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Two surgeons and the ECG: a double blind study?

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Background

Among medical doctors, an old saying is that two surgeons and an ECG form a double-blind-study. To our knowledge, this prejudice was never controlled scientifically. This is the first study to assess the capability of operating abdominal and orthopaedic surgeons to analyze a set of standardized ECG.

Methods

30 operating abdominal and orthopaedic surgeons at our university hospital were directly approached to volunteer for this study. Each participant analyzed a set of five standardized ECG with an answering scheme for eight different items, giving a maximum score of 40. The answers were matched according to specialty and experience of the doctors of less than 5 years, between 5 and 10 years or more than 10 years. The reference standard was set by two independent consultants in cardiology. All answers recollected within three months were included in the study.

Only correctly assessed items were accepted, unanswered items were regarded as incorrect. Statistical analysis was performed by the Student's T-test and confidence intervals were calculated at 95%. Probability (p) levels of < 0.05 were accepted as significant.

Results

Twenty answers could be included, 12 from orthopaedic and 8 from abdominal surgeons. The mean overall score was 25.25 (63.13% ± 4.78%) varying between 38 (95%) and 20(50%).

Abdominal surgeons performed a mean score of 27.625 (69.06% ± 9.53%), and orthopaedic surgeons 23.67 points (59.17% ± 3.69%). The difference between the performance of abdominal and orthopaedic surgeons was not significant ($p = 0.09$). Experienced surgeons seemed to perform slightly better than junior colleagues but no significant difference could be found among the subgroups. 20/20 surgeons identified ST-elevation myocardial infarction (STEMI) and no surgeon accepted the ECG showing acute STEMI as normal.

Conclusion

Abdominal and orthopaedic surgeons provided an answering scheme are able to interprete the ECG and identify both the normal and the ECG showing life-threatening pathology. The hypothesis that surgeons were unable to interprete the ECG must be rejected.

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