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Early-Stage Quantitative Analysis of the Effect of Laparoscopic versus Conventional Inguinal Hernia Repair on Physical Activity

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Abstract
Aim: To compare the effects of laparoscopic versus conventional inguinal hernia repair techniques on patients' physical activity.
Materials and Methods: Ninety-three patients (between 20 and 59 years old) who presented with a need for inguinal hernia repair at the private Safa Hospital, General Surgery Clinic, were evaluated prospectively between November 2011 and March 2013. The patients' mean age was 46.1 (±12.9) years. They were divided into three groups according to hernia repair technique. Thirty underwent total extraperitoneal repair (TEP), 31 had transabdominalpreperitoneal repair (TAPP) and 32 had modified Bassiniprolene mesh grafting (MBPMG). All patients were examined in the physical therapy and rehabilitation unit just before and after the operation. Lower extremity muscles' isokinetic and isometric functions were measured with the Cybex isokinetic testing device. Patients' length of stay in hospital, need for analgesics in the postoperative period, visual analogue scale (VAS) scores, time of return to work and postoperative complications were also compared.
Results: Patients' need for postoperative analgesics, the use of VAS scoring system (between 0–10), complication rates and the patients' VAS scores on movement results were similar to those in the literature. On the postoperative third day, measurements recorded by the Cybex isokinetic testing device showed that the loss of strength in the lower extremities after the MBPMG procedure was greater than with TAPP and TEP. The isokinetic and isometric assessment of all cases revealed that postoperative mean muscle strength loss was two-thirds less in association with the laparoscopic procedure. Within a 95% confidence interval (CI), the significance of findings was accepted at P-values of less than 0.05 ($p<0.05$).
Conclusion: The quantitative data showed that there is a more favourable impact from laparoscopic hernia repair versus open surgery on patients' physical activity and return to active work.
Key words: Laparoscopic inguinal hernia repair, inguinal hernia repair with modified Bassini technique (MBPMG), Cybex isokinetic testing device