Aspects on Minimally Invasive Surgery for Rectal Tumours

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Aspects on Minimally Invasive Surgery for Rectal Tumours

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ABSTRACT

Background Transanal endoscopic microsurgery (TEM) and laparoscopic rectal resection are minimally invasive methods of surgery for rectal tumours. One aim of this thesis was to analyse the inflammatory response after minimally invasive surgery compared with open resection. Other aims were to investigate patient selection using magnetic resonance imaging (MRI) and endorectal ultrasound (ERUS) and to investigate the outcome of TEM for rectal cancer.

Methods Inflammatory mediators were measured using enzyme-linked immunosorbent assays (ELISA) in patients undergoing TEM, laparoscopic or open resection. Assessments of tumours using MRI and ERUS were compared with histopathology. Registry data from TEM procedures and salvage resection for rectal cancer were analysed. Low-risk tumours were defined as tumour stage T1, submucosal invasion Sm1-2, <3 cm, without adverse features, and these were separately analysed for outcome.

Results The increases of interleukin-6 and C-reactive protein were less pronounced after TEM and laparoscopic resection than after open resection. The staging accuracy using MRI was increased from 0.65 to 0.83 by combining lymph node assessment using MRI with bowel wall assessment using ERUS. There were no local recurrences after TEM for low-risk tumours.

Conclusions The inflammatory response after TEM and laparoscopic resection was limited compared with open resection. The staging accuracy was increased by a combined use of MRI and ERUS. The population-based oncological outcome of TEM for low-risk tumours was excellent.

Keywords: minimally invasive surgery, rectal neoplasm, inflammatory response, MRI, endosonography, transanal endoscopic microsurgery, TEM, rectal tumour, rectal cancer, local recurrence, outcome rectal cancer.

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