ON BYPASS

AN UNUSUAL EVENT WITH VACUUM ASSIST VENOUS DRAINAGE: Case Report

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The objective of this report is to describe an event that took place with VAVD and how to prevent such occurrences in the future.

The Sorin Inspire 8 oxygenator and reservoir were used for a routine coronary artery bypass graft (CABG) x 5. An experienced perfusion assistant had assembled the pump and the circuit was verified acceptable in the pre-bypass check and also during bypass by the primary perfusionist. The vacuum was tested prior to bypass and showed a negative pressure of -13mmHg, proving functional. Following blood sequestration, cardiopulmonary bypass (CPB) was initiated.

After initiation of CPB, VAVD was applied to the Hard Shell Venous Reservoir (HSVR), but what would be considered a normal increase in venous return was not seen. Full CPB could not be maintained therefore, partial CPB was continued until drainage increased. The perfusionists checked obvious sites for issues that would normally affect venous return.

However, upon close inspection, a hissing air sound was heard coming from the top of the HSVR. The sound indicated the escaping of the intended suction from the top of the HSVR. It appeared as if the top of the HSVR had become dislodged from the reservoir and the suction effect was being lost. The use of well-placed surgical tape secured the top of the reservoir to the side of the reservoir, and vacuum was available for VAVD. Thus, allowing full CPB to resume with no effect to the patient.

The event was reviewed again at the completion of the procedure, and it was confirmed the top of the HSVR became dislodged from the HSVR main canister. This was caused by using a bracket that was not designed for the specific model (bracket was originally designed for use with LivaNova's Primox oxygenator). After this event, the bracket was taken out of service and no longer used with Inspire 8 devices.

However, this single episode was a preventable one. All equipment should undergo a risk/benefit analysis. With continued quality improvement (CQI), incidents such as this one can easily be prevented. When it comes to using instrumentation optimal for patient care, the perfusionist must construct a risk/benefit analysis that supersedes the financial effect. All medical professionals must do their best to limit the number of preventable errors in order to obtain favorable outcomes for their patients.

The full manuscript of this article has been submitted to the journal Perfusion for possible publication.