TRANSESOPHAGEAL ECHOCARDIOGRAPHY IN
PERIOPERATIVE HEMODYNAMIC MERGENCIES

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The chance of having major surgery and the prevalence of acquired heart disease increase with age. Aortic stenosis, coronary artery disease, and impaired left ventricular function are common in the elderly population. Any major surgery can be viewed as a stress test performed on often sick and heavily intoxicated patients. This is why detection and treatment of the specific cause of heart failure, shock, or systemic arterial hypotension resistant to fluid/pressor administration is a very important task in the perioperative period. The causes of hemodynamic emergencies can be detected based on clinical assessment, invasive monitoring, and imaging. Clinical assessment still is, and always will be, a cornerstone of the diagnostic work-up. However, clinical assessment is a subjective, experience-dependent method and, without confirmation, may lead to a substantial proportion of errors. Invasive monitors offer a relatively simple diagnostic algorithm, but they take time to insert and need to be implemented in advance in anticipation of a hemodynamic problem. This is a serious disadvantage leading to excessive use of invasive monitoring. Currently, echocardiography is the only imaging technique which can be used in the perioperative period for hemodynamic assessment. A transesophageal echocardiographic (TEE) approach is more popular than transthoracic because it provides better visualization and does not interfere with the surgical field. Hypovolemia, vasodilation, and impaired ventricular contractility can be easily distinguished with TEE based on the assessment of ventricular volumes. Other causes of hemodynamic emergency, such as acute mitral regurgitation, pericardial tamponade, and interventricular septum rupture, can also be readily seen.