

# 2021 Venous Reservoir

Permission to print:	Yes
Category	Venous Reservoir
Incident type	Good Catch No Harm Incident
Duration of incident:	minutes
Description:	<p>The HLM was being set up for a VSD on 9kg patient with right sided vegetations. The circuit used included a Terumo FX-05. Initially we ran on to bypass with the SVC cannulated which gave an adequate venous return of around 650mls for a downsized (14F)SVC cannula. When the IVC (18F) was unclamped the venous flow did not increase above 700mls, just over 50% calculated full flows. Many attempts were made to improve the venous return but nothing could get the venous return above 700mls. This included re cannulating several times, upsizing the cannulas (to 16 &amp; 20F) and venous tubing. As there was no improvement in venous return, we decided to connect the IVC cannula to its own [separate] venous line (1/4inch) then to the venous reservoir. This filled the reservoir and solved the issue. We put a flow probe on the IVC venous line giving a flow of 700mls adding to the 650mls of the other venous line achieving full flows. We had kept the ventilator going throughout until full flows achieved. We continued with the procedure and came off bypass uneventfully. After the patient left the operating room we pulled apart the reservoir and found that the continuation of the venous line inside the venous reservoir filter was severely deformed. It looked like it had been heated and the plastic seemed to have memory and went back to the deformed shape when released. This greatly reduced the maximum potential flow going through the venous line. We have used several reservoirs from the same batch/lot 210120 and have not noticed an issue although we may not have required greater than 600ml flows.</p>
GOOD CATCH - what went	Systematically went through the venous drainage circuit looking for possible issues with patient/circuit -Having a second perfusionist to call upon for assistance
Preventive actions	During priming the pump was ran at 2 l/m, well above the required flows for the case, the high arterial pressure limit was not reached which assumed that the tubing was patent. Looking back we need to alter this acceptable pressure to take into account the prime viscosity and the difference between passive venous return and running the pump through the AV loop.
Type of incident:	Equipment
Hospital incident filed:	No
Ext Authority Advised	No
Discussed with team:	No
Rule issue	No
Skill issue	No
Patient outcome variance f	Nil
Commentary	<p>This report is an exemplar for teamwork in problem solving a hitherto unreported device issue. The source of the restricted flow was totally obscured and only became obvious after the procedure was complete and the reservoir "dissembled". The use of a secondary venous line averted the need to change out part or all of the CPB circuit. The author's drawing attention to pressure drop across the circuit in the priming phase as an indication of internal obstruction is worth noting. PIRS2 Ed</p>

