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Abstract

The use of direct-view and / or monitor-displayed endoscopy was assessed together with visuomotor laterality (preferred eye, hand and foot) in 251 urologist surgeons (nation-wide sample of clinicians). Monitor-displayed endoscopy was used more often (49%) than direct-view endoscopy (35.5%); 15.5% used both techniques. This choice differed with the respective laterality of the users.

Introduction

As shown before, the efficient use of visually displayed information depends largely on the principle of perception-action compatibility in connection with the respective lateral preferences (Ehrenstein & Arnold-Schulz-Gahmen, 1997). The present study is concerned with the preferred use of direct-view versus monitor-displayed visual information in performing endoscopic surgery (see Figure 1). While the sensory-motor effort and fatigue immensely accumulates during an operation with direct-view endoscopy (Figure 1a) this strain can be reduced by using video-displayed technique which allows a more relaxed posture of the operator (Figure 1b; see also Luttmann et al., 1996). However, a disadvantage of video-displayed information is that the directions of viewing and of operating are dissociated so that spatial orientation is more difficult (e.g., Ehrenstein et al., 1996).

The preferred use of respective endoscopic techniques in 251 urologist surgeons (representative sample of clinicians within Germany) was assessed together with the respective lateral preferences of eye, hand and foot as well as of their inter-relatedness (Arnold-Schulz-Gahmen et al., 2000). The hypothesis was that persons with crossed laterality would prefer direct-view endoscopy since they were found to be more dependent on variations in spatial compatibility than persons with congruent laterality (Ehrenstein & Arnold-Schulz-Gahmen, 1997).

Method

Each subject was given a modified version of a laterality questionnaire (Arnold-Schulz-Gahmen et al., 2000) assessing individual laterality profiles, that indicates the direction and degree of eye, hand and foot and the use of endoscopic techniques. The possible dependence of used techniques with the user’s lateral status (left-