2025 Air embolism

Permission to print:	Yes
Category	Air embolism
Category 2	Air in circuit
Severity	Good Catch No Harm Incident
Duration of incident:	seconds
Description:	Lines divided and clamped. Aorta cannulated. Went to test the line and as I looked back from the pressure monitor, I noticed a slug of air disappear into the aorta. I immediately stopped and notified the surgeon and anaesthetist of air in the aorta. The anaesthetic Fellow was using TOE and noticed there was a lot of air in the ventricle. Patient has severe AS and mild AR. We Immediately exsanguinated the blood via the arterial line to the RAP bag (a few hundred mls). Air was seen in the aortic line from the aorta. There had been no bubble alarm activation. The aortic cannula was clamped and the circuit flushed from the line via the luer tap in the arterial cannula. When clear, bypass was initiated as per normal. The case proceeded as normal. It seems that the air was likely entrained into the arterial line on division of the AV loop and back tracked to the high point which was hidden by the surgeons body. This wasn't dislogded during cannula connection but during the longer flow of testing the line. This was confirmed by the surgeon as the likely source of the air. The patient was discharged to the ward after 2 nights in CVICU, prolonged not because of neurological insult but a chest drain issue. CVICU discharged noting no neurological problems fortunately.
GOOD CATCH - what went well	Effective immediate clear communication and rapid removal of air of the aortic root using RAP and the fact they were echoing.
What could we do better	Tidier a-v loop division. Better visual checking of the tubing prior to cannulation and a team consensus on this check..
Preventive actions	The filed Hospital Incident report is in progress so a consensus for future safety will be forthcoming. In the interim the surgeon and perfusionist are both formally checking the line and agreeing it is bubble free immediately prior to cannulation.
Type of incident:	Management
Timing of incident:	Post cannulation/pre-CPB
Hospital incident filed	Yes
Discussed with team:	Yes
Knowledge issue	No
Protocol issue	No
Rule issue	Yes
Skill issue	No
Team Issue	Yes
Management culture	No
Violation	No
Patient outcome variance	Nil

Commentary	Air embolism is rarely reported to PIRS and while very infrequent given current era HLM safety features, (a very similar cause near mess reported 5 years ago) it is still a possibility as this report shows. Rapid skillful use of RAP on this occasion proved effective a preventng harm . PIRS2 Eds