

The effect of eye exercises on visual symptoms in three-dimensional laparoscopy

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Introduction:

Visual strains and associated symptoms have been reported when operating in 3D laparoscopic environments. Eye exercises are prescribed to school pupils of certain populations to relieve ocular fatigue and myopia following prolonged periods of intense concentration. We aimed to study the effect of eye exercises on 3D laparoscopic visual symptoms.

Methods:

Twenty-four novices performed 30-minutes standardised lab-based laparoscopic tasks. Subjects completed a questionnaire to scale their visual symptoms before and after the tasks. Participants were divided equally into: those who received two minutes eye exercises before the tasks and those who didn't. Visual symptoms were scored with and without eye exercises.

The eye exercises:

1 Palming eye relaxation technique



2 Two dots vision exercise



The participants focused at one of the dots for few seconds, then slowly move their eyes to the other dot. Exercise was repeated for a min. Eyes were closed and asked to relax.

3 The eye blinking exercise:

The participants were asked to close their eyes and relax.

Blink 15 times rapidly. Eyes were closed and asked to relax.

Results:

The effect of the simple eye exercises on relieving the visual symptoms was not statistically significant: blurred vision Mean (s.e.m.) 0.5 (0.5), dry eye 0.5 (0.33), difficulty in refocusing from one distance to another 1.75 (1.03), eye strain 1.5 (0.98), headache 0.5 (0.5) and eye deviation 4.33 (0.86), $p > 0.05$.

Conclusion:

Eye exercises did not significantly resolve the 3D visual symptoms.

Key statement:

Future research is recommended to prevent the visual strains and symptoms associated with 3D laparoscopy.