CORRESPONDENCE

Anesthesiology
80:1416, 1994

The Effect of Anesthetic Technique on Postoperative Analgesia Requirements

To the Editor:—In the study by Shir *et al.*,[1] patients who had prostatectomy under epidural anesthesia without general anesthesia required less postoperative analgesia than did patients who had the operation under a less extensive epidural block with a general anesthetic. It thus is misleading on the part of the authors to suggest that these results "indicate that complete intraoperative blockade of afferent signals to the central nervous is fundamental in decreasing postoperative pain," because their study design does not control for the confounding effect due to the general anesthetic that was administered to only one of these two groups. Certainly, the explanation given is possible, but their failure to discuss alternative explanations, or indeed to acknowledge the limitations of their study, detracts from their report.

The failure to control for the effects of general anesthesia is not trivial, because patients in the two groups inevitably will have undergone different perioperative experiences, which may have had a bearing on their subsequent analgesic requirement. The well known effect that psychologic factors can have on pain perception and analgesic requirement makes it possible that patients who remained awake during surgery developed a greater degree of stoicism by having experienced the operating room environment, which, if transferred to the postoperative period, may have led to the lower analgesic requirement. Alternatively, they may have achieved this benefit by having not experienced the morbidity of general anesthesia. Although such possibilities may be less likely than the one favored by the authors, they nonetheless provide explanations, which cannot be discounted by this study, as to how general anesthesia may have influenced the results. The fact that analgesic consumption in a third group, who received only general anesthesia, was no greater than in the combined general/epidural anesthesia group, again supports the possibility that the differences between the first two groups could have been due to merely the presence or absence of general anesthesia, rather than the epidural anesthetic.

Shir *et al.* relate their study to the investigation of preemptive analgesia. As discussed by McQuay,[2] many early studies into this phenomenon were limited by their design. The demonstration of a preemptive effect from an intervention before surgery requires the control of the same intervention made after surgery, with all other factors equal in both groups. In the study by Shir *et al.*, none of the groups had epidural anesthesia started after the onset of surgery, nor were other factors equal in both groups (as discussed above), and yet the authors allude to a demonstration of preemptive analgesia.

The potential preemptive effects of epidural anesthesia have been studied by Pryle *et al.*[3] in women undergoing total abdominal hysterectomy. In accordance with the design described by McQuay, they included two groups, both of whom received combined epidural/general anesthesia but with epidural blockade delayed in one group until after surgical trauma had taken place. Their study did not demonstrate a preemptive effect, although the results of Shir *et al.* might suggest that this could have been because of an inadequately extensive block.

As stated by Shir *et al.*, previous studies into preemptive analgesia have provided controversial results. Unfortunately, their own study is no exception.

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References

1. Shir Y, Raja SN, Frank SM: The effect of epidural *versus* general anesthesia on postoperative pain and analgesic requirements in patients undergoing radical prostatectomy. ANESTHESIOLOGY 80:49–56, 1994
2. McQuay HJ: Pre-emptive analgesia. Br J Anaesth 69:1–3, 1992
3. Pryle BJ, Vanner RG, Enriquez N, Reynolds F: Can pre-emptive lumbar epidural blockade reduce postoperative pain following lower abdominal surgery? Anaesthesia 48:120–123, 1993

(Accepted for publication March 21, 1994.)

Anesthesiology
80:1416–1417, 1994

In Reply:—Cohen expresses concern that we failed to discuss alternate mechanisms that might explain our observation that the postoperative analgesic demand was greater in the general anesthetic (GA) and the combined epidural/general anesthetic groups (EG) when compared with the epidural anesthetic (EA) group.[1] Cohen's argument of psychologic factors and the "morbidity" associated with general anesthesia as confounding factors is intriguing. However, in our opinion, these factors are unlikely to be the predominant explanation for the differences we observed in postoperative analgesic requirements between the different groups.

Regarding the psychologic effect of maintaining awareness during the surgical procedure, all patients had prior operating room exposures during prostatic biopsies, the majority of which were performed under regional anesthesia. In addition, patients in the EA