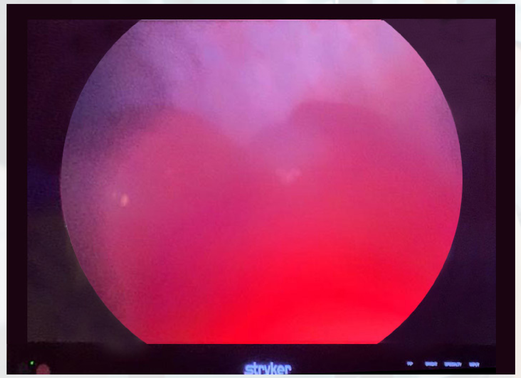


TROKIT™ In-Abdomen Lens-Cleaning

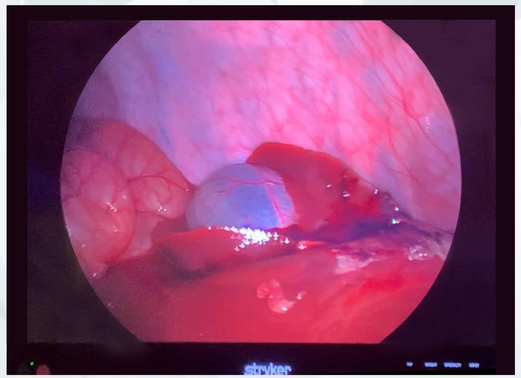
TroCare™ is the inventor of the TroKit™ family of devices, developed to solve the vexing problem of dirty laparoscopic camera lenses.

The Problem

During a laparoscopic and/or robotic surgical procedure, the lens of the laparoscopic camera encounters blood and tissue. When the lens does become dirty, it does not provide a clear picture of the surgical field. Presently, the only way to clean the lens is to remove the camera from the abdomen and clean it outside the body. This is not ideal because doing so is frustrating for the surgical staff, time-consuming, and has the added challenge of lens-fogging upon removal.



Lens Before TroKit



Lens After TroKit

Objective of the Device

The objective of the TroKit is to provide a simple, easy-to-use, affordable way to clean the laparoscopic camera lens while the camera is in the abdomen.

Description of Technology & Method of Use or Application





The TroKit is a small device – a few centimeters long– pushed onto the distal tip of a trocar or, in the case of a robot, the cannula. The TroKit grips the edge of the trocar to ensure that it cannot come undone. The TroKit can be used in all ports to allow for "port-hopping" but in most instances using it in only the primary camera port will be sufficient. An incision is made in the skin, and the TroKit and trocar are pushed through the fascia until they are situated in the abdomen. The camera goes through the trocar and the TroKit as it normally would if there were no TroKit affixed to the trocar. When the camera lens is dirtied, the physician makes a quick pull-push motion, bringing the camera into the TroKit and out again. This act cleans the camera because, upon exit from the TroKit, the camera lens is wiped clean with a specially designed and tested "wiper." The TroKit is effective for virtually all sizes of cameras and all types of lenses, whether recessed or flush. The TroKit can accommodate a zero-degree camera and a thirty-degree camera.

Preliminary Results

The TroKit has been tested in bench tests, wet labs, and cadaver labs. It has been used with the USA's leading laparoscopy and robot companies. It can be used repeatedly, without degradation in performance, over one hundred times. It is an extraordinarily simple and effective solution to a huge problem that numerous companies have attempted to address without success.

Conclusions/Future Directions

In due course, as with most technologies, there may be even better solutions to the challenge of lens-cleaning within the abdomen. Presently, TroCare stands alone with its solution for robotic and laparoscopic surgery. The TroKit is a device that is here and ready to be adopted. At the time of this abstract, FDA approvals are pending. We expect the FDA to clear the device by the time SAGES takes place. TroCare hopes to make the affordable family of TroKit devices available worldwide by Q3 of 2024.

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