OpClear® Improving Visual Acuity and Reducing Scope Removal Cleaning Events

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1 WHY HAS OPCLEAR BEEN DESIGNED?

Safe and efficient laparoscopic surgery is dependent upon good visual acuity. However, for laparoscopic surgeons, it is a common experience that operative vision may be critically reduced by condensation and material gathering on the distal laparoscopic lens. The current methodology is to remove the scope from the patient during a procedure for cleaning. The OpClear Platform has been designed as the first automated demist technology with on-demand lens washing that will prevent and remove these materials whilst the scope is in-situ, therefore providing continuous intra-abdominal vision to the surgical team without scope removal and maintaining an uninterrupted surgical flow with fewer surgical errors and shorter operating times.



2 WHAT IS OPCLEAR?

The OpClear single use sheath is clipped onto the laparoscope and connected via a tube set to the OpClear Control Unit. Once the sheath is inserted into the abdominal cavity, an intelligent flow of CO_2 is delivered across the lens to remove and protect it from condensation and small particulates.



Before After

When required, an on-demand CO_2 and saline lens wash will rapidly clear larger visual obstructions such as blood or particles from energy plumes, therefore providing continuous vision throughout each procedure.

3 RESULTS

In a series of 84 Hand Assisted laparoscopic Donor Nephrectomies[1], the OpClear Platform provided effective intra-abdominal lens clearing, avoiding some 15 scope removals per case, along with the disruption to operative progress. In complex cases, the impact was even greater. In all cases, excellent visibility was maintained, notably during critical stages, e.g. vascular divisions. The OpClear Platform proved safe with no effect observed from the additional insufflation produced.



Average lens washes during a procedure[1]

4 FUTURE DIRECTIONS

The OpClear Platform provides an easy-to-use remedy to mitigate the issue of visual impairment resulting in the need to remove the scope during procedures in order to clean it. It provides continuous visual acuity which allows for uninterrupted procedures.

As visualization technology is constantly improving and operating rooms acquire integrated systems, OpClear will keep pace with the changing requirements of laparoscopic surgery. Customer feedback has been invaluable in taking the design from the workbench to a fully regulated medical device. To continue this evolutionary process, Cipher Surgical is looking to work with laparoscopic surgeons across all surgical specialities to support our future direction of providing a product that keeps pace with the advances in laparoscopic surgery.

> "Well accepted by theatre staff, excellent support for surgical training"
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> J Ellis
> Queen Elizabeth Hospital
> Birmingham, United Kingdom

1. Ellis J, Field M, Hamsho A, Inston N, Mellor S, Ready A. The use of intraperitoneal laparoscopic cleaning device to enhance operative visibility during laparoscopic donor nephrectomy. Poster presentation at ESOT 2019.

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