Correspondence

Complex Anesthetic Management of "Simple" Transcatheter Aortic Valve Replacement

To the Editor:

We read with great interest the article by Postalian and colleagues[1] about "simple" transcatheter aortic valve replacement (TAVR). The Division of Cardiovascular Anesthesia at the Texas Heart Institute (THI) provides care during all TAVR procedures performed at THI, and our team has achieved excellent results with use of simple TAVR. The authors mention conscious sedation as the anesthetic protocol used in most of the TAVR procedures included in their review. We consider it important to expand on the levels of anesthesia delivered during these procedures.

The term conscious sedation (CS) can be misinterpreted, given the difficulty in predicting sedation depth in patients whose cases are complex.[2,3] The American Society of Anesthesiologists defines CS as "depression of consciousness during which patients respond purposefully to verbal commands, either alone or accompanied by light tactile stimulation."[4] In addition, patients spontaneously ventilate and maintain their airways without intervention. Deep sedation (DS) is defined as "depression of consciousness during which patients cannot be easily aroused but respond purposefully following repeated or painful stimulation."[4] Airway reflexes are sometimes impaired in DS, so intervention may be necessary to maintain spontaneous ventilation. We highlight this distinction because, in accordance with these definitions, most patients undergoing simple TAVR at THI have been placed under DS rather than CS.

The use of DS instead of CS during TAVR procedures necessitates specialized anesthesia providers, because it is associated with a greater risk of airway intervention. In addition, DS enables more profound patient immobility and tolerance for longer procedures. Finally, just as CS offers advantages over general anesthesia, DS also does. For example, DS has been associated with shorter intensive care unit (ICU) and hospital lengths of stay in patients who have undergone TAVR,[5] and with lower vasopressor requirements and shorter ICU lengths of stay for patients who have undergone transcatheter mitral valve interventions.[6]

Because the depth of anesthesia can vary widely during DS, leading to complications,[3] the article by Postalian and colleagues[1] demonstrates that anesthesia personnel, as part of a multidisciplinary team, are essential to achieving outstanding outcomes in TAVR procedures. The involvement of a cardiovascular anesthesiologist ensures that the proper anesthetic depth will be maintained in patients undergoing simple TAVR. We commend our colleagues for describing the excellent care of patients who undergo this procedure at THI.

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