

2018 Air embolism

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| Permission to print: | Yes |
| Incident type | Good Catch No Harm Incident |
| Type of incident: | Equipment |
| Category | Air embolism |
| Description: | <p>[Failure of low level alarm servo regulation] Terumo Baby FX 05 oxygenator being used for a normothermic bypass case. All checklist items completed and uneventful priming/set up. Pressure put on perfusionist to 'go bloodless' by anaesthesia. The safe operating low level for this oxygenator is stated by Terumo as being 15 mls in the venous reservoir and is also clearly marked in yellow on the front of the reservoir. The perfusionist set the low level alarm at around 45 mls which was deemed to be safe and also helped to reduce haemodilution on bypass. The perfusionist normally has low level at 50 - 60 mls for this size oxygenator. Low level was on and functioning correctly. Around 20 minutes into the case there was an adjustment of one of the venous cannula by the surgeon which resulted in a large volume of venous air coming down the line and into the reservoir but not causing an air lock and not affecting the level in the reservoir (still above 40 mls with no level alarm triggered) The bubble alarm on the arterial line post oxygenator/integrated arterial filter triggered and stopped the pump. The perfusionist clamped the arterial line and venous line and notified the surgeon that the bubble alarm had been triggered and then proceeded to recirculate to remove any [possible] residual air that may be present (anaesthetist was not in the theatre and was phoned to come back) some small amounts of air were seen in the pump boot and at the top of the oxygenator near the deairing/recirc line. Recirculation was completed and bubble alarm reactivated - no air present in arterial line or cannula and bypass recommenced (46 seconds off bypass at 36oC) Oxygenator was retained for further inspection/testing but after a group discussion the thought was that the amount of venous air in some way overwhelmed the reservoir and a 'waterfall effect' occurred. However this has not been previously seen in the previous 7 years of using this particular version of oxygenator despite seeing venous air occasionally on a similar scale.</p> |
| GOOD CATCH - what went well | bubble alarm functioning correctly and immediate action by perfusionist to clamp and de-air as fast as possible to ensure safe return to CPB Result was 46 seconds of interrupted CPB for patient and transient decrease in the NIRS during this time. (from 50-60 range down to lowest reading of 26. |
| Preventive actions | Aim to set the low level alarm higher - actual level to be determined by group discussion Further discussion on management of avoidance of haemodilution with blood free primes in paediatric patients. |
| Manufacturer advised: | Yes |
| Discussed with team: | Yes |
| Ext Authority Advised | No |
| Hospital incident filed: | Yes |
| Knowledge issue | No |
| Rule issue | No |
| Skill issue | No |