

19. Since 1984, membrane oxygenators have been used at the BRI, with only occasional use of bubble oxygenators. The use of membrane oxygenators also helps reduce haemolysis and reduces the risk of liver involvement post-operation when the liver will absorb all the damaged red blood cells, and could result in the patient becoming jaundiced, together with other associated problems.
20. When the patient has been cross-clamped and is stable on bypass, the surgeon administers cardioplegia directly into the aorta. The cardioplegia has been set up by the anaesthetist. My recollection is that we used a St Thomas' Hospital preparation a solution with a high potassium content, administered at 4°C. This has the effect of stopping the heart, so that the surgeon has a still heart to work on, and providing protection to the myocardium.
21. Once the surgeon has completed his repair work, he will de-air the heart, which is a very important procedure. I remember that James Wisheart was very good at this. I would say he was meticulous.
22. The surgeon will then ask the perfusionist to re-warm the body to normal temperature, when the heart may re-start on its own. Otherwise, the DC defibrillator will be used to start the heart. Once the heart is beating, the cross-clamp and snares are removed, restoring the circulation to the lungs, and the ventilator is started, to assist the patient's breathing.
23. The patient is then weaned off bypass. If the patient has been on bypass for a long time, coming off may pose a problem. Perfusion would then be maintained until normal circulation is established and then another attempt would be made to wean the patient off bypass. Other items of machinery could and was implemented to support the patient's circulation off by-pass, ie intra-aortic balloon pump.
24. The perfusionist may encounter several potential problems in the course of his job. These can be the failure of the equipment; lack of voltage supply to keep the bypass