2021 Cardioplegia

Permission to print:	Yes
Category	cardioplegia
Incident type	Good Catch No Harm Incident
Duration of incident:	minutes
Description:	Mitral Valve Repair Buckberg 4:1 blood cardioplegia. All pre-bypass checklists were carried out including testing the cardioplegia occlusions (routine). Uneventful initiation of cardiopulmonary bypass and cross-clamp application. Started cooling to 32 degrees. Antegrade cardioplegia delivery started with a delayed myocardial response. The heart started to fibrillate - could not achieve asystole. After 700ml of cardioplegia delivery a discussion with the surgeon took place. I could see that the cardioplegia bag (induction solution with signed additional potassium medication label) was reducing in size and also see the cardioplegia solution mixing with the blood post roller pump [a single cardioplegia pump (S5) with 4:1 cardioplegia tubing set (Livanova)] I called the perfusion coordinator to bring another bag of induction cardioplegia into the operating room, and to seek another opinion. We decided to simultaneously change the cardioplegia solution, take the cardioplegia filter out in case it was clogged (Livanova 0.2µm), and readjusted the ¼" and 1/8"ID tubing in the pump roller. I then resumed the cardioplegia delivery. The heart stopped after 200ml of cardioplegia delivery Maintenance cardioplegia delivery was then given every 15-20 minutes with no further issues
GOOD CATCH - what went well	Early discussion with the surgeon about the situation. Calling a colleague for a second opinion. Simultaneously eliminating 3 possible causes in one go.
What could we do better	The 4:1 cardioplegia tubing collets could be better designed to individually hold the two different size tubings to prevent possible kinks or twisting of the tubing.
Preventive actions	Take extra care when checking the two tubings orientation in the pump raceway and occlusions. Discussion is underway to making a tubing collet to specifically accommodate the two tubings in the single roller.
Hospital incident filed:	Yes
Ext Authority Advised	No
Rule issue	No
Skill issue	No
Discussed with team:	Yes
Commentary	While the substantial cause of the problem encountered was not identified (an equipment or management issue), the composite fix as opposed to a sequential approach in this time sensitive situation proved an efficient team based solution. Pirs2 Ed