



## Letter to the Editor

# Preoperative Evaluation: Could age be the Only Risk Factor Toward Requiring Further Diagnostic Investigations?

 **Antonio Coviello**,  **Danilo Esposito**,  **Roberta Galletta**,  **Marilena Ianniello**,  **Alfredo Maresca**,  
 **Giuseppe Servillo**

Department of Anesthesiology and Intensive Care Medicine, Policlinico - Federico II University Hospital - Naples, Italy

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Preoperative anesthesiological visit is essential for evaluating whether a patient is a surgical candidate and toward collecting as much information as possible on his/her health condition that will enable assigning of a risk score and creating an appropriate anesthesiological management plan.

With respect to this topic, we believe that it would be interesting to present the case of a patient who had undergone major orthopedic surgery that became complicated because of his severe aortic pathology with unknown etiology that was not highlighted even after careful preoperative anesthesiological examination was performed.

An 82-year-old male patient arrived at the orthopedic operating department for replacement of left knee prosthesis that was infected. He reported with arterial hypertension that was well controlled by treatment. He reported moderate physical activity tolerance (metabolic equivalents 5–7). His body mass index was 27.68 kg/m<sup>2</sup>. He had also received subarachnoid anesthesia for an uncomplicated total knee replacement at the time of the preoperative anesthetic examination. The preoperative electrocardiogram at rest showed nonspecific anomalies of repolarization probably linked to chronic arterial hypertension. Preoperative blood chemistry and chest X-ray results were normal. Therefore, the patient was classified with score 2 by American Society

of Anesthesiologists scoring criteria.

No further cardiac-related study was required according to the European Society of Cardiology 2019 guidelines–Revised Cardiac Risk Index<sup>(1)</sup> (he had low risk of perioperative cardiac complications), Acute Physiologic Assessment and Chronic Health Evaluation II score (5–9 points; 3% estimated postoperative mortality, 8% estimated nonoperative mortality), Physiological and Operative Severity Score for the enUmeration of Mortality and morbidity (POSSUM) (3.0% predicted mortality, 16.7% predicted morbidity) and Surgical Outcome Risk Tool (SORT) (risk 0.45%).

A neuraxial technique of anesthesia was employed given his clinical picture. The patient was transferred to the operating room and premedications were administered intravenously, which included 0.03 mg/kg of midazolam and 4 mg of dexamethasone. Subarachnoid anesthesia was induced at the L2–L3 level by puncture with a 25-G Whitacre needle. Then, 12 mg of 0.5% hyperbaric bupivacaine and 8 mcg of sufentanil (total volume 3 ml) were injected. Nerve block was detected at the T12–S4 level.

The patient had stable hemodynamics (blood pressure [BP] 130/80 mmHg; heart rate [HR], 70 beats per minute [bpm]; and SpO<sub>2</sub>, 99%). During the surgery, the patient was spontaneously breathing with 40% fraction of inspired oxygen through a Venturi mask. A hypotension (BP, 90/60 mmHg)

**Address for correspondence:** Antonio Coviello, MD. Department of Anesthesiology and Intensive Care Medicine, Policlinico - Federico II University Hospital - Naples, Italy

**Phone:** +393497013533 **E-mail:** antonio\_coviello@live.it

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event occurred 45 min after anesthesia induction; therefore, crystalloid infusion rate was increased. Despite the interventions, his hypotension worsened (BP, 60/30 mmHg), the carotid pulse became impalpable, and a reflex bradycardia (HR, 30 bpm) occurred. The patient was then treated with ephedrine 25 mg. Because of persistent bradycardia, which was associated with brief loss of consciousness with desaturation (SpO<sub>2</sub>, 70%), he was treated with 1 mg atropine and assisted ventilation via a face mask. After a few minutes, the patient regained consciousness, sinus rhythm, adequate levels of O<sub>2</sub> saturation (100%), and normal BP (120/80 mmHg).

The total operation time was approximately 3 h, and a continuous saphenous nerve block in the adductor canal was carried out at the end of the surgical intervention for the management of postoperative pain.

After surgery, the patient was transferred to the intensive care unit (ICU) for intensive monitoring and diagnostic investigations of intraoperative hemodynamic changes.

An echocardiography performed in the ICU showed severe aortic calcific stenosis. In light of this finding, subarachnoid anesthesia would have been contraindicated for this patient;<sup>[2]</sup> however, severe aortic calcific stenosis was not evident from the clinical picture and the instrumental findings available at the time of the anesthesiological visit.

This finding implies that guidelines and preoperative evaluation scores most often used may not be optimally applicable to each patient; thus, leading to occurrence of unexpected intraoperative and postoperative complications. Hence the question posed is that do patients aged >75 years belong to this group? Considering that major surgery is related to a higher incidence of cardiovascular complications and death from cardiac causes<sup>[3]</sup> and that older patients undergo surgery four times more often than young-

er patients,<sup>[4, 5]</sup> would it be appropriate for older patients to undergo diagnostic investigations to determine their risk for cardiac disorders, despite having good hemodynamic compensation, by considering age alone as a risk factor?

#### Disclosures

**Conflict of Interest:** None declared.

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