

This thesis covers several simulation based training aspects in minimally invasive surgery including simulation based training, simulation based assessment and the validation of a laparoscopic simulator. Until recently residency programs in laparoscopic surgery were based on self directed master-apprentice training and mainly consisted of on the job learning. Present-day innovations in laparoscopic surgery, reduced working hours and ethical concerns on preventable medical errors have moved training programs outside the operating room. The surgical landscape in minimally invasive surgery is changing and several consequent issues such as the effectiveness of laparoscopic simulation based training, objective assessment methods and variety in laparoscopic simulators are addressed in this thesis.

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