

PRESS RELEASE

LESS – Laparo-Endoscopic Single-Site – Surgery:

LESS Surgery equipment and how it all works

Advanced instrumentation: ports, hand instruments and camera systems

Laparoscopic surgery involves an insufflation of the abdomen with carbon dioxide gas. This pushes the abdominal wall away from the intestine, effectively creating a working space for the surgeon. The dissection and manipulation of organs and tissues is performed using specific hand instruments in combination with magnifying mini camera systems through multiple small incisions of up to 1.5 cm through which small working channels (ports) are placed. With the release of a complete Olympus integrated system for *LESS* surgery, including TriPort and QuadPort, EndoEYE cameras and HiQ LS hand instruments, the technology advanced from dealing with multiple incisions to surgery through only one small incision.

An access port is placed in the incision site, often the navel. Each port has a boot that contains valves through which the hand instruments are introduced without any of the carbon dioxide gas escaping. The ports are inserted into the body through one incision as small as 1.5 cm and facilitate the handling of three or four conventional, curved or articulating hand instruments during laparoscopy. Separating the top boot from the base of the port allows for easy and safe specimen removal during the procedure, protecting both specimen and the small abdominal incision. Alternatively, it can be used to introduce items into the abdomen as well, for instance a laparoscopic gastric band in obesity surgery.

Single-site access does not allow for triangulation of conventional instruments. The EndoEYE LS videoscopes incorporate a deflectable control section preventing interference between instruments and camera. Together with EndoEYE LTF cameras with their flexible tips, these videoscopes are ideally suited to perform *LESS* surgery. Olympus developed a comprehensive line of innovative HiQ LS hand instruments to overcome ergonomic challenges, offering optimal ergonomics and providing comfort and flexibility to the surgeon. Pre-curved HiQ LS hand instruments have a double curve facilitating excellent manoeuvrability while still offering independent jaw rotation. The ergonomic grip offers easy handling. Also, pre-curved instruments are much more cost-effective compared to their disposable articulating counterparts as they can be sterilised and reused. These instruments allow for safe and efficient *LESS* procedures, in contrast to conventional or flexible instruments.

Professor Dr Jens-Uwe Stolzenburg from the University of Leipzig, Germany, frequently applies *LESS* techniques in urology, and has recently published data demonstrating that pre-curved instruments have improved efficacy in *LESS* procedures over articulating disposable instruments in addition to providing cost benefits. He confirms that pre-curved instruments have significant advantages with respect to the time requirement to accomplish surgical tasks as well as manoeuvrability compared to flexible instruments.

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