

PRESS RELEASE

Future advances in Minimally Invasive Surgery

LESS – is more!

Stockholm, March 19, 2009. Minimally invasive procedures have dramatically changed the face of surgery in recent years. By offering safer and gentler operations for patients, laparoscopy has become the gold standard for many interventions. Now, another paradigm shift appears to have taken place. With *LESS*, Laparo-Endoscopic Single-Site surgery, laparoscopic access to the abdomen is achieved with just one single incision for the entire procedure. In the majority of urological procedures performed using *LESS* surgery, an umbilicus incision is used that leaves virtually no postoperative scar. The growing number of urologists performing this new operative technique recently convened at the *LESS* symposium, initiated by Olympus Medical Systems Europa GmbH, at European Association of Urology's 24th Annual Congress. At this symposium, held in Stockholm, the urologists discussed the technology and methods they used and presented the results of the first several hundred cases. Critical to their success was the use of the TriPort and QuadPort. The TriPort was launched by Olympus at the beginning of the year, while the QuadPort will follow shortly. While various ports and methods can be used for *LESS* procedures, the TriPort has a unique design that allows surgeons to perform operations easier and with fewer device complications.

Conventional laparoscopy requires separate access for each instrument, resulting in multiple incisions to the abdominal wall. The TriPort allows three instruments to be passed into the abdomen simultaneously via one small (10 mm to 25 mm) incision, usually placed in the umbilicus. The QuadPort (to

be launched soon) provides a multi-channel for four instruments. By reducing the number of incisions in the abdominal wall, and confining the incision to the umbilicus, any surgical operation can result in less trauma to the patient, fewer complications and a far better cosmetic result by minimising or limiting injuries to internal organs, bleeding, infection and postoperative hernias. "Our initial experience with *LESS* surgery in donor nephrectomy is encouraging. Each intraoperative step was accomplished with confidence, similar to standard multiport laparoscopy," stated Professor Inderbir S. Gill, Cleveland, Ohio, USA.ⁱ

Long-term studies are essential to establish patient benefits, such as a more rapid healing phase and less pain, in addition to improved cosmesis. In this context, Olympus supports clinicians in evaluating this new technique. Hospitals are also anticipating the advantages. A gentler, less traumatic procedure not only lowers the risk of postoperative infections, but could potentially reduce the use of pain medication and shorten hospital stays.

TriPort and QuadPort feature flexible designs

With the design of the TriPort and QuadPort, an entirely new approach was taken to enable safer and more effective *LESS* surgery. Only a small incision of 10 mm to 25 mm is needed to insert the TriPort through the abdominal wall; the incision for the QuadPort may extend from 25 mm to 50 mm. The TriPort is designed for standard laparoscopies, while the QuadPort is constructed for more complicated types of surgeries that require large amounts of tissue to be removed and employ up to four instruments.

While it is arguable that *LESS* surgery is more difficult to perform than the more invasive standard laparoscopic approach, the unique design of the TriPort and QuadPort offer the easiest and most effective way to perform this novel surgery. In general, it allows the surgeon the greatest range of motion and the best handling of instruments. More specifically, the flexible design of the TriPort and QuadPort self-adjusts to any abdominal wall thickness up to

10 cm, and offers a powerful retracting force to the abdominal wall. This enhances the gas-tight seal, minimises the incision size and maximises access to provide greater control of the instrumentation. The TriPort features three inlets: two for instruments with diameters of up to 5 mm and one for instruments with diameters of up to 12 mm. The QuadPort is additionally equipped with a 15 mm inlet for larger suturing devices. Two further connectors enable insufflation and smoke evacuation during the surgery. The upper valve of the TriPort and QuadPort are detachable for tissue removal. Standard laparoscopic instruments and optics, such as the HD EndoEYE or HD LTF-VH with a deflectable tip from Olympus, are also suitable for *LESS* surgery. To give the surgeon even greater freedom of movement and ergonomics, Olympus is currently developing instruments especially for *LESS* surgery that will feature pre-bent shafts intended to achieve better triangulation.

***LESS* surgery crosses borders and a vast application spectrum**

In the past two years, *LESS* has inspired leading urologists from the US and Europe across various disciplines, and it is increasingly used in new and more demanding surgical applications. *LESS* is stimulating further developments in laparoscopy.ⁱⁱ Innovative equipment, such as the TriPort and the QuadPort, are playing key roles in the development of minimally invasive surgery. Experts forecast that *LESS* surgery will be used across a broad spectrum of applications, not only in urology but also in other fields, such as general surgery and gynaecology. Within urology, laparoscopic experts have already gained extensive experience with *LESS* surgery. The year 2007 registered the first keyhole nephrectomy performed through a single site. Further indications in nephrectomy, pyeloplasty, orchiectomy, prostatectomyⁱⁱⁱ and adrenalectomy followed only a short time later.^{iv} In Europe, urologists are quickly catching up to the pioneers in the US. The first tumour and donor nephrectomies were performed in Germany and Spain. With *LESS* surgery receiving more and more attention, various clinical evaluations that will indicate the future role of *LESS* procedures within

minimally invasive surgery are planned.

ⁱ Gill IS, Canes D, Aron M, Haber GP, Goldfarb DA, Flechner S, Desai MR, Kaouk JH, Desai MM. Single port transumbilical (E-NOTES) donor nephrectomy. J Urol. 2008 Aug;180(2):637-41.

ⁱⁱ Raman JD, Cadeddu JA, Rao P, Rane A. Single-incision laparoscopic surgery: initial urological experience and comparison with natural-orifice transluminal endoscopic surgery. BJU Int. 2008 Jun;101(12):1493-6.

ⁱⁱⁱ Barret E, Sanchez-Salas R, Kasraeian A, Benoist N, Ganatra A, Cathelineau X, Rozet F, Galiano M, Vallancien G. A Transition to Laparoendoscopic Single-Site Surgery (LESS) Radical Prostatectomy: Human Cadaver Experimental and Initial Clinical Experience. J Endourol. 2009 Jan 2. [Epub ahead of print]

^{iv} Tracy CR, Raman JD, Cadeddu JA, Rane A. Laparoendoscopic single-site surgery in urology: where have we been and where are we heading? Nat Clin Pract Urol. 2008 Oct;5(10):561-8.

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