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CARDIAC

Case Report: Successful Use of a Novel, Miniaturized Transesophageal Probe for Diagnosing Tamponade Following Coronary Artery Bypass

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Objective

Diagnose source of hypotension in a patient immediately following coronary artery bypass in the CTICU environment.

Background

An 86-year-old male with extensive medical history who had undergone elective CABG several hours earlier. In the CTICU, the patient was tachycardic and hypotensive (80–110 mmHg) while on Levophed. SVO2 was 32% and CVP was 25 mmHg.

Method

Attending ICU physician ordered a transthoracic echo (TTE) and a hemodynamic transesophageal echo (hTEE™) with the ClariTEE® probe (ImaCor Inc., Garden City, NY). Both studies were performed at the bedside simultaneously in the ICU.

Results

An echo technologist performed the TTE from the patient's left side and was unable to assess the right atrium. The attending ICU physician, performing the hTEE exam from the right side of the bed easily placed the probe without complication and was quickly able to obtain a four-chamber view of the heart. From this view, the physician noticed a large blood clot pressing on the right atrium and concluded that localized tamponade was the cause of the patient's deterioration. Based on this new information, the patient was taken directly back to the operating room for an immediate reoperation and the clot was removed. The patient's status immediately stabilized and he returned to the ICU. Shortly after the patient's return, the physician performed a second assessment with the ClariTEE probe and determined that the right atrium was filling normally. The patient's blood pressure was no longer labile (140-150 mmHg), Levophed was discontinued, and the patient was hemodynamically stable (HR: 70 beats/minute and CVP: 8 mmHg).

Discussion

The published incidence of tamponade following cardiac surgeries is 0.5%-5.8% (Russo et al., 1993), and re-operation due to tamponade is costly and associated with increased mortality and prolonged hospital stay. While the use of TEE is well documented as an effective tool in the cardiac OR for monitoring patients, there is currently no effective method of monitoring these patients outside the OR, where serious complications often occur. In this specific case, as often occurs in the ICU, the TTE was unable to provide the critical information required to make this diagnosis.

Conclusion

The ClariTEE probe can be an effective and useful tool in diagnosing tamponade in post-cardiac surgery cases. Moreover, the ClariTEE probe allows physicians to establish a continuity of care in the ICU that heretofore has not been available.