Stop the smudge: OpClear®, a novel solution to loss of vision during laparoscopic colorectal surgery

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OBJECTIVE

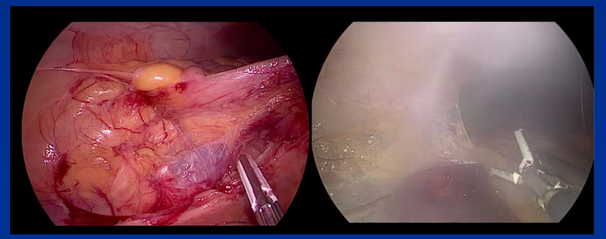
- Safe and efficient laparoscopic surgery is dependent upon good visualization. The operative visual field is often significantly reduced by material gathering on the distal laparoscopic lens. Repeated scope commonly required during laparoscopic procedures impedes operative progress, increases non-productive operating time, and requires removal and reinsertion of the camera. The OpClear® (Cipher Surgical Ltd., Coventry, UK) system presents a solution to this problem by allowing rapid and effective cleaning of the distal lens without the need for scope removal. The system consists of a reusable control unit (Figure 1) and a single-use 'C-clip' sheath fitted over the laparoscope (Figure 2). The system delivers saline and high flow carbon dioxide (CO_2) across the distal lens, washing and clearing matter from the optical surface with continuous 'auto demist' function, also preventing fogging due to condensation. An 'on-demand wash' function prompts a 2-second cycle of CO_2 and saline flush controlled via surgeon-activated foot pedal. We hypothesize that the unit will provide clear vision during all laparoscopic surgeries without scope removal and aim to present experience with the device.

METHODS

- We reviewed our experience with the OpClear® system in fifteen consecutive laparoscopic colorectal cases performed from March to August 2021.

Figure1. The OpClear System

Figure 2. Visual acuity during colorectal surgery with and without OpClear



- Outcomes assessed were total surgery time, mean number of vision loss events, and mean number of times the laparoscope had to be removed from the peritoneal cavity to be cleaned.

RESULTS

- Fifteen patients underwent laparoscopic colorectal surgery during the study period. The median age was 42 (range: 25-86) years, and 10 (66%) were female. Laparoscopic resections performed were: right hemicolectomy (n=6), single-site total abdominal colectomy (n=5), proctocolectomy (n=2), segmental colectomy (n=1), and Hartmann colostomy reversal (n=1). The median surgery time was 127 (range: 67-240) minutes, and the median loss of vision event number was 3 (1-6) per surgery. High levels of visual acuity were maintained (Fig 2) and there was no need for laparoscope removal during any of the surgeries. All surgeries were completed without any intraoperative complications.

CONCLUSION

- The novel OpClear® system has the potential to improve visualization and efficiency during laparoscopic colorectal surgery.

FUTURE DIRECTIONS

- Comparative randomized controlled trials are needed to assess the benefits and value of this novel system.

Disclosure: Honorarium OpClear