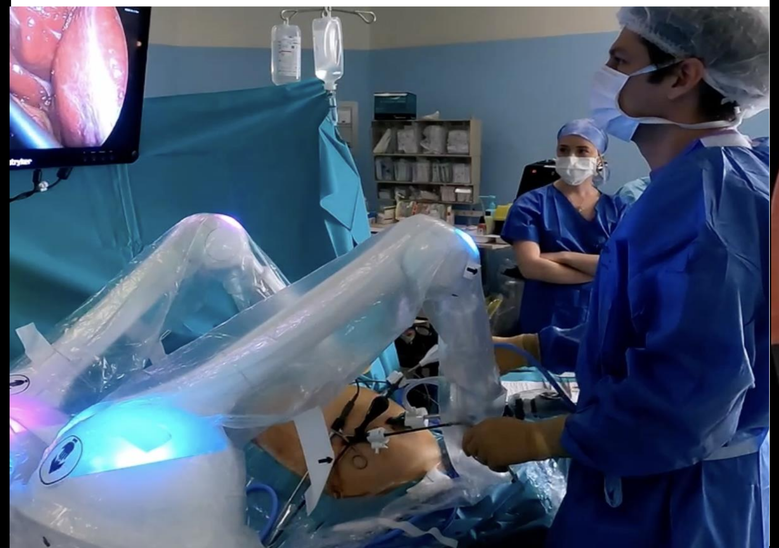
Feasibility of An Artificial Intelligence (AI)-Powered Bedside Digital Surgical Assistant to Improve Efficiency of Motion in Minimally Invasive Surgery (MIS)

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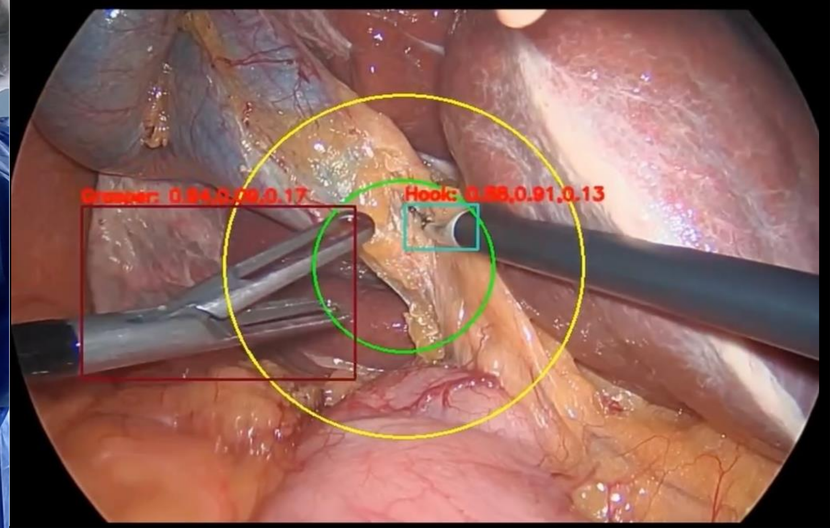
Efficiency of motion is critical in assessing surgical performance, with direct implications for quality, safety, and outcomes. In current platforms, performance is impacted by human factors. An AI powered system could have great value for reducing human error and improving performance. We sought to assess the feasibility of Maestro (Moon Surgical, Paris, FR), a novel bedside digital surgical assistant with AI-powered computer vision to improve efficiency of motion during MIS.

A prospective multicenter observational study was performed using the Maestro™ platform with AI-powered ScoPilot™ for 20 laparoscopic cases with expert video-based assessment using the validated GOALS (Global Operative Assessment of Laparoscopic Skills) scale, with attention to efficiency of motion.



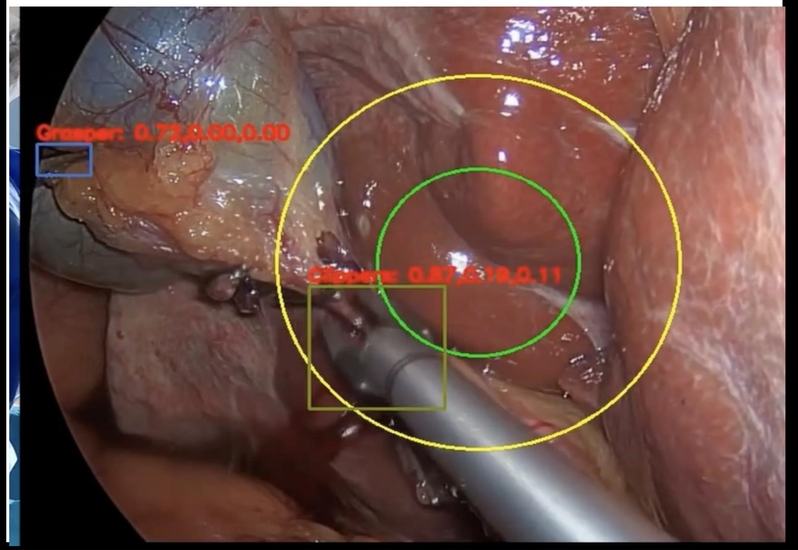
ScoPilot is a real-time computer vision tool that links the laparoscope with the instrument tips. ScoPilot intelligently adjusts to the instrument's change in position and depth to maintain optimal visualization and eliminating the need for manual repositioning.

Using ScoPilot, efficiency of motion was a perfect 5/5 in all procedures (n=16 cholecystectomy, n=2 each gastric sleeve and inguinal hernia repair).



Maestro with ScoPilot had optimal efficiency of motion across a range of procedures, surgeons, and centers. There was ideal visualization of the instrument tips, appropriate retraction, reduced manual repositioning of the camera, and optimal instrument control throughout each case.

Future work is ongoing to compare Maestro to other platforms for performance and outcomes.



*Scan here for a full-length case video using Maestro with ScoPilot for a laparoscopic cholecystectomy: