



Shoulder Surgery in the Beach Chair Position

Current Anesthetic Concepts and Controversies in Hemodynamic Management and Cerebral Perfusion

Rohini Kotha, MD^a, Steven L. Orebaugh, MD^{b,*}

^aDepartment of Anesthesiology, University of Pittsburgh School of Medicine, 910 LSK, 3471 Fifth Avenue, Pittsburgh, PA 15213, USA; ^bDepartment of Anesthesiology, UPMC Southside/Mercy Anesthesia, University of Pittsburgh School of Medicine, 2000 Mary Street, Pittsburgh, PA 15203, USA

Keywords

- Beach chair position • Shoulder surgery • Anesthesia • Hemodynamics
- Cerebral ischemia • Neurologic outcomes

Key points

- Reduced cerebral perfusion seems to occur frequently during shoulder surgery in the beach chair position (BCP), primarily in patients under general anesthesia, with positive pressure ventilation, which may be magnified by deliberate hypotension.
- Interscalene brachial plexus blockade with sedation may protect against cerebral hypoperfusion by allowing preservation of autoregulation, as well as avoiding the diminished cardiac output that occurs with controlled ventilation.
- The overall incidence of severe neurologic injury is quite low, but the occurrence of clinically subtle forms of neurologic dysfunction, such as delirium and post-operative cognitive dysfunction, has not been well delineated.
- Although its importance may be the subject of scientific debate, most clinicians consider that blood pressure measured at the arm level overestimates cerebral pressure in the upright position and so they deliberately correct for this factor in determining perfusion pressures of the brain.
- The lower limit of autoregulation is likely variable between individuals and is altered by pathologic entities, such as chronic hypertension or preexisting cerebrovascular pathologic abnormality.
- Monitors of cerebral perfusion have not been definitively shown to prevent central nervous system injury, but may be useful in vulnerable individuals.

Conflicts: The authors have no conflicts of interest to declare.

*Corresponding author. *E-mail address:* orebaughsl@anes.upmc.edu

INTRODUCTION

There has been an exponential growth in the volume of shoulder surgery in the last 2 decades. In one study examining the epidemiology of upper extremity ambulatory procedures performed in the United States [1] for the year 2006, the estimates for these common procedures include

- 272,148 rotator cuff repairs (RCRs)
- 257,541 shoulder arthroscopies, excluding RCRs

Colvin and colleagues [2] performed an investigation to determine trends in resource utilization for RCRs, including type and setting of surgical treatment from 1996 to 2006. They reported that overall there was a 141% increase in the number of RCRs performed, from approximately 41 per 100,000 population in 1996 to approximately 98 per 100,000 population in 2006. Open repairs were increased by 21%, whereas arthroscopic repairs increased to a much greater extent, by 530%. The ambulatory surgery setting witnessed much greater growth than inpatient procedures, more than quadrupling during this period (from 22 to 91 per 100,000 capita), whereas inpatient surgical procedures decreased by 63%. In addition, shoulder arthroplasty procedures have increased dramatically as well. Kim and colleagues [3] described a marked increase in total shoulder arthroplasty, by more than 2.5-fold in a 15-year period from 1993 to 2008, with a less significant increase in hemi-arthroplasties.

Many, if not most, of these shoulder procedures are conducted in the upright beach chair position (BCP). In this article, current concepts, controversies, and practicalities of anesthetic practice for shoulder surgery in the seated, or BCP position, are reviewed.

HISTORY/UTILITY OF BEACH CHAIR POSITION

Since its introduction for shoulder arthroscopy by Skyhar and colleagues [4] in 1988, orthopedic surgeons have debated whether the BCP or the lateral decubitus position (LDP) is superior for shoulder surgery. Although other positioning techniques have their proponents, the BCP has spread widely and is now favored by many surgeons because of several apparent benefits [5]:

- Upright anatomic position
- Decreased brachial plexus injury
- Increased operative arm mobility
- Easier examination under anesthesia
- Easier anterior port placement
- Easier conversion to open procedure
- More conducive positioning for a regional anesthetic peripheral nerve block (PNB) technique

MANAGEMENT GOALS FOR ANESTHESIA IN BEACH CHAIR POSITION

General considerations

A thorough preoperative assessment is essential before choosing the anesthetic technique, because there are certain patients with comorbidities and ailments

Download English Version:

<https://daneshyari.com/en/article/2741746>

Download Persian Version:

<https://daneshyari.com/article/2741746>

[Daneshyari.com](https://daneshyari.com)