Methods for laparoscopic instrument tracking and motion analysis for objective assessment of surgical technical skills

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GRIN Verlag Gmbh Mrz 2015, 2015. Taschenbuch. Book Condition: Neu. 210x148x14 mm. Neuware - Doctoral Thesis / Dissertation from the year 2014 in the subject Medicine - Biomedical Engineering, grade: Excellent 'cum laude', , language: English, abstract: Minimally invasive surgery (MIS) has become in many surgical specialties and procedures the gold-standard choice due to its efficiency and benefits towards patient safety. However, the introduction of laparoscopic surgery has led to the need of developing new surgical skills different to those required for open surgery, with a significant learning curve to perform a safe laparoscopic surgery. Traditional subjective assessment methods of trainees are no longer adequate for surgical training. Reduced working hours as well as demands from surgeons and associations mean that more objective assessment tools that can accredit surgeons as technically competent are required. Evidence exists to validate motion analysis for laparoscopic technical skills assessment. Motion analysis of the laparoscopic instruments seeks to determine aspects that indicate the difference between surgeon's level of surgical dexterity. However, at the moment there is not an extended method to be used with current available training systems used in training laboratories as well as for the OR. The purpose of this book is to...

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