remove it. Pearen and Danzin 1933 have shown this to be true in thesis reviews of relatively large number of cases.²

Arterial embolectomy, a retrospective evaluation of 730 cases over 20 yrs. was made by Karapolar's- Wherein the most common cause of arterial embolism was atrial fibrillation, thereby concluded that extremity preservation rate was related to the time delay between the onset of symptom and surgical intervention.³ Arterial embolectomy in the upper extremity after acute occlusion was reported in 79 cases due to different reasons and affecting brachial or radial artery.⁴

Review of literature has not shown even a single report of 3 limb arterial thromboembolism in pregnancy except one pregnant patient with bilateral ischaemic limbs, where patient had paradoxical embolism and patent foramen ovale.⁵

Management of acute embolism requires a high index of suspicion, early diagnosis and multidisciplinary intervention approach. Women with mitral valve replacement contemplating pregnancy should be discussed and

counselled concerning need for modification of anticoagulant therapy. Patient should be instructed to carry an anticoagulant card.

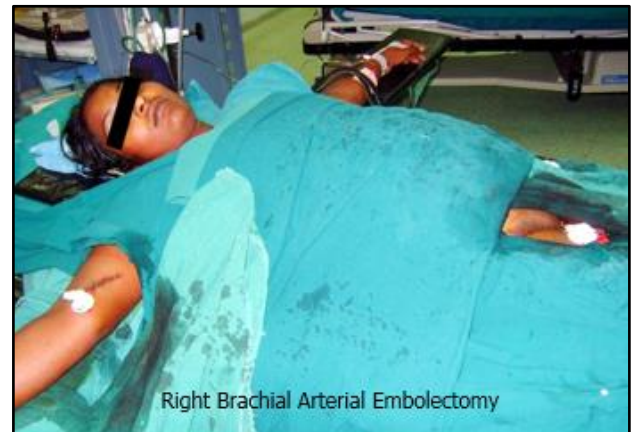


Figure 1. Right Brachial Arterial Embolectomy



Figure 2. Bilateral Femoral Arterial Embolectomy

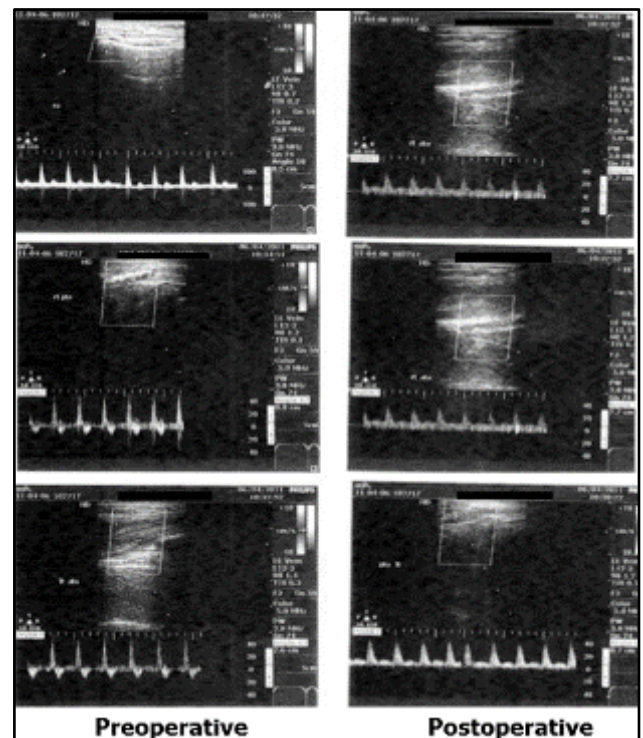


Figure 3. Doppler Study

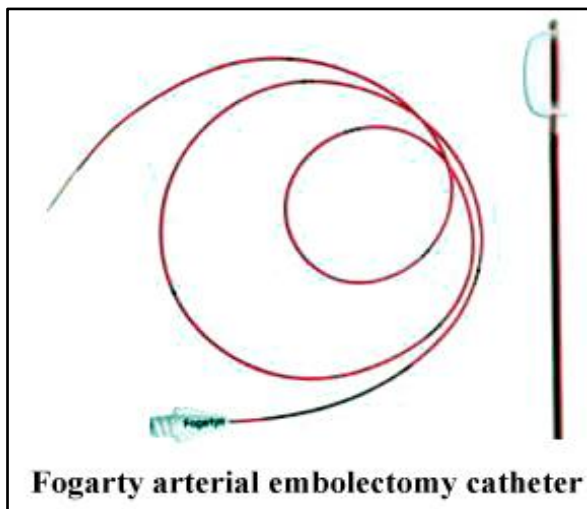


Figure 4. Fogarty Arterial Embolectomy Catheter

FINAL DIAGNOSIS

This is a rare case of multiple peripheral arterial embolism in pregnancy managed by emergency embolectomy thereby salvaging all the limbs with successful vaginal delivery of a healthy baby with uneventful postnatal period. Our case of multiple peripheral embolism in a patient of postoperative prosthetic mitral valve involving 3 limbs is very very rare, which was diagnosed early, treated properly. This maybe the

first case with three limbs involvement due to discontinuation of anticoagulation by the patient. Patient had subsequent successful second pregnancy with proper anticoagulation. Artificial valve thrombosis is associated with morbid complications. If a couple is so particular for pregnancy and childbirth even with complications, the patient should be managed with close surveillance and multidisciplinary approach.

REFERENCES

- [1] Walker ID. Venous and arterial thrombosis during pregnancy: epidemiology. *Semin Vasc Med* 2003;3(1):25-32.
- [2] Hopkins P. Peripheral arterial embolectomy. *British Medical Journal* 1945;2(4412):117-119.
- [3] Karapolat S, Dag O, Abanoz M, Aslan M. Arterial embolectomy: a retrospective evaluation of 730 cases over 20 years. *Surg Today* 2006;36(5):416-419.
- [4] Wirsing P, Andriopoulos A, Botticher R. Arterial embolectomies in the upper extremity after acute occlusion. Report on 79 cases. *J Cardiovasc surg (Torino)* 1983;24(1):40-42.
- [5] A case of migratory lymphadenopathy and cutaneous anergy in an Asian woman. *Post Grad Med J* 2000;76:663.