decrease and he then becomes comfortable because the rest of the surgical procedures are the same actions that he performs every time during coronary surgery. Second, an attending-consultant surgeon intrinsically pays very careful and tense attention to the phase of arresting the heart, coronary arteriotomy, and sewing coronary grafts when he supervises a resident-trainee surgeon because an attending-consultant surgeon intrinsically knows those phases are the most important stage of coronary surgery.

The limitations of this study include that this study just measured HRV of a single surgeon and therefore there is no control data for the HRV. This limitation will be overcome by a future study measuring the HRV of several surgeons.

In summary, this study is the first report to measure and evaluate the intraoperative HRV of a cardiac surgeon and it showed that there was a clear difference between when an attending-consultant surgeon performs CABG and when he supervises and assists CABG. When an attending-consultant surgeon performed the operation himself, the most anxious part of the operation was at the beginning and thereafter this gradually declined. In contrast, when he assisted a resident, the highest level of anxiety was when the aortic cross-clamp was in place and out of place and the coronary anastomosis was being performed.

References


eComment: Stress levels of the surgeon within and beyond the operating room

Author: Karsten Knobloch, Hannover Medical School, Plastic, Hand and Reconstructive Surgery, Hannover, Germany
doi:10.1510/icvts.2008.195941A

I read with great interest the report by Dr. Song and co-workers evaluating the heart rate variability as a measure of stress levels of a cardiac surgeon [1]. Notably, the stress levels differ from performing a coronary artery bypass grafting (CABG) procedure on their own or assisting it to residents. Interestingly, the resident-trainee surgeons refused to have their intraoperative electrocardiogram recorded, which would have been of distinct interest in my personal view. It seems that the more experienced a surgeon, the greater is the expected decline in stress levels throughout a standardized procedure at daytime. However, the impact of on-call procedures during after-office hours might be determined in the future.

Stress levels of a given surgeon should be regarded in a larger perspective beyond the OR. Pressure due to time constraints, administrative pressure and/or personal attitudes towards stress management are likely to influence the response of a given surgeon to stress. It would be interesting to know whether stress levels in the OR are similar as following administrative tasks outside the OR?

In surgical training in general surgery, intraoperative cardiac rate increased by 4–10%, particularly in the resident serving as primary surgeon during laparoscopic cholecystectomy [2]. The most stressful moments of the aforementioned general surgical procedure were the draping of the surgical field, trocar placement, clip application, and extraction of the gallbladder. Perceived stress levels among surgeons during a 24-hour-shift correlate with heart rate variability, whereas fatigue does not [3]. Stress-coping strategies may play a role in this regard, too [4].

Thus, the stress of the surgeon within and beyond the OR is of distinct interest.

References


