**LETT ERS**

**IMPROVED METHOD OF APPLYING A SAFETY STRAP TO PREVENT OCULAR INJURY FROM A MAYFIELD HORSE-SHOE APPARATUS**

To the Editor:

At my institution, the face of a patient undergoing cervical laminectomy is often positioned in a padded Mayfield horseshoe apparatus. Following completion of the surgical preparation and drape, the neurosurgeon or orthopedic surgeon commonly asks that the operating table be placed in the reverse Trendelenburg position to reduce venous oozing within the operative field. If this causes the patient’s body to slide caudally under the drapes, the face can be displaced so that an end of the horseshoe produces ocular compression.

To avert this problem, I have modified the usual method of applying the standard safety strap to greatly reduce such caudal patient movement. The particular placement of the strap (referred to here as a “butt strap,” though it might best be described as a “gluteal sling”) has been adopted by a number of my physician and nurse anesthetist colleagues and is shown in the Figure. The strap is applied higher than the usual mid-thigh location, at the crease between the gluteus and thigh. Both ends of the strap are directed somewhat cephalad (to counteract any caudal gravitational force), pulled snug, and securely fastened.

Anyone sufficiently interested can test the supportive force of such a strap by having it applied (to him/herself) with the operating room table in neutral position, then having the table rotated head-up.

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**ASSESSING PAIN RESPONSES DURING GENERAL ANESTHESIA**

To the Editor:

The title of this article, “Assessing pain responses during general anesthesia” (AANA Journal. 2001;69:218-222) caught my attention immediately as I believe most anesthetists, myself included, view pain as a conscious phenomenon, absent during general anesthesia and unconsciousness. Had the authors (Margareta Warrén Stomberg, RNA; Björn Sjöström, RNA, PhD; and Hengo Haljamäe, MD, PhD) developed a novel conceptualization of pain, or did they have new information regarding the “perception” of pain during unconsciousness? Apparently neither. It appears that they assume that pain occurs during general anesthesia without defining pain in that context, providing a conceptual framework for pain during unconsciousness, or citing any work that demonstrates pain perception by patients during general anesthesia and unconsciousness.

Had the article been authored by persons less educated in research science, I would have dismissed it as the work of unqualified individuals. Given that the authors include a doctoral candidate and 2 PhD-prepared anesthesia providers, I have to wonder how much was, perhaps literally, “lost in the translation.” To make sense of the article, clarification is needed in a number of areas. How is anesthesia different in Sweden compared to the United States? Are the foundational concepts upon which providers base anesthetic practice so different? If so, how? How do Swedish anesthesia providers conceptualize the relationship between pain and general anesthesia? What are the links between the “pain variables” listed in Table 1 and pain perception? And, how do variables independent of the patient system, such as “minimum alveolar concentration value” from Table 2 reflect the presence of pain?

I hope that the authors will clarify these issues.

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**To the Editor:**

I wish to comment on the article written by Margareta Warrén Stomberg, RNA; Björn Sjöström, RNA, PhD; and Hengo Haljamäe, MD, PhD, which appeared in the June AANA Journal (2001;69:218-222). I read with much interest their study results and would like to offer some constructive comments based upon the literature and my own clinical experiences assessing pain and depth of consciousness (level of sedation/hypnotic state) during general
anesthesia.

I agree with the authors’ suggestions that PRST score (blood Pressure, pulse Rate, Sweating and Tears) is probably (such a cautious qualifier prepares me to be a bit doubtful) a better indicator of painful stimuli. While the authors indicated that the PRST score was most useful as an indicator of the adequacy of analgesia, it looks as if it was only an assessment tool for analgesic sufficiency. However, I question the judiciousness of the implication that it also reflects depth of anesthesia. Level of sedation or hypnotic state may be a better qualifier and might be used as an alternative to depth of anesthesia in this study. I believe the authors’ primary focus was rather a measurement/assessment of indirect and monitor-derived clinical signs of hemodynamic responses to surgical stimulation. Qualitative examination of these responses is long overdue as qualification of these responses continues to evolve and be more refined, particularly in the area of level of sedation throughout the anesthetic regimen.

The result of this study proposes that indirect, skin-derived phenomena (ie, moisture and stickiness), excusing certain subgroups, were considered equally relevant indicators with the monitored parameters, blood pressure, and heart rate. This was surprising to me and even more so that both, participants with less than 3 years experience and participants with 10 years or greater, reported these findings equally. I did not see in the methods section that raters reliably assessed these indirect phenomena equally or that the ambient temperature of the operating suite was under the control of the investigators. This may not have been reported as a result of space limitation; however, I would rather not make that assumption.

The media coverage of awareness of intraoperative pain and conversation should reinforce our need to always be vigilant during anesthesia; however, awareness, which is simply an inadequate level of sedation during anesthesia, is not always “inadequate management of patients and should always be prevented.” My years working the weekend trauma rotation at a very busy inner-city hospital taught me that. Awareness is not a part of the anesthesia triad. While the public may sometimes believe anesthesia simply means a loss of feeling or pain, and is frequently used to describe medications to prevent feelings of pain during a surgery or other procedure, anesthesia providers have historically accepted (general) anesthesia to include amnesia, analgesia, and immobility.

With the advent of new technologies, such as the bispectral index (BIS) monitor and the newer PSA4000 (Patient State Analyzer by Physiometric, Baxter, Round Lake, Ill) that describes index changes during the sedation/hypnotic state, a new age in control of these phenomena has arrived. The authors have addressed an area of our profession that will continue to be refined, and I am sure we will be reading more with reference to this topic.

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Response:

After emergence from general anesthesia, patients have reported awareness during surgery, sometimes accompanied with pain experiences.1-3 This stresses the importance of properly interpreting physiological responses evoked by painful stimuli, since prevention of such responses may reduce the risk of awareness and experience of pain during unconsciousness.

The aim of our study was to assess the direct and indirect clinical signs that are considered relevant by nurse anesthetists to reflect the adequacy of the anesthetic management and how the different signs are interpreted, ie, if they are considered to reflect intraoperative pain-evoked responses and/or depth of anesthesia.

Pain is usually defined as a subjective experience, ie, an unpleasant sensory and emotional experience associated with actual or potential tissue damage, or described in terms of such damage.4 Such a definition corresponds to the statement in the letter by Michael A. Fiedler, CRNA, MS, who pointed out that “pain is a conscious phenomenon, absent during general anesthesia and unconsciousness.” Gracely5 stated that when you cannot share languages with the patient in pain, it is important to develop physiological and behavioral “objective measurements” of pain. We interpret general anesthesia as a situation in which you cannot share “languages” with the patient. That is why we have considered it important to assess clinical signs indicative of “intraoperative pain” (pain-evoked physiological responses).

Our goal was not to conceptualize a specific relationship between pain and general anesthesia/depth of anesthesia, although it is an interesting question. Perhaps we should have titled the article “Clinical responses to surgical stimulation” (as partly suggested in the letter by Henry Clinton Talley V, CRNA, MS), since the present results indicate that the intraoperative monitoring data are sometimes interpreted as pain-evoked responses and sometimes more specifically as signs of insufficient depth of anesthesia. This indicates that in clinical anesthesia practice there is a relationship between “pain” (pain-evoked stimuli) and depth of anesthesia experienced by the nurse anesthetist providing anesthesia for the surgical patient. However, the aim of this study was not to outline such a relationship.

In daily practice, nurse anesthetists in Sweden, as nurse anesthetists in most parts of the world, do not routinely use a BIS monitor or PSA 4000 to interpret the depth of anesthesia/level of sedation. As recently pointed out by O’Connor et al:6 “The contention that bispectral index monitoring reduces the risk of awareness is unproven, and the cost for using it for this indication is currently unknown.” Therefore, the fact remains that in the routine clinical setting during anesthesia, it is important to interpret correctly responses evoked by the surgical stimulation to prevent perception of pain and awareness. Minimum alveolar concentration, a “technical variable” indicating the depth of anesthesia, is used as one indicator among others in order to prevent awareness. In the present study, we have used the term “depth of anesthesia,” as it is a common and valid phrase found in research literature to measure the level of sedation.
REFERENCES


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