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Emerging safety concerns in elderly patients undergoing shoulder surgery

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Editorial

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Recently, shoulder surgery, including open and arthroscopic total shoulder arthroplasty, has been increasingly performed [1]. In the United States, the number of patients undergoing total shoulder arthroplasty has more than doubled between 2005 and 2013 [2]. With an increasing elderly population, the prevalence of degenerative shoulder diseases has also increased, which may contribute to the rising number of shoulder surgery performed. Considering that elderly patients have various comorbidities, complications and problems related to anesthesia and surgery emerge together.

Traditionally, shoulder surgery was performed as an inpatient procedure for elderly patients due to comorbidities associated with aging and postoperative pain control. As enhanced recovery protocol has been introduced for various types of orthopedic surgery, shoulder surgery is now performed in the outpatient setting [3]. The shift toward ambulatory surgery has resulted in cost saving and patient convenience. However, the issue of safety and adverse events related to ambulatory shoulder surgery is unresolved. In the first issue of 2021 *Korean Journal of Anesthesiology*, Burton et al. [4] investigated the demographic and clinical factors that were associated with same-day discharge and unplanned readmission after shoulder arthroplasty. They found that factors such as old age, comorbidities (such as diabetes and congestive heart failure), and poor functional status were associated with a lower odds of discharge on the same day and a higher risk of unplanned readmission.

Perioperative complications associated with arthroscopic shoulder surgery, such as cerebral desaturation and hypotensive ischemia, postoperative dyspnea, neurologic injuries, and inadvertent hypothermia, are unconquerable [5]. In particular, there is the possibility of a serious side effects of compromised cerebral perfusion in the beach chair position by which improves intra-articular visualization during arthroscopic surgery. Choi et al. [6] showed that symptomatic hypotensive bradycardia occurred in 60% of all shoulder surgeries with the beach chair position and that preoperative interscalene brachial plexus block and old age were risk factors for symptomatic hypotensive bradycardia. During shoulder arthroscopy, hypothermia is common and can be contributed by the irrigation of the shoulder joint, impaired thermoregulation, and vasodilation due to anesthesia. Prevention of hypothermia is meaningful as it plays an important role in adverse events such as blood loss, cardiac morbidity, and wound problem [7]. Lee et al. [8] found that perioperative hypothermia was more prevalent in general anesthesia than in interscalene brachial plexus block combined with propofol sedation. They also showed that there was no difference in the incidence of hypothermia between the elderly and younger patient groups.

From these retrospective studies [4,6,8], it is thought that elderly patients with comorbidities are unlikely to be discharged on the same day and are at an increased risk of readmission in the setting of ambulatory shoulder surgery. Old age may also be associated with a high risk of hypotensive bradycardia, particularly in the beach chair position. In

elderly patients, interscalene brachial plexus block combined with propofol sedation could prevent inadvertent intraoperative hypothermia, which is more likely with general anesthesia. Interscalene block, however, may induce symptomatic hypotensive bradycardia associated with the beach chair position. In conclusion, the risk of perioperative complications in elderly patients undergoing shoulder surgery depends on the surgical position, anesthetic techniques, and presence of significant comorbidities. Therefore, further studies are needed to identify perioperative strategies to ensure the safety of elderly patients undergoing shoulder surgery.

Conflicts of Interest

No potential conflict of interest relevant to this article was reported.

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