

Letter to the Editor

Duration of minimally-invasive hernia repair: a review of 14000 cases.

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We analysed 7176 endoscopic hernia repairs in 25 German and Austrian hospitals. We compared the extraperitoneal technique (39%) to the transabdominal technique which was used in 61%. Literature shows that none of the two techniques is significantly predominant concerning recurrences, morbidity or duration of hospital stay. In our study transabdominal hernia repair takes an average cut-to-suture time of 68.59 min. compared to 59 min. in extraperitoneal hernia repair ($p=0.038$). In conclusion the shorter operation time could be seen as medical and also economical advantage for the TEP-technique.

This analysis considers 25 German and Austrian hospitals with 330 000 inpatient cases per year. In each of these hospitals both an open and one type of endoscopic hernia repair technique are used. The extraperitoneal (TEP) technique is done in 10, the transabdominal (TAPP) technique in 15 of these hospitals. The prospective, non-randomized data is based on 14071 hernia repairs from a six year period from January 2004 to December 2009. All data were analysed descriptively (mean, 95% confidence interval). T-tests for unpaired samples were used to assess differences between interval scaled measurements. The average percentage of all endoscopic hernia repairs was constantly between 46% and 56 %. We registered no tendency to prefer either open or endoscopic procedures.

Endoscopic hernia repairs made up from 3.7 to 92.2 percent of all hernia repairs (mean 41.3%), a percentage that varied in each hospital by less than 5 percent in the time span covered by this study. The mean time of patient's length of stay (LOS) in hospital was without any ($p=0.12$) difference: 3.22 days for transabdominal repair and 3.3 days for extraperitoneal repair.

In all patients, the average cut-to-suture time of all 14071 hernia repairs in the hospitals in our study was about one hour in open and endoscopic techniques without significant differences (open 58 min. vs endoscopic 62 min.). However, the mean surgery time of an endoscopic hernia repair in a single hernia was 47.8 minutes (95%-CI= 11.2) in hospitals ($n=5$) that do more than 150 endoscopic hernia repairs per year. In these high-volume hospitals for endoscopic hernia

repair the percentage of endoscopic hernia repair was 68% in mean (53.3 to 92.3%).

The comparison of the 7176 endoscopic procedures showed that the extraperitoneal technique, which was used in 39% of the endoscopic procedures took 59 min. for a single hernia, whereas the transabdominal repair took 68.5 min ($p=0.043$). The comparison between the two endoscopic techniques in the endoscopic high volume hospitals with 2 hospitals of extraperitoneal repair ($n=633$) and three hospitals of transabdominal repair ($n=646$) showed 53 min. av TAPP (CI95%=5.8) and 40 min. for TEP repair (CI95%=4.3).

Literature proves that the results of transabdominal and extraperitoneal techniques of endoscopic hernia repair do not differ significantly (1-7). There is not sufficient data to allow conclusions to be drawn about the relative effectiveness of TEP compared with TAPP. Efforts should be made to start and complete adequately-powered randomised controlled trials, which compare the different methods of endoscopic repair.

In our study transabdominal hernia repair takes an average cut-to-suture time of 68.59 min. compared to 59 min. in extraperitoneal hernia repair ($p=0.038$). This operation time is reduced to 53 (TAPP) compared to 40 (TEP) ($p=0.041$) in high-volume hospitals. If time is the only difference between the two procedures it can be useful to consider it when inaugurating endoscopic hernia repair in a hospital. It is important to consider time, since one minute working time of a complete operating team is estimated to cost between 62.70 € and 300€ per hour.

In Conclusion the data shows that there is no such approach as one optimal procedure for all patients. The choice should be made individually, considering medical aspects (hernia size, co morbidity), and the competence of the surgeon in each procedure. And here the extraperitoneal procedure seems to be more effective because it can be done significantly faster than the transabdominal procedure.

Literature

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