Postoperative Obstructive Sleep Apnea and Delirium?

We read with interest the recent article by Flink et al. in which the authors evaluated the frequency of postoperative delirium (POD) in 106 elderly patients aged 65 yr or older after elective knee replacement. The screening for POD was thorough and well-conducted with recognized screening tools, with an incidence of 25% on days 2–3 postoperatively. The pathophysiologic mechanisms are multiple, including anemia, electrolyte disturbances, infection, pain, and benzodiazepine and opioid use.

Patients with obstructive sleep apnea are at an increased risk of postoperative complications in general, and this is especially true when combined with opioid-based analgesia in the postoperative period. It is therefore unfortunate that this otherwise well-conducted study did not include data on pain, opioid use, and other sedatives, because this may worsen the adverse effects of obstructive sleep apnea. In addition, there was little specific information on the anesthetic technique per se.

The incidence of POD of 25% seems high in an elective, nondemented surgical population. Our group recently found no cases of POD in a similar population of patients undergoing knee and hip replacement. However, our patients received multimodal optimized care with reduced opioid use and only moderate postoperative pain, combined with short length of stay (mean 2.6 days). We believe that future studies evaluating the complex cognitive outcome of POD with multiple pathophysiologic mechanisms should include an optimized multimodal enhanced recovery program (the fast-track methodology) to provide a better understanding of POD and preventive techniques.

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References


In Reply:

We thank Drs. Krenk and Kehlet for their comments on our study, and we appreciate their concerns. The type of anesthesia used for our patients is listed in tables 1 and 2 of our article. There was no effect of type of anesthesia on postoperative delirium. In the majority of our patients (89 of 106, 84%) a femoral nerve catheter was inserted before surgery, through which they received a constant infusion of local anesthetic postoperatively. An additional seven patients received postop epidural analgesia. Regional analgesia in both instances was supplemented with oral celecoxib and pregabalin, and opioid as needed.

The incidence of postoperative delirium in our patient population is similar to that reported by others in knee arthroplasty patients. In contrast, Dr. Krenk’s impressive study of fast-track hip and knee arthroplasty (of which we were unaware before our article submission) revealed no postoperative delirium. However, there are significant differences between the studies. In particular, delirium in our study was diagnosed not only on the basis of nursing, physical therapy, and physician notes (as in Dr. Krenk’s study), but also by using Confusion Assessment Method and Delirium Rating Scale-Revised-98 administered by a dedicated, specifically trained nurse, and reviewed by a psychiatrist. Most of our cases were mild, thus we probably detected many cases that might not have been noted by ward nurses with many other responsibilities. We agree with Drs. Krenk and Kehlet that opioids can enhance postoperative complications in obstructive sleep apnea patients. Despite implementation of fairly consistent regional analgesia to minimize such effects, we still observed an effect of obstructive sleep apnea. Indeed, it is likely that some patients with apnea went undiagnosed or were not known. These false negatives would tend to weaken the observed effect in our analysis, suggesting that an even stronger effect of obstructive sleep apnea on delirium might exist.

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