Adj Assoc Prof Ross Sharpe MBBS; FRACP; FCSANZ
Head Office: Suite 9, Ground Floor Gold Coast Private Hospital Southport QLD 4215
Mail: PO Box 9167 Bundall 9726 Email: reception@coastalhearts.com.au
Phone: 1300 9 12345 Fax: 61 7 55329890 Mob: 0417 197 127
Consult Sites: Southport, Ballina, Moree(incl.Indigenous)

COASTAL HEART AND VASCULAR

Transcranial Doppler with Saline Contrast Report for Detection of Right to Left Cardiac Shunt

Report for Lucinda Robertson performed on 7/02/2023

Private and confidential Information

Dear Dr Thomas McWilliams **CC:**

RE: Lucinda Robertson, DOB: 09/02/1992 attended Coastal Heart & Vascular, Gold Coast on 7/02/2023. This was to investigate the presence of a Patent Foramen Ovale (PFO) or Atrial Septal Defect (ASD), intra-cardiac shunt or paradoxical embolisation.

Indications: ? intra-cardiac shunt/ pardoxical emboli. Multiple issues after 3rd Covid Vaccine. episode of mono-occular blindness ? migraine, ? shunt
Lucinda has been experiencing the following symptoms: Visual loss, P.O.T.S

Procedure

The right and left middle cerebral arteries (MCA) were insonated by range gated transcranial Doppler and continuously monitored via a headmount. A 20-22G intravenous cannula was inserted into a peripheral vein in the arm. Aliquots of 10mL agitated 0.9% Saline were administered via the IV whilst observing the MCA signals. The patient performed a Valsalva manoeuvre following the injection.

Common carotid IMT (mm):

Findings

RESTING (right to left shunt) - Grade : *2*
VALSALVA (right to left shunt) - Grade : *4* Shunt duration: 4 seconds

This is a positive study. There was evidence of multiple (100-300) high intensity transient signals (HITS) recorded in both MCA's following agitated saline injection and Valsalva manoeuvre. This was reproducible.

There is a significant right to left shunt present. Consultation with a Specialist Adult Structural Heart Cardiologist is recommended

Late appearance of bubbles some 4 seconds after Valsalva release with normal injection protocol. Grade 4 shunt detected during Valsalva with injection prior to commencement of Valsalva. ? small ASD or pulmonary AVM

Transcranial Doppler with agitated saline contrast has been proven superior to transthoracic and trans-oesophageal echocardiography for the detection of right to left shunt. This includes both intra-cardiac and pulmonary AV fistula. It does not define the anatomy of the defect but provides real time physiologic information as to the volume of shunting and when it does occur. There is a 7 point grading scale (Grade 5+/6 being the highest). Grades 1 and 2 are considered to be within normal limits and not clinically significant.

Sonographer: Daniel Traves BN, RN, DMU, AMS-Vascular | Verified by: Dr Ross Sharpe MBBS FRACP