Pacing in congenital heart disease

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- Ms D.M 16 yrs, female patient, severe form of tetralogy of fallot
- At age 1.5 yrs, MBT shunt operation.
- At age of 6 yrs, bilateral Glenn shunt operation.
- At age of 14
  - A syncopal attack.
  - ECG: complete heart block
Echocardiography:
- well functioning both RT and LT side Glenn shunts, and MBT shunt.
- peak pressure gradient across the PV 83 mmhg.
- Fair function of mildly dilated RV, mod TR
- Preserved LV function, mild MR

epicardial pacemaker was implanted surgically pocket infraclavicular

Regular follow up:
- high lead thresholds and impedance
- ERI 2-3 years
- syncopal attack after failure of the epicardial lead
Heart Team consultation
- Surgical implantation of new epicardial lead
- Trial of transvenous trans-shunt approach

A case report published in 2013 describing a transvenous pacemaker implantation through a SVC – Glenn shunt – Pulmonary artery – RVOT – RV apex, successfully done with good parameters.
Case Report

Pacing after Classical Glenn shunt in Dextrocardia with Cyanotic Heart Disease

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Fig. 2: SVC Venogram showing Classical Glenn Shunt in Dextrocardia. Left sided SVC anastomosed to Main Pulmonary Artery.

Fig. 3: Screw-in HV lead at RV apex in Dextrocardia thru Glenn Shunt.
Transvenous trans-shunt approach

Team: implantologist and pediatric cardiology interventionist anaesthesiologist.

MSCT revealed:
- Large secundum ASD, large subaortic VSD, overriding Ao, dilated RT side.
- Patent MBT shunt
- Patent both RT and LT glenn shunts
- Antegrade continuity between RV and PA, with infundibular, valvular and supravalvular stenosis (0.64 cm)
Difficulties:
- Directing the lead through different angulations.
- Passing through the stenotic pulmonary valve.

Post procedure Echocardiography:
- Patent left Glenn shunt.

Device interrogation:
- Threshold 0.75/0.4
- Impedance 550