

～第418回東京医科大学臨床懇話会～

ステントグラフト治療後に発生した
大動脈狭窄に対する手術経験

Anesthetic Management of Apicoaortic Conduit

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Problems

- Low LV Function (SG stenosis, LVEF20%)
- Low RV Function, Pulmonary Hypertension
- Left thoracotomy (OLV, VF)
- Cerebral blood flow
- trans Aortic valve flow vs. tans Apicoaortic conduit flow
- Thrombosis of descending aorta
- Technical management (apical core out Air embolism etc.)

Methods of Anesthesia

Sedation : Ketamine → Midazolam

Propofol (target controlled infusion)

Analgesia : Remifentanil

transition to fentanyl

Muscle relaxant : Rocronium



Circulation & Respiration

Left thoracotomy without one lung ventilation

VF transcutaneous pacing pad

Beating + CPB 2L/min

Low LV function afterload NA

 inotropic DOB PDE III inhibitor

Low RV function

Pulmonary Hypertension

DOB PDE III inhibitor



Monitoring

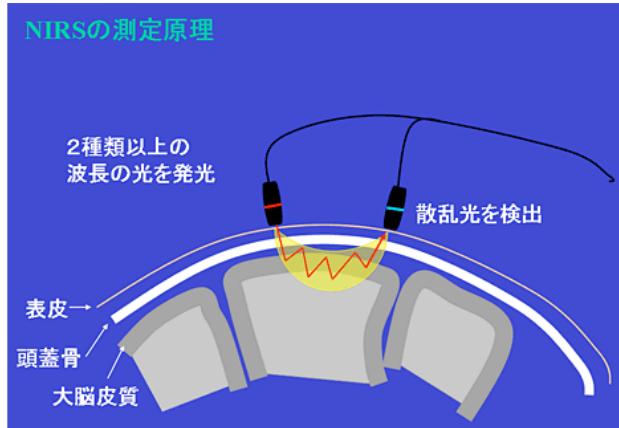
CCO, SvO₂ (PAC)

TEE evaluate cardiac function
 technical support

Epicardiac echography technical support

Cerebral Blood Flow Bispectral index monitor

rSO₂ NIRS



Expected TEE Findings After AVB Surgery

Aortic valve

Mitral valve

Left ventricle

Ascending Aorta

Descending Aorta

Aortic Arch

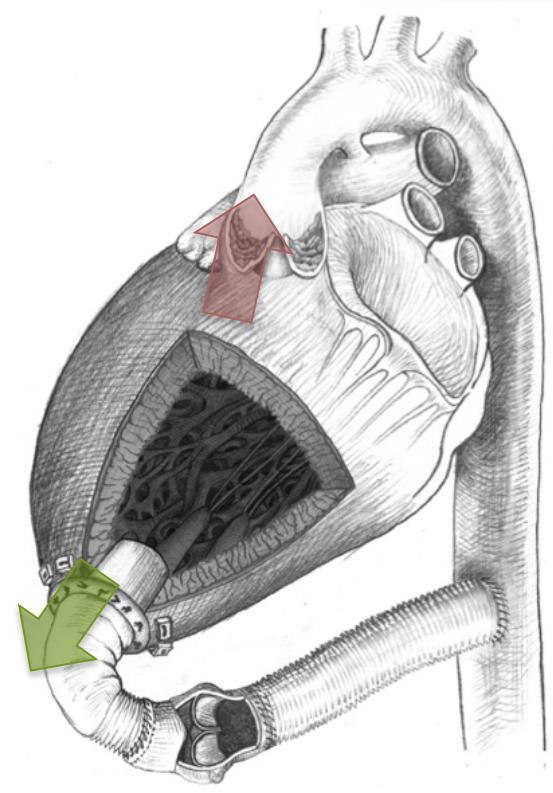
Prosthetic valve in AVB conduit (difficult to visualize)

Anesthetic Management of Patients Undergoing Aortic Valve Bypass (Apicoaortic Conduit) Surgery

Patrick Odonkor, MD Journal of Cardiothoracic and Vascular Anesthesia, Vol 26, No 1, 2012: 148-160

1. Reduction in transvalvular gradient. Antegrade flow through aortic valve with aortic valve leaflets opening and closing.
2. No change or improvement in grade of MR in absence of myocardial ischemia, papillary muscle, or chordae tendineae injury.
3. Apical conduit not impinging on interventricular septum. Improved ventricular ejection and reduction in cavity size. Absence of air in the ventricular cavity. Antegrade flow into apical conduit.
4. Antegrade flow of blood in ascending aorta. Absence of stasis or thrombus.

5. Antegrade flow through aortic end of conduit into descending aorta. Absence of aortic intimal flap (dissection). Absence of stasis or thrombus.
6. Absence of stasis or thrombus.
7. Antegrade flow across prosthetic valve.



Anesthetic chart

hANP 0.5 μ g/kg/min

PDE III inhibitor 0.2 μ g/kg/min

DOB 3 μ g/kg/min

NA 0.01 μ g/kg/min

Y-graft

conduit

VF : Amiodarone 150mg +DC

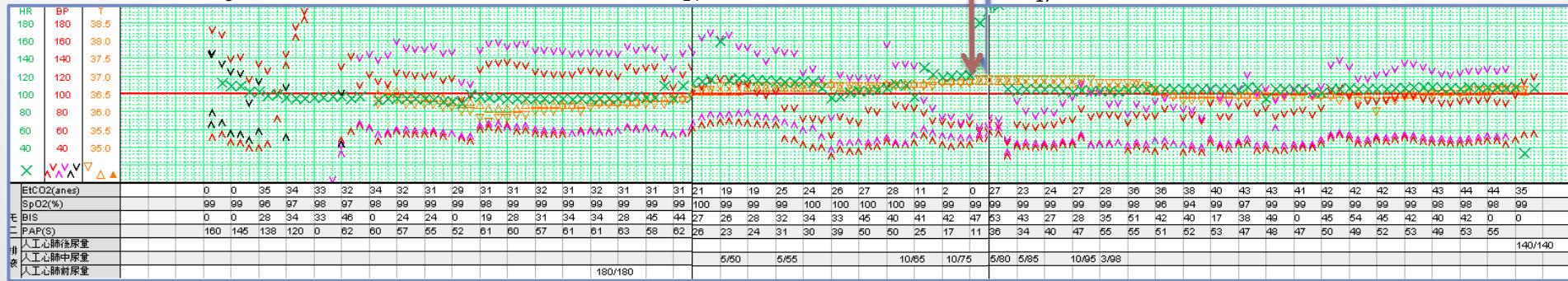
CPB 2L/min

9

14

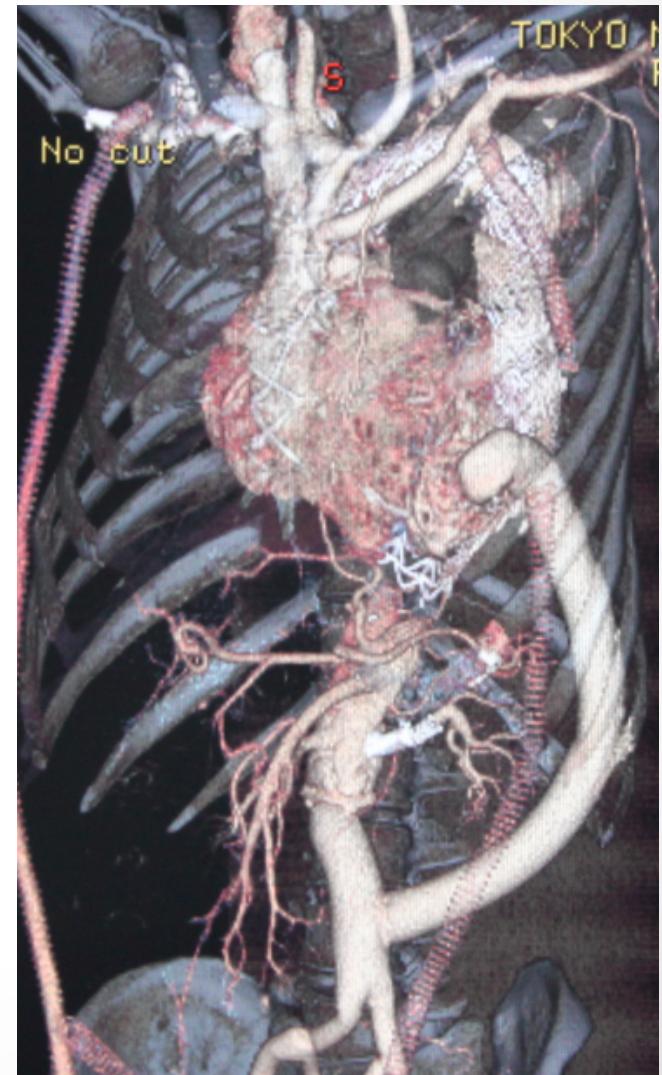
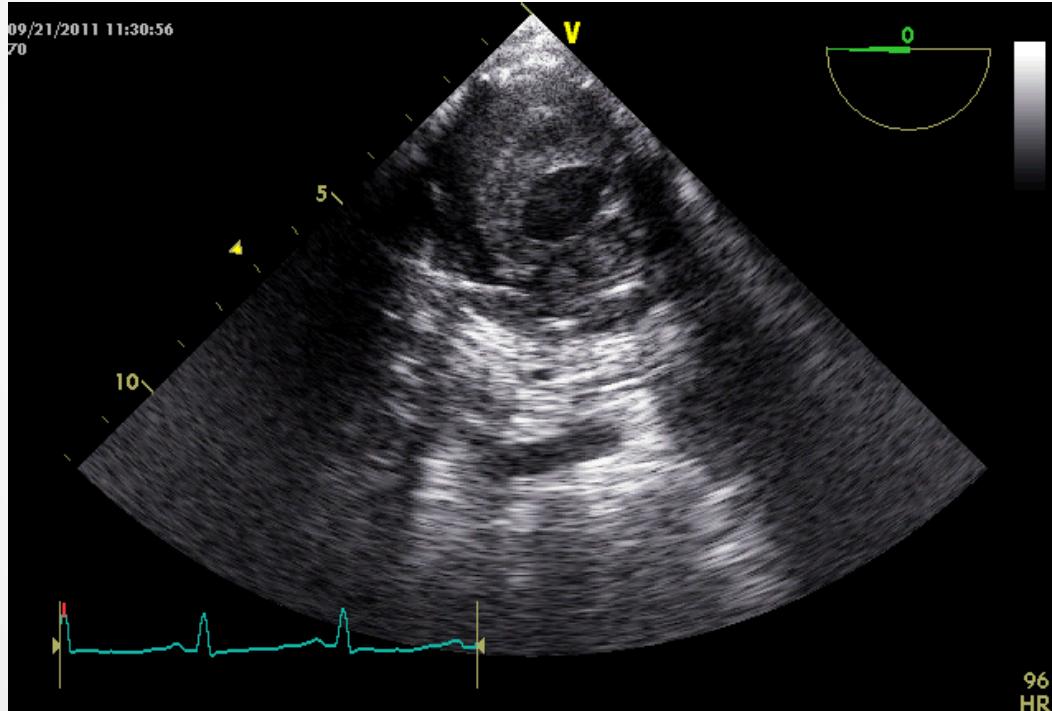
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20

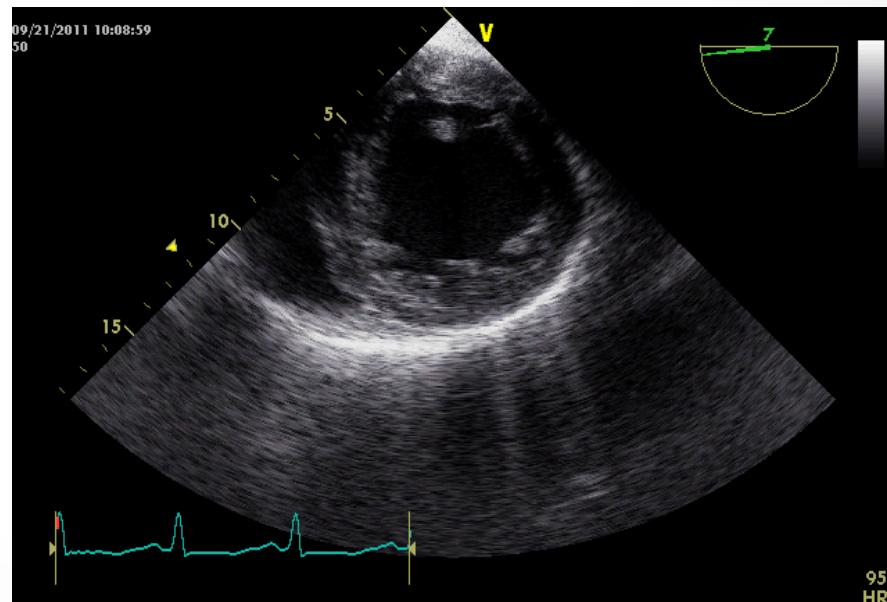
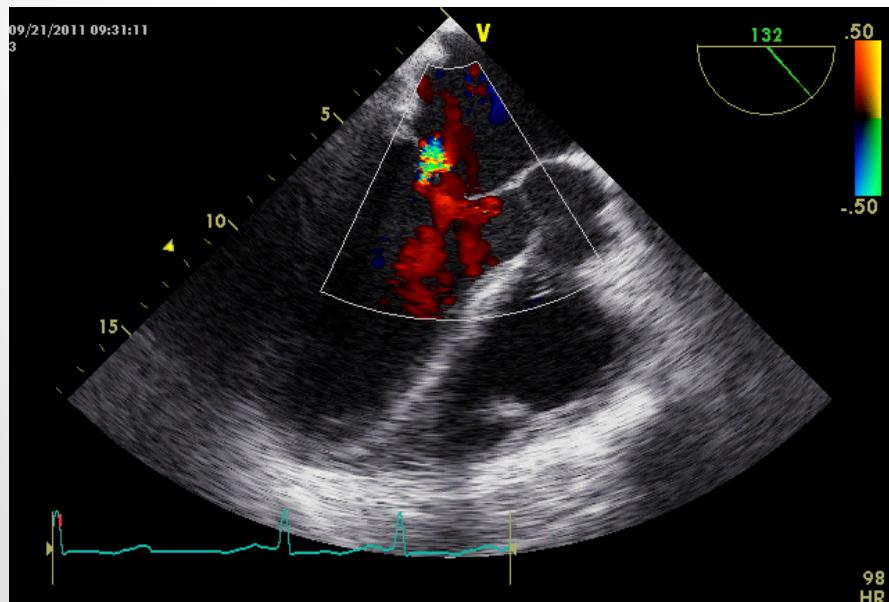
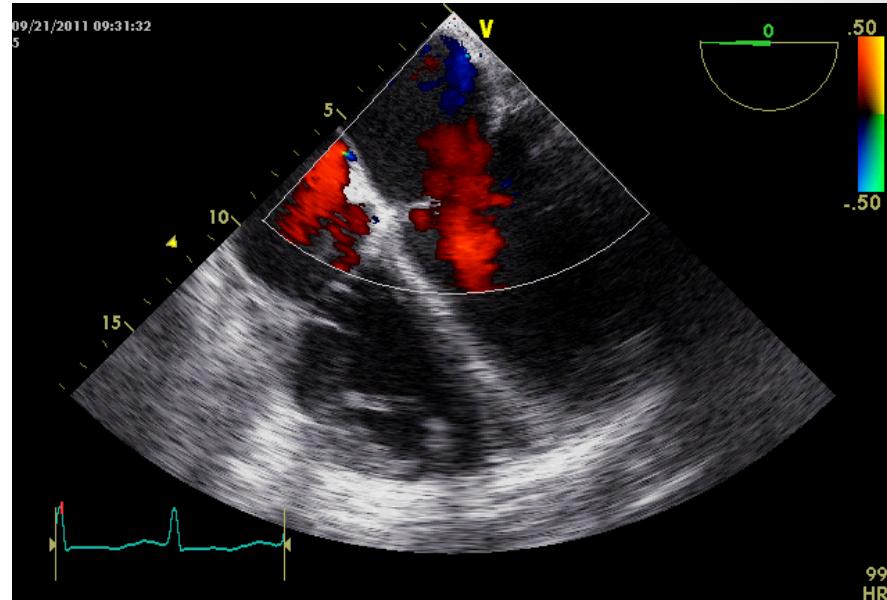
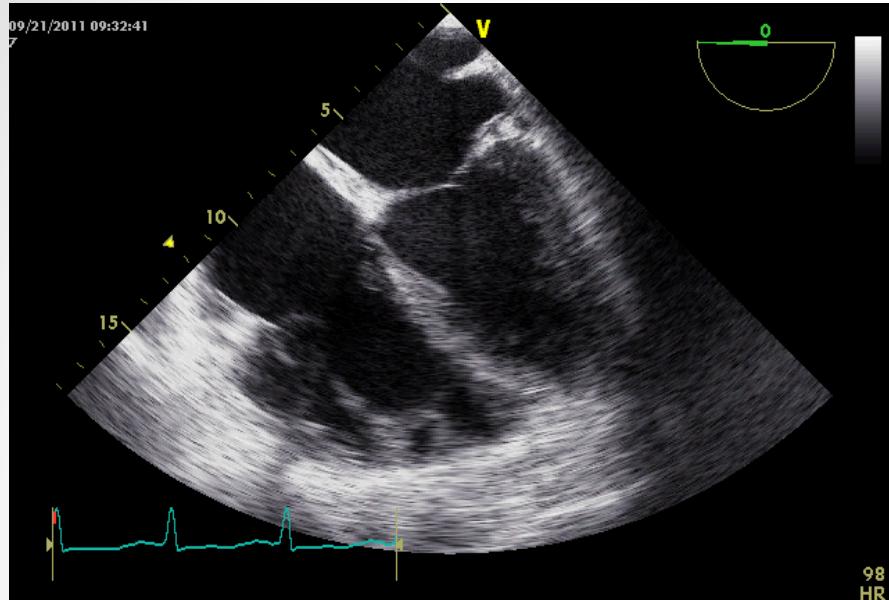


Operation time 10:19
 Anesthesia time 13:14
 RCC 10u FFP 5u Plt 40u

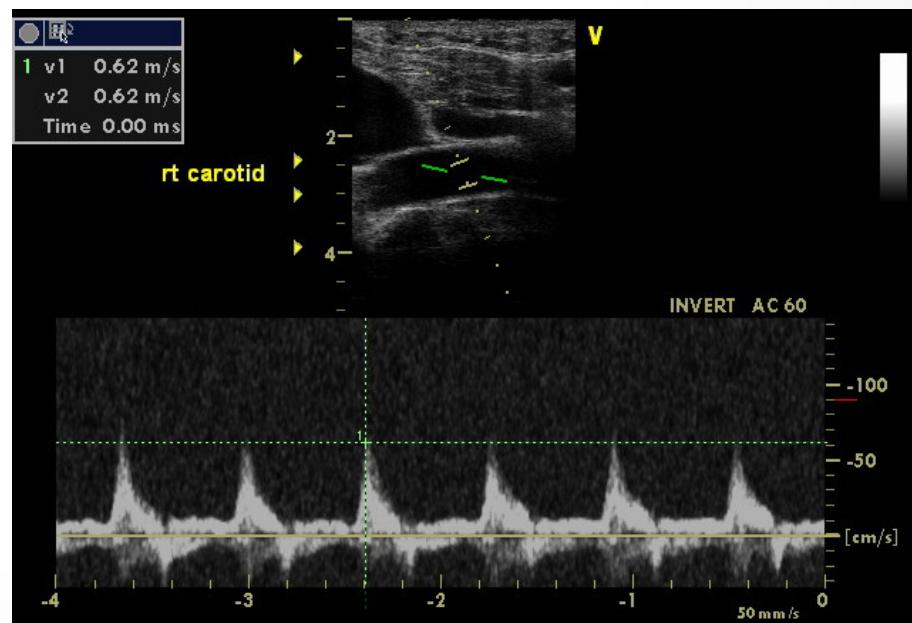
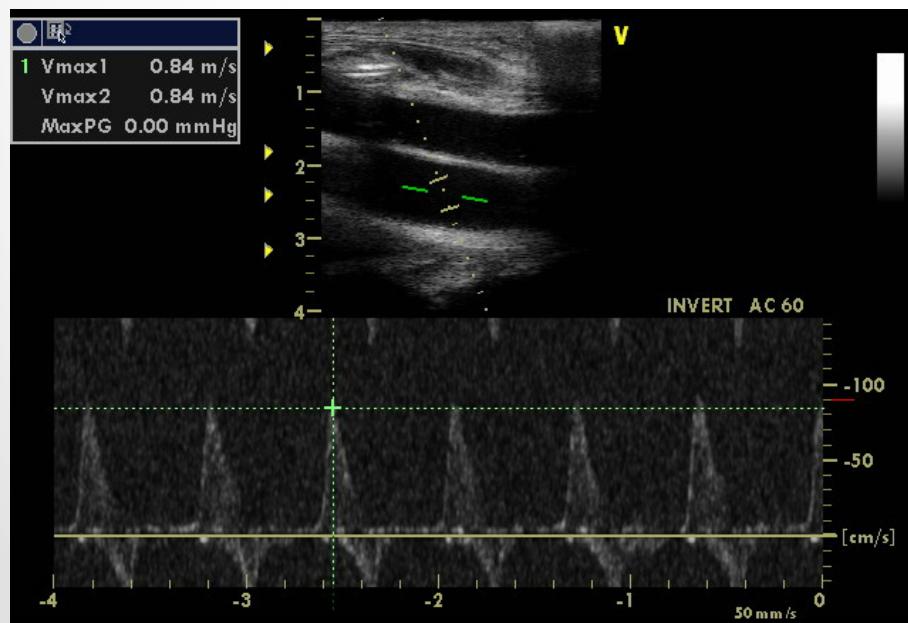
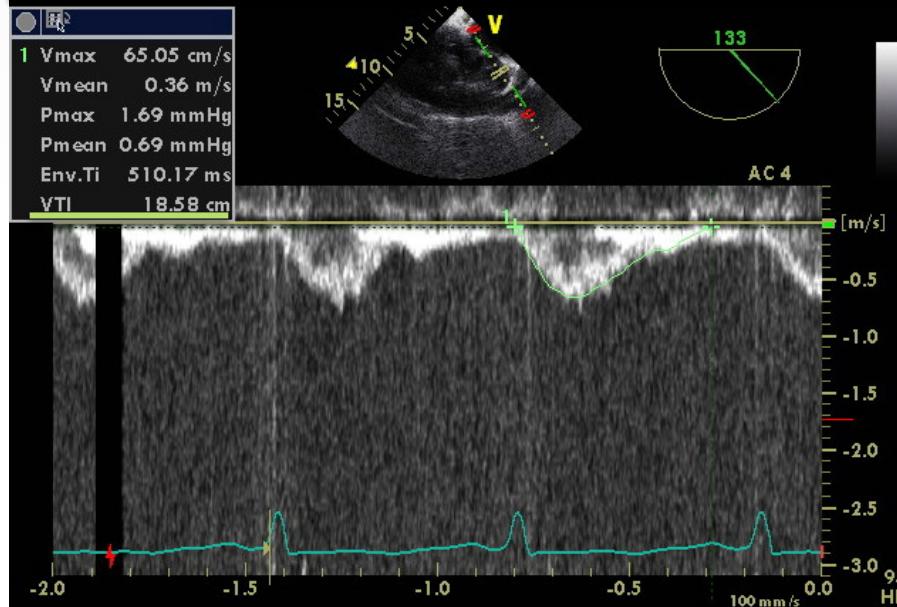
Descending Aorta



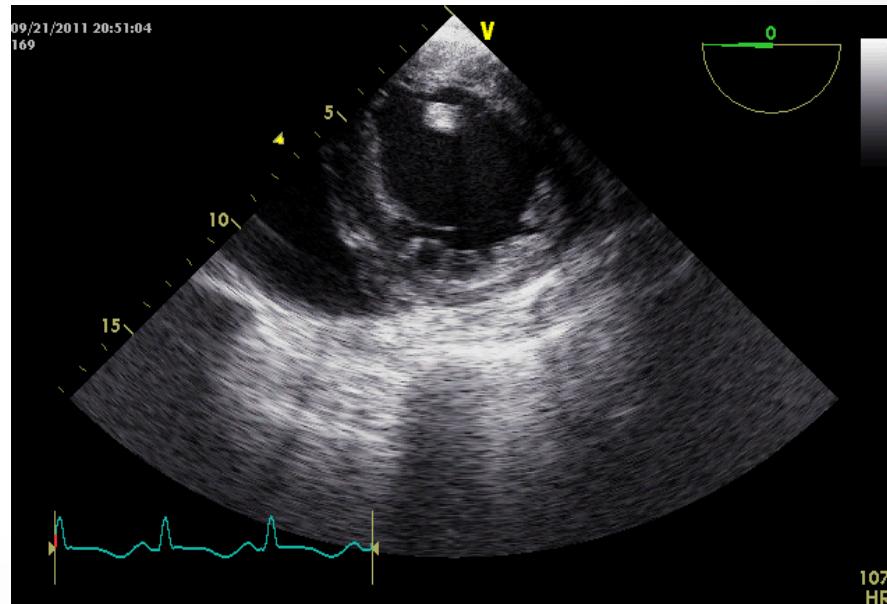
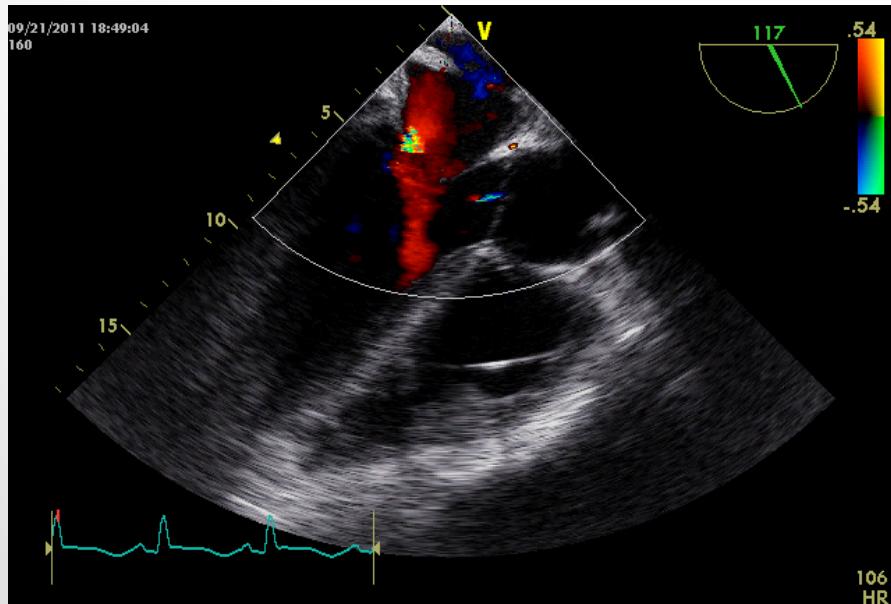
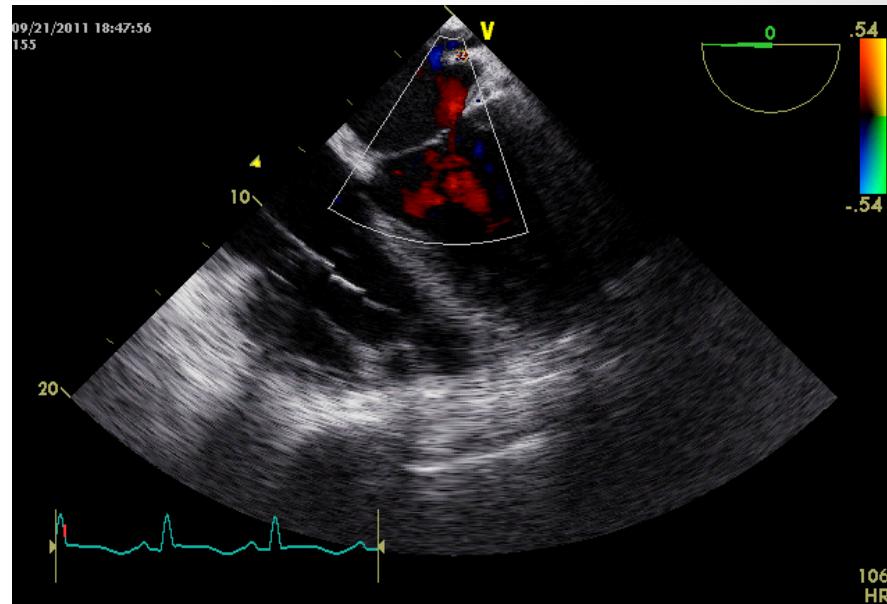
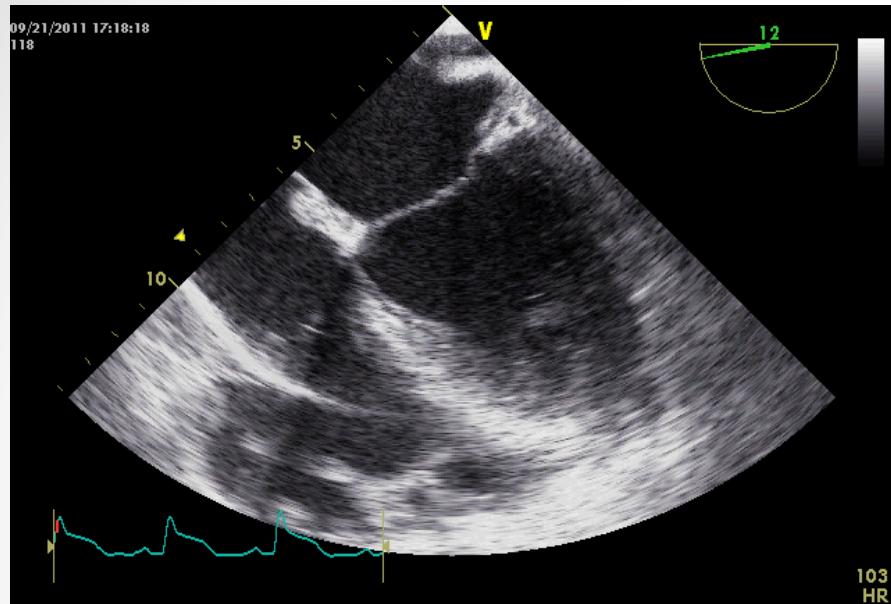
TEE Pre operation



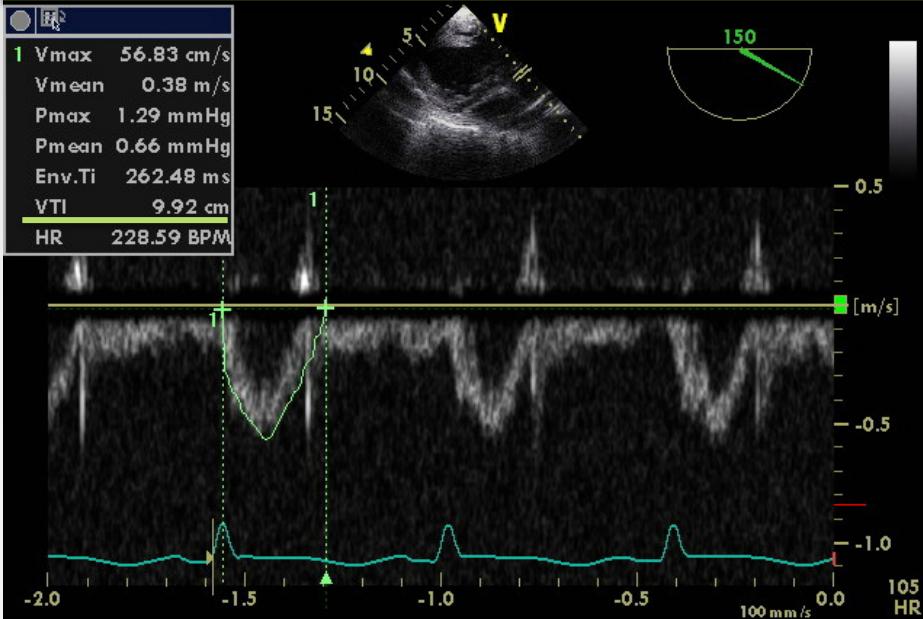
trans aortic valve flow



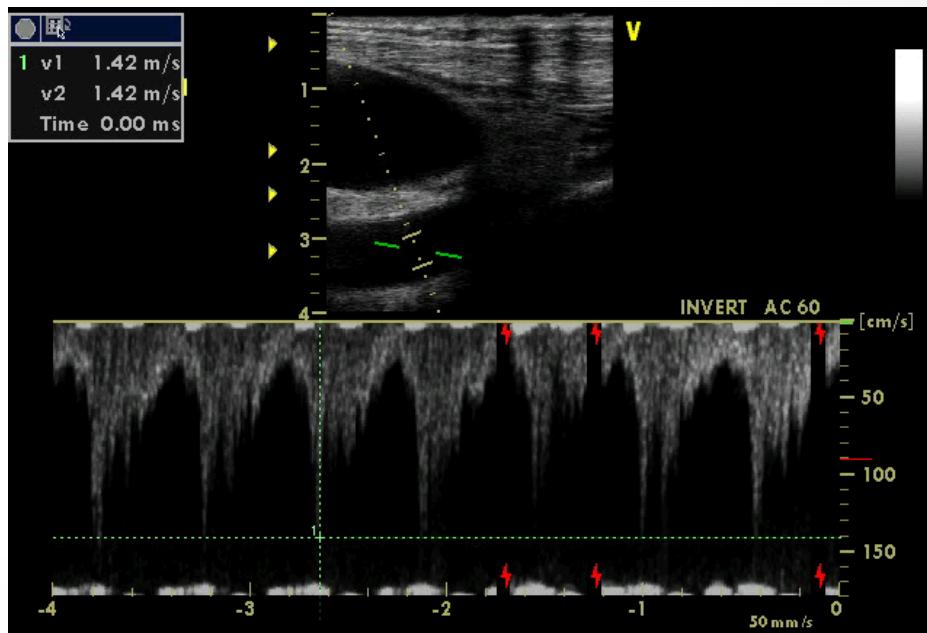
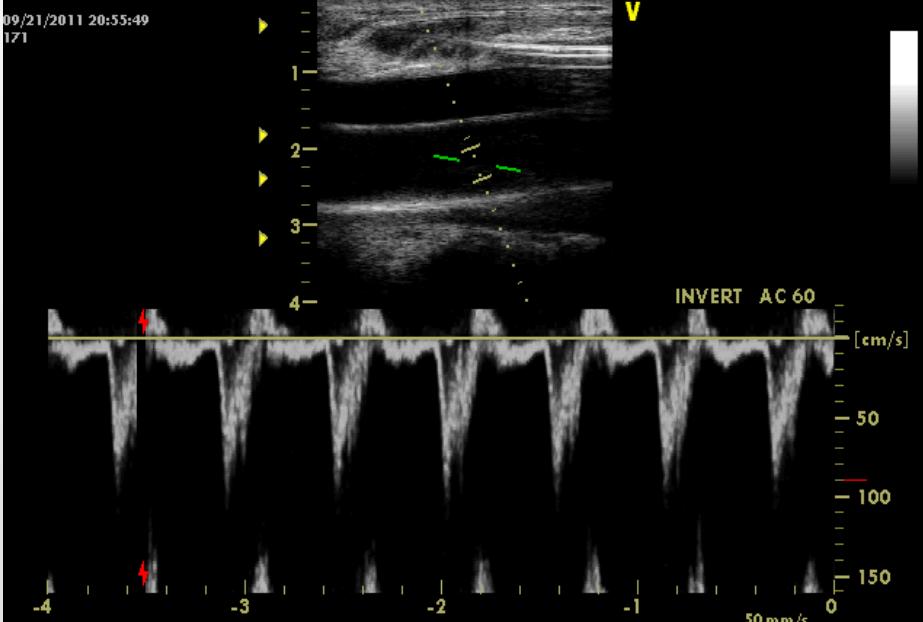
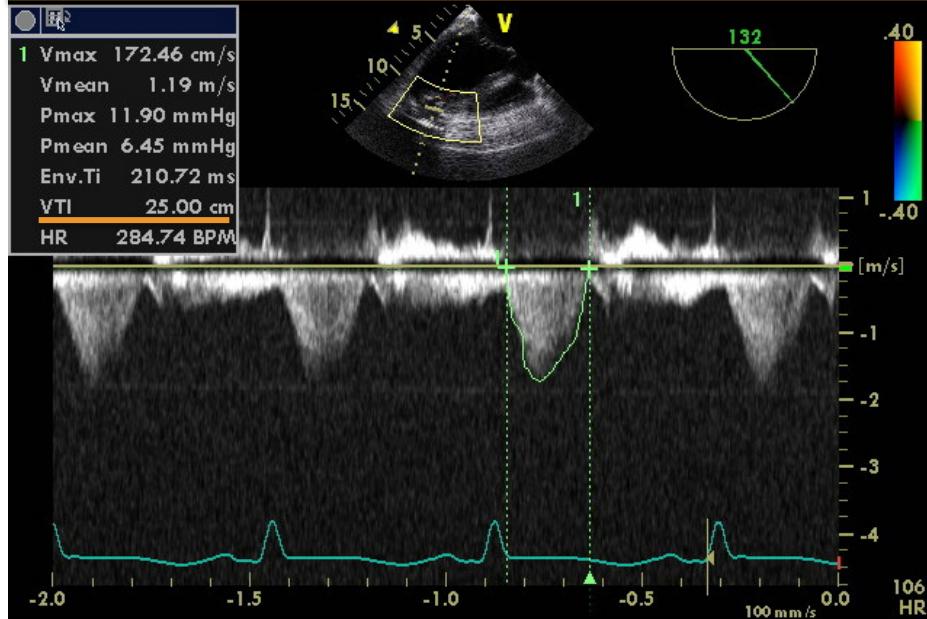
After Aortic valve bypass



trans aortic valve flow



trans apicoaortic conduit



Summary

- TEE trans AV flow decreased compare with pre-operation flow
- Afterload decreased, LV volume reduced
- sPAP $60 \Rightarrow 40$
- rSO₂ normal range 50~60% .BIS normal range 40<