

ALS newsletter

Editor's Introduction



Welcome to this latest ALS newsletter.

Who should perform laparoscopic surgery and moreover cholecystectomy?

Who would you want to perform your cholecystectomy? A dedicated laparoscopic surgeon or someone whose majority interests lie elsewhere? This question was considered at a recent ALS Council Meeting. There has been a move by some organisations to label this a core "upper GI" operation. That does a

significant disservice, in my opinion, to the very many excellent non-upper GI laparoscopic surgeons who perform this key operation safely and, most importantly, without incident. This debate perhaps hinges on the surgeon's laparoscopic competence, rather than any self-appointed arbitrary title. This question & the training of future generations is explored within by two senior council members of the ALS.

Is NOTES still a viable proposition? This was fiercely debated at the recent European Hernia Symposium in Gent, Belgium. The promise of NOTES has yet

to leave the laboratory whilst Single Incision Surgery (LESS/SILS/S-Portal) has successfully evolved from the drawing board to the operating theatre in the space of a few short years. However to relegate NOTES to history at this early stage of its evolution and to stop its development would be akin to stopping our pursuit of space after Apollo 11's first successful landing on the moon, and calling this a step too far for mankind, rather than a giant leap. It would thus fly in the face of our intrinsic need to push forward our scientific aspirations, and, our inherent desire to improve. Quite what will come from it should not be viewed with apprehension, but embraced as part of a natural stage of surgical evolution.

Innovation is vital to the development of laparoscopic surgery and perhaps the most well-received symposium in the last year was at the MATTU in Guildford, featuring 3D surgery and is reported here. The next ALS Annual Scientific meeting is to be held in Wales in November and will not only have a 3D session but will continue to try to push the boundaries of our profession. I look forward to seeing you there.

Mr Paras Jethwa, Newsletter Editor

President's Introduction

Our summer 2011 newsletter contains its fair share of opinion and debate as well as reports of all the last years academic meetings. Our Newsletter Editor Paras Jethwa most explicitly displays the two halves of his character with an excellent selection of excerpts from the laparoscopic literature and then an article about luxury watches!

Readers will all have strong views about who should be doing laparoscopic cholecystectomy and so the article by our President Elect is timely. The withdrawal of major upper GI cancer services from the majority of general hospitals together with the centralisation of vascular services and the proposed centralisation of rectal cancer surgery is changing the provision of surgical services beyond anything we could have imagined 25 years ago. The majority of emergency abdominal surgery is now provided in hospitals which have lost their upper GI cancer services and may well find other major surgery moving to larger centres. Many gastrointestinal surgeons are de-facto both upper and lower GI surgeons who offer emergency care and general gastrointestinal

operations to their catchment. Indeed these surgeons are often general laparoscopic surgeons as most intra-abdominal procedures are now done laparoscopically - so who should do cholecystectomy? Hopefully Tim Rockall's article will crystallise people's thoughts on this issue.

Another area of increasing interest is bariatric surgery and our Annual Scientific Meeting in Cardiff will feature the opportunity to hear some of the world's foremost authorities on the subject as well as watch four different surgeons each do a laparoscopic gastric bypass. In addition there will be a session on the latest developments in 3D surgery which seems to be reaching the point where it may spread more widely into our clinical practice. I hope the newsletter provides an enjoyable read and look forward to seeing you all in Cardiff.



Mr Michael Rhodes, President

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Laparoscopic cholecystectomy surgery and training by specialists – strategy for the new millennium

The stages in surgical training that I followed as a junior doctor in the 80's progressed from lumps and bumps to appendectomy operations and finally to hernia and varicose veins surgery. Once I was proficient in these procedures and had accumulated a great deal of experience in opening and closing many abdomens, I was then taken through my first cholecystectomy. This was after assisting many as second assistant and later progressing to first assistant.



The dawn of the "golden decade" of laparoscopic surgery highlighted the significance of laparoscopic cholecystectomy operations as it became apparent through these that abdominal visceral surgery could now be approached through a keyhole. This procedure certainly gained much attention as all experienced surgeons were quick to learn this operation by the formula of 'see one, do one and teach one'. Performing a laparoscopic cholecystectomy became the only laparoscopic operation for some surgeons whereas others saw this operation merely as the first stepping stone to progressing to more complex procedures. There was no easier first learning operation with less potential complications in sight.

The laparoscopic hernia repair arrived a few years later, which is now well-established and commonly practised in all hospitals. Annually, more than 80,000 hernia operations are carried out throughout the country.

Laparoscopic appendectomy on the other hand has simmered in the background and failed to

gain the same popularity. This procedure was mostly left in the hands of surgeons well-experienced in laparoscopic surgery but still performing emergency operations in hospitals, mainly including staff grade, associate specialist surgeons and some senior registrars.

Within the span of ten years, the paradigm of training was turned entirely upside down. A young doctor would now walk into theatre being trained on only a few lumps and bumps (which is now mostly done by GPs in their surgeries), followed by one or two open hernias and then straight into the deep end performing a laparoscopic cholecystectomy. This can not only be argued as the deep end for the training surgeon, but also certainly for the patient as well!

Starting with laparoscopic cholecystectomy as a learning operation can be likened to jumping a ladder with its first two or three steps missing. In colorectal terms it is the same as starting a junior doctor with a laparoscopic sigmoid or right hemicolectomy; in breast it is similar to sentinel node biopsy; and to vascular it is similar to aortic aneurysm bottom end as a starting operation.

Current accepted practices for laparoscopic cholecystectomy status are;

1. Commonly in hospitals acute cholecystitis is treated conservatively with a period of admission for a few days followed by six weeks lay off and then the operation with a further period of hospital stay and convalescence.
2. Laparoscopic cholecystectomy is the first laparoscopic

introductory teaching operation for doctors in training, whatever their sub specialist interest.

3. ST1 doctors are trained in laparoscopic cholecystectomy as the first and mostly the only operation in the first few years of their training regardless of their ultimate area of interest in surgery.
4. Surgeons from all sub specialist interests perform this operation for the above two reasons (or excuses) without any formal assessment of their competence, training or audit of their results. Some are offering this in the private sector only.

In the surgical community, we have placed a greater focus on training our doctors as well as the practical issues such as hospital workload associated with this very common operation. However in the process we appear to have shifted our sharp attention away from the most important player in this equation: the patient. This needs to be amended and we must reassess our focus as the patients involved are commonly females with young children. These patients require the best possible, most safe treatment which will provide the least morbidity for this benign condition.

In the case of training doctors, box trainers and wet labs followed by open generally surgery in theaters would be far more effective. The initial step wise minimal invasive training should start with simple laparoscopy, followed by laparoscopic appendectomy and then laparoscopic hernia surgery (including parts of incisional

hernias). Only once they have learned everything about laparoscopic instrument handling and hand-eye co-ordination in the body should they proceed to perform laparoscopic cholecystectomy (under supervision), only if they are keen in this area as their preferred speciality. Ideally this training should be carried out in an upper GI or hepatobiliary team set up with high volume work and appropriate supervision.

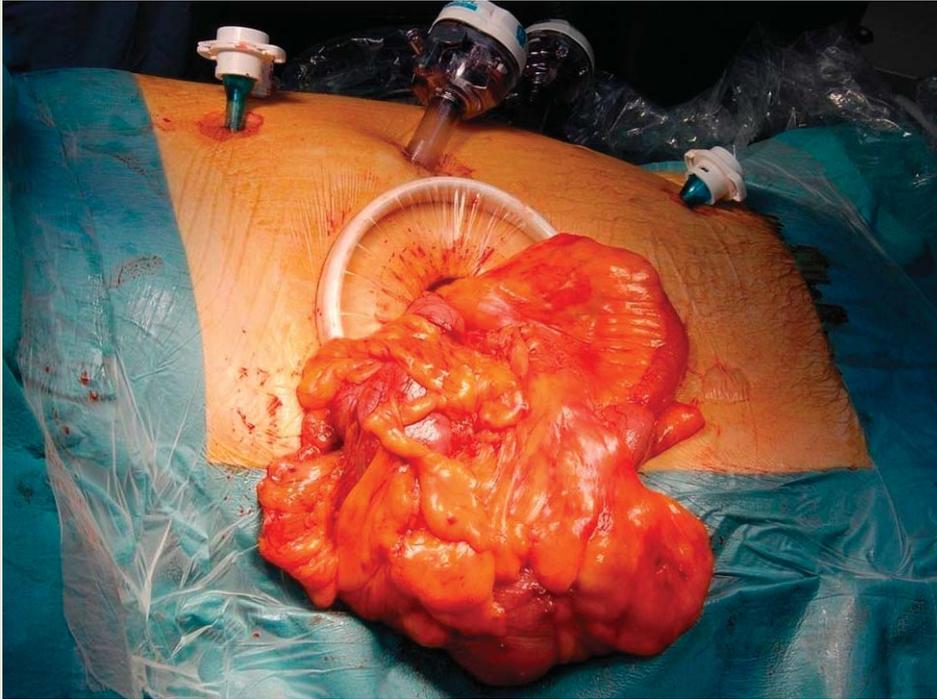
In summary, if I was a patient presenting with acute cholecystitis, I would prefer my hot gall bladder to be treated like a hot appendix. Moreover, laparoscopic surgery on the same day of admission following an ultrasound to confirm the diagnosis would be more efficient for the patients and requires a good setup and team approach. I would choose an Upper GI/Hepatobiliary surgeon who routinely performs this operation and who also has specialist interest and expertise in this area. The surgeon should not only be able to appropriately handle unexpected challenges during the operation but also offer surgery with less risk of operative bleeding, less chance of conversion to an open operation and minimal risk of injury to the common bile duct. An inadvertent injury to the common bile duct ought to be recognised on the table and accounted for. Furthermore, an immediate appropriate primary repair by that surgeon is ideal as delay in appreciation of such an injury carries significant risk.

Mr Amir Nisar
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Maidstone Hospital

Laparoscopic rectal cancer surgery

Full article – Chand and Heald, Br J Surg. 2011; 98(2): 166-7.

The refinement of surgical technique and, in particular, the acceptance of total mesorectal excision (TME) has been the single most important factor in reducing local recurrence rates in rectal cancer over the last 25 years. Over a similar time, laparoscopic surgery has become increasingly popular and is now considered a safe and feasible alternative to open surgery for cancer of the colon. However laparoscopic rectal cancer surgery remains a contentious issue.



Critics fear oncological compromise yet there is no evidence to suggest that in appropriately selected patients this is the case. Local recurrence, lymph node harvest and oncological clearance do not differ between the open and laparoscopic approach.

Interestingly, most studies on laparoscopic rectal cancer resection do not highlight the oncological aspects of the surgery but seem to emphasize other "surrogate" markers such as length of stay (LOS), patient recovery and return of bowel function. Sexual and urological dysfunction, which many patients find particularly distressing are rarely mentioned. LOS may be important in a socialised healthcare system but has minimal effect in the patient's long-term management of cancer. Furthermore, many of the peri-operative steps which aid in the reduction of LOS such as enhanced recovery programmes and nutritional and analgesic regimes may well produce similar results in open surgery. Nevertheless, laparoscopy does lead to some reduction in hospital stay and technical factors such as less handling manipulation and forcible retraction of the bowel as well as smaller incisions are part of this. But the debate around laparoscopic rectal cancer must not revolve around LOS. Laparoscopy provides an opportunity to do the important things better!

Criticism of early studies largely ignored the inevitable learning curve. Surgeons with far greater experience in open surgery were slowly getting to grips with the subtleties of laparoscopy. However, these pioneers have allowed us to exploit the advantages of laparoscopy today – better vision, improved access to the confines of the pelvis, traction and counter-traction beyond the limits of human



dexterity. This has been accompanied and complimented by improvements in technology although one may argue that the limited angulation of the staple guns is one of the main limiting factors in laparoscopic pelvic surgery.

Laparoscopy allows us to re-define surgical technique and improve on open surgery. This includes specific steps of the operation, eg. whether or not to routinely mobilize the splenic flexure. The advantages of laparoscopy mean the dissection can be more precise thus reducing collateral damage in the pelvis and functional outcome; blood loss can be anticipated and kept to a minimum; and ultimately positive resection margins can be reduced. What is still missing though is a standardization of technique although "masterclasses", national training programmes such as Lapco and peer-review have gone some way in making this a real possibility. Critics must be reassured that laparoscopy will not compromise oncology and the longer-term studies in the future will be key. In the short-term, one must concede that laparoscopic rectal cancer surgery may not be suitable for all patients, and equally all surgeons. But in suitably trained and experienced hands, laparoscopic rectal cancer surgery can be as safe and feasible as open surgery.

Mr Manish Chand

Colorectal Research Fellow
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Association of Laparoscopic Surgeons &
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2011 Annual Scientific Meeting

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ALS Annual Scientific Meeting 2010 Report



The 2010 ALS ASM was held in Nottingham on 25 and 26 November. The meeting adopted the usual format for the ALS with the Thursday dedicated to live operating from several different theatres and the Friday allocated for guest lectures and research presentations.

For me, the live operating day is always the highlight of the meeting. The Nottingham meeting was no exception, with a superb selection of cases arranged by our local organiser, Ian Beckingham. One of the highlights of the surgery was watching Chris Eden

do a radical pelvic lymph node dissection with superb skill and precision - laparoscopic urology is in safe hands if these sorts of skills can be disseminated to urology trainees! Our BJS Lecturer, Nick O'Rourke from Brisbane, undertook a right hemi-hepatectomy with great diligence, patience

and precision whilst entertaining the audience with his usual banter. Some commented that the urology was not of significant interest to the audience, but I found it fascinating. It was especially good to see how laparoscopic skills have spread out to other disciplines where those skills have been embraced and enhanced to deal with other areas of pathology.

The BJS Lecture, given by Nick O'Rourke, was a fascinating summary of the current status of laparoscopic hepatectomy, delivered with humour and considerable insight. A second guest lecture, delivered by Tony Dixon from Bristol, described the technique of ventral mesh rectopexy and vaginal sacrocolpopexy and the results of this procedure. There were also the usual short papers and video presentations. Several submitted abstracts covered topics on bariatric surgery and this area will be a focus for our 2011 meeting.

The meeting closed with the announcement that the David Dunn medal had been won by Danilo Miskovic. Prizes for the best DVD, won by Kamal Aryal, and the best poster, won by Susannah Wyles were also awarded.

Mr Michael Rhodes
President

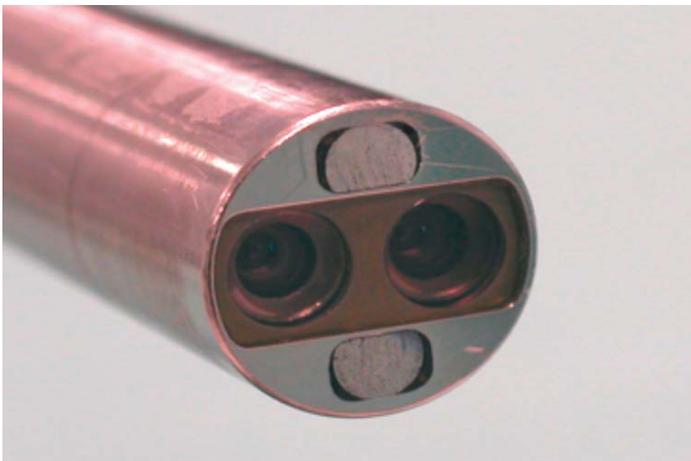
Stereoscopic Laparoscopic Surgery – a remerging and beneficial technology



The incredible power of a fully functional human visual system permits an accurate assessment of the distance from and between objects in close proximity. These judgments are critical for allowing precise targeting and manipulation of objects within our environment. To achieve this end we manage to process a vast range of visual stimuli that bombard our visual perceptual apparatus, and extract relevant depth cues.

Depth judgements can be achieved by interpreting information obtained by a single eye. These monocular cues include occlusion, expectation, motion, shadow and perspective. However, when two separate retinal images are generated additional binocular cues are available. The left and right eyes view the same object from a slightly different perspective. This binocular disparity provides an additional powerful depth cue referred to as stereopsis, which was first described by Professor Charles Wheatstone in 1838.

When surgeons perform laparoscopic surgery they are denied the important binocular visual cues that they have relied upon during open surgery to target and manipulate objects with precision. Laparoscopic surgeons experience a process of adaptation as they learn to interpret visual cues presented on a two dimensional monitor. This adaptation period contributes to the learning curve for the development of safe laparoscopic skills.

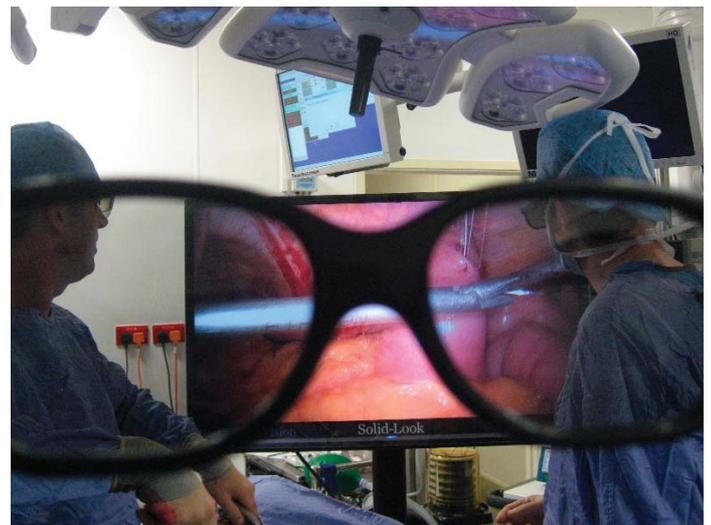


Stereoscopic imaging systems have been available for many years. The underlying principle of generating artificial three-dimensional images involves the presentation to each eye of two separate images of the same object separated horizontally. Their application to laparoscopic surgery is made possible by the use of a specialised dual channel stereoendoscope. The two channels are separated within the shaft of the endoscope to produce two slightly different left and right images of a visual target. Early surgical

systems relied on dual projection technology whereby each eye views separate left and right image using a head mounted display. An alternative method used frame sequential technology whereby alternate left and right images occupy the surgical display and can only be seen by the corresponding eye using active synchronised eyewear via an infrared link.

Several studies reported an increased perception of depth and improvements in precision performance of laparoscopic skills tasks when surgeons used the stereoscopic vision systems. Despite these benefits early stereoscopic systems failed to achieve growing popularity among the surgical community for laparoscopy. The main concern appeared to relate to poor tolerance of the projection technology following extended use and the development of symptoms of visual fatigue. Recently the development of passive polarising display technology has permitted the projection of real time full high-definition flicker-free stereoscopic images.

The latest stereoscopic systems require the surgeon to wear lightweight polarising eyewear similar to those worn during cinematic 3D performances. There is no need for a synchronised infrared link with the display and all members of the operating team can view the 3D images on a large 46-inch high definition display.



Stereoscopic Laparoscopic Surgery can be applied to a wide range of laparoscopic procedures to provide additional depth cues for the surgeon. Currently 15 laparoscopic procedures have been successfully performed at MATTU using both the Viking 3DHD System (Viking Systems) and EndoStereovision (Solid-Look). These have included laparoscopic cholecystectomy and cholangiography, colonic resections, distal pancreatectomy, splenectomy, minimally invasive oesophagectomy, TEP hernia repair, Hellers cardiomyotomy and hysterectomies. Our recent studies demonstrate that novice surgeons gain significant benefits learning laparoscopic skills using passive polarising stereoscopic images with a reduction in both time and error rates compared to traditional two-dimensional viewing systems. Current research at MATTU is investigating the effect on surgeons of extended viewing of stereoscopic images and the implications for their oculomotor and visual perceptual performance.

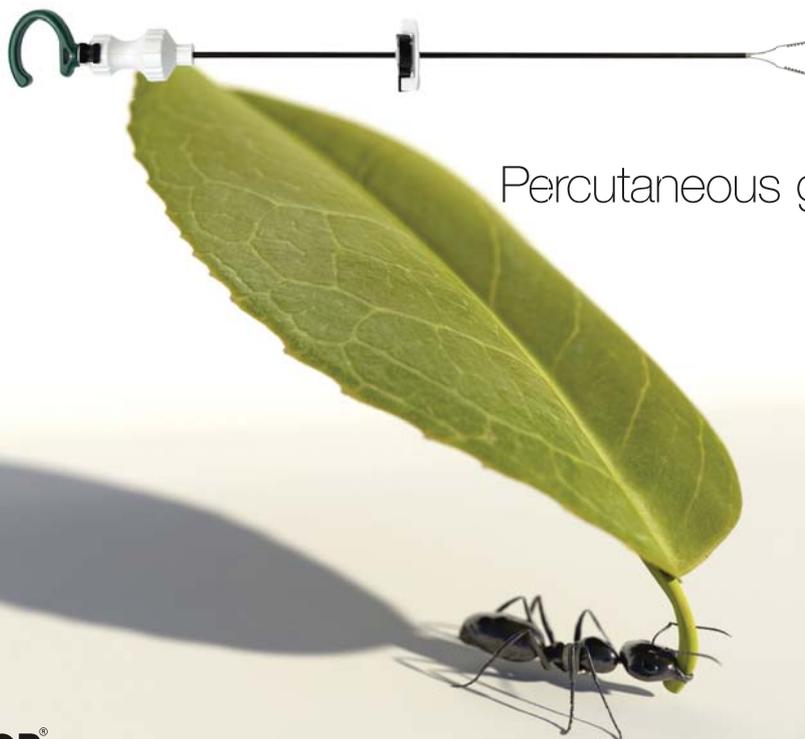
The challenges of 3D transmission, editing and large screen projection have also recently been overcome to allow delegates to view real time and edited Stereoscopic Laparoscopic Surgery at a recent 3D Laparoscopy Symposium at MATTU and will be used at the forthcoming ALS Annual Scientific Meeting in November 2011.

**Mr R Smith, Mr A Day, Professor ME Bailey,
Professor TA Rockall, Mr I Jourdan**
The Royal Surrey County Hospital

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Laparoscopic Training Bursaries 2011

The ALS is awarding 15 generously funded Stryker Training Bursaries of a value of approximately £1,000 each during 2011 (7 Training Bursaries have been awarded in February 2011). The purpose of these awards is to enable specialist registrars and new consultants, within 2 years of appointment, to extend their training in minimal access surgery by attending a Laparoscopic Surgery Skills Course of their choice and appropriate to their level of training, held at The Royal College of Surgeons of England in the prestigious Raven Department of Education. Please note the award does not cover travel or accommodation expenses.

In order to be considered for one of the remaining eight Stryker Training Bursaries, candidates should initially email jtreglohan@asgbi.org.uk to request an application form. The completed form must be returned to Mr Mark Vipond, Honorary Secretary of the Association of Laparoscopic Surgeons, at The Royal College of Surgeons of England, 35-43 Lincoln's Inn Fields, London WC2A 3PE detailing why the Stryker Training Bursary would be beneficial. A full list of available courses can be downloaded from www.rcseng.ac.uk (visit the education section and search using the term laparoscopic). The deadline for receipt of applications is Friday 12 August 2011 for the eight awards.

The successful applicants will be expected to produce a brief report of their course for publication in the ALS Newsletter. Any further enquiries should be emailed to jtreglohan@asgbi.org.uk / Tel +44(0)20 7973 0305.

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Single port surgery

As I sit in my hotel room on yet another single port course, I ponder on the role single port surgery will have in the future. I sometimes wonder if this is yet another gimmick from companies to sell us new ports and new equipment. I then look at all the data we have accumulated in the last three years of single port surgery.



In the first year, there was a great rush to publish feasibility studies followed quickly by small cohort studies. In the last 12 months we are beginning to see large cohort data (occasionally with comparison data from the same unit), some randomised controlled trial (RCT) data and there are even some systematic reviews. Unlike the laparoscopic boom of the 1990s, which was called "biggest unaudited free-for-all in the history of surgery" (Cuschieri 1995), this rush to publish and the NICE guidance has provided some form of regulation at least in the UK.

The question on everybody's minds is..."Will this take off and become an established technique or will it fizzle out?" Looking at the papers published, where the majority are from the US would suggest that the body-conscious population over there will want this drift in surgical technique. Possibly it will become established in the armamentarium of surgeons practicing over there.

In the UK, we are less convinced. There are pockets of surgeons scattered around the country practising the dark arts of single port surgery labeled as "only interested in cosmesis but not the safety".

The holy grail of single port surgery appears to be the cholecystectomy, with everyone realizing the potential value of establishing this technique and the size of market within the UK and Europe. The data published suggests equivalence in the results in these early days of surgery. In single port cholecystectomy a systematic review revealed a completion rate of 90.7% and a complication rate of 6.1% with the majority of complications being secondary to gall stone spillage. The incidence of bile duct damage is reported at 0.09% and a bile leak rate of 0.4% (Stavros 2011). The mooted possibility of incisional hernia is reported at 0.09% in the same systematic review. The RCTs are beginning to report equivalence or improvement in post operative pain scores and earlier discharges. Studies have not shown a poorer outcome. All the studies do admit, single port surgery is not for all patients, the obese (BMI>33), the acute cholecystitic and older patients should be taken with caution. Thus, I can conclude that single port surgery should be undertaken with adequate training and caution. It is feasible to produce high quality single port cholecystectomy results. If this surgery produces less scars and is as safe as laparoscopic surgery with the added benefit of possibly reducing pain, why not attempt it? Should there be problems, we could always add extra ports and it will return to normal laparoscopic surgery. This is only a drift in surgical technique rather than a shift in the whole practice of laparoscopic surgery.

Single port surgery can also be used routinely in a myriad of operations. I now routinely perform single port TEP hernia repairs with good results, which I have presented at SAGES, ALS and ELSA. There are countless papers presenting large number of other operations. If one is not convinced about single port cholecystectomies, then a visit to other units may show how this little 'single port' may be novelly used.

A caution, before starting on your own programme, I would suggest adequate training in the challenges and techniques of this single port. There are procedures and patients that are not suitable for this type of surgery. There are benefits in the right patients. I am an enthusiast not a fanatic about this little single port. I would encourage surgeons to explore though appropriate channels this new dark art.

Mr Yuen Soon
Consultant Surgeon
Royal Surrey County Hospital



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Primum non nocere – is there a role for humidified warmed insufflation?

Firstly do not harm, the Hippocratic Oath taught, and surgeons adhere to that dictum. Adopting less invasive procedures has caused us to re-evaluate many practices standard in the old days of open surgery. I was fortunate to be involved early in the laparoscopic revolution and have enjoyed the intellectual rigor we apply to reach valid conclusions. But we only know what we know and don't know what we don't know!

The first time I felt carbon dioxide blow at full force onto my hand I was astonished to note how cold it seemed – fully 30° F or more below my body temperature – and they say an ill wind blows no good. They are right. Of equal concern is that medical grade carbon dioxide is effectively totally dry. When we made this observation, we were studying the potential for laparoscopically delivered CO₂ to be the vector for undesirable passengers such as viruses, tumor cells, or detritus from insufflators. This discovery led to an exploration of how the gas might impact peritoneal health and there is a wealth of literature attesting to the long term consequences of thermal or desiccating injury to the bowel – intense inflammation, pain and adhesion formation with all their attendant negative sequelae.

In open surgery we are acutely aware that unless we protect the bowel with warmth and moisture – in the form of wet lap pads for instance – the bowel dries, swells and looks most unhealthy. As a passionate aviator I know a little about the physics of weather so the impact of cold, dry gas on a warm moist environment made sense to me. However, for those of you who are not fascinated by inversions and fronts a more mundane parallel works equally well. When stepping out of the shower, a wet body dries more readily with warm rather than cold air, and when sweating on a hot day, evaporation is more efficient in a low humidity atmosphere. The same rules pertain to

the peritoneal cavity – insufflation with cold, dry gas will desiccate the bowel, warm dry gas will do so even more profoundly, but warm, moist carbon dioxide will maintain the status quo and prevent negative outcomes.

Of course, in practice it is hard to document these improvements with the standard tool of modern medical evaluation, the prospective, randomized, double blind clinical trial. But just as no surgeon would dream of operating on the open abdomen without protecting the bowel, no laparoscopic surgeon should do likewise by not warming and humidifying the gas. To again reference my association with aviation, I recall a well-loved article that pointed to the paucity of Level 1 evidence confirming the value of parachutes in preventing injury when falling from a great height!; although I have never felt the urge to jump out of a perfectly sound airplane, if the spirit ever moves me I shall certainly strap on a chute! I recommend using the laparoscopic equivalent to help ensure we do not harm, as Hippocrates urged us.

References

1. Smith GCS, Jill P Pell JP Parachute use to prevent death and major trauma related to gravitational challenge: systematic review of randomised controlled trials BMJ 2003; 327:1459 – 1461

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Through the Keyhole

A selection of recently published articles

Pneumatic Dilation and Laparoscopic Heller's Myotomy Equally Effective for Achalasia.

N Engl J Med 2011; 364:1807-1816

Many consider laparoscopic Heller's myotomy (LHM) to be superior to pneumatic dilation for the treatment of achalasia with LHM increasingly considered to be the treatment of choice. In this RCT 201 patients, with newly diagnosed achalasia, were assigned to pneumatic dilation or LHM with Dor's fundoplication. The primary outcome was therapeutic success (a drop in the Eckardt score to ≤ 3) at the yearly follow-up assessment. The secondary outcomes included the need for retreatment, pressure at the lower oesophageal sphincter, oesophageal emptying on a timed barium esophagogram, quality of life, and the rate of complications.

95 patients had pneumatic dilation & 106 to LHM. Mean follow-up time was 43 months. There was no significant difference between the two groups in the primary outcome; the rate of therapeutic success with pneumatic dilation was 90% after 1 year of follow-up and 86% after 2 years, as compared with a rate with LHM of 93% after 1 year and 90% after 2 years ($P=0.46$).

After 2 years of follow-up, there was no significant between-group difference in the pressure at the lower oesophageal sphincter (LHM, 10 mm Hg pneumatic dilation, 12 mm Hg, $P=0.27$); oesophageal emptying, as assessed by the height of barium-contrast column (LHM, 1.9 cm; pneumatic dilation, 3.7 cm [95% CI, 0 to 8.8]; $P=0.21$); or quality of life. Perforation of the oesophagus occurred in 4% of the patients during pneumatic dilation, whereas mucosal tears occurred in 12% during LHM. Abnormal exposure to oesophageal acid was observed in 15% and 23% of the patients in the pneumatic-dilation and LHM groups, respectively ($P=0.28$).

This study concluded that after 2 years of follow-up, LHM, as compared with pneumatic dilation, was not associated with a superior rate of therapeutic success. (European Achalasia Trial Netherlands Trial Register number, NTR37, and Current Controlled Trials number, ISRCTN56304564.)

Evaluating Systemic Stress Response in Single Port vs. Multi-Port Laparoscopic Cholecystectomy.

J Gastrointest Surg (2011) 15:614-622

Does SILS reduce measurable surgical stress? This study from Imperial seeks to evaluate this response in SILS cholecystectomy vs. a conventional laparoscopic approach by comparing assays of acute-phase proteins and inflammatory cytokines.

35 consecutive patients were included. 11 underwent SILC and 24 underwent LC. Primary endpoint measures included levels of interleukin-6 and C-reactive protein measured pre- and post-operatively. Length-of-stay (LOS) and postoperative morbidity were secondary endpoints.

This study reports no statistically significant differences were found between SILC and LC for interleukin-6 and C-reactive protein levels, LOS and duration of surgery. There was also no correlation between systemic stress response and operative parameters. They report no intra-operative complications.

Whilst this study has shown no surgical disadvantage of SILC (with potential advantages of cosmesis, reduced incisional pain and well-being – though these are not proven or part of the study) these data indicate no difference in systemic stress between SILC and LC when performed in a University centre.

Laparoscopic surgery for chronic groin pain in athletes is more effective than nonoperative treatment: a randomized clinical trial with magnetic resonance imaging of 60 patients with sportsman's hernia.

Surgery. 2011 May 4.

When is a hernia not a hernia? This study from Finland is the first RCT that evaluates the role of surgery vs. conventional non-operative therapy in athletes. 60 patients with chronic groin pain (with 3 to 6 months of symptoms) were recruited. All patients were evaluated clinically and by MRI. Inclusion criteria included bone marrow oedema on MRI (though this was not universal) and no true hernia. Patients were randomised to TEP or 2 months of physiotherapy, steroid injection, and NSAIDs. The athletes in both treatment groups had similar characteristics and pain scores.

Operative repair was more effective than nonoperative treatment at decreasing chronic groin pain up to 12 months of follow-up ($P < .001$). Of the 30 athletes who underwent operation, 27 (90%) returned to sports activities after 3 months of convalescence compared to 8 (27%) of the 30 athletes in the nonoperative group ($P < .0001$). Of the 30 athletes in the conservatively treated group, 7 (23 %) underwent operation later because of persistent groin pain. Most interestingly post TEP MRI demonstrated resolution of bone marrow oedema. This paper concluded that TEP was more efficient than conservative therapy for the treatment of sportsman's hernia.

Laparoscopic fixation of biologic mesh at the hiatus with fibrin or polyethylene glycol sealant in a porcine model

Surg Endosc. 2011 May 19

The use of tacks when fixing an incisional hernia can be both a costly and painful affair. Whilst useful in the prevention of recurrence, mesh fixation at the hiatus has been associated with catastrophic complications and alternative techniques are thus encouraged.

The objective of this study was to determine the acute and longterm fixation strengths achieved by fibrin or polyethylene glycol (PEG) sealants to secure biologic mesh at the oesophageal hiatus in a porcine model.

They used 32 female domestic pigs in four groups. The four groups respectively received acute fibrin sealant, acute PEG sealant, chronic fibrin sealant, and chronic PEG sealant. Laparoscopically, a 5.5 x 8.5-cm piece of Biodesign Surgisis Hiatal Hernia Graft (porcine small intestine submucosa) was oriented with the U-shaped cutout around the gastroesophageal junction and the short axis in the craniocaudal direction to simulate hiatal reinforcement with a biologic mesh. The mesh then was secured with 2 ml of either fibrin sealant or PEG sealant. The pigs in the acute groups were maintained alive for 2 h to allow for complete polymerisation of the sealants, and the pigs in the chronic group were maintained alive for 14 days. After the pigs were euthanized, specimens of the mesh-tissue interface were subjected to lap shear testing to determine fixation strength, and hematoxylin and eosin (H&E) stained slides were evaluated for evidence of remodelling.

This group reported no significant differences were observed between the acute and longterm fixation strengths or the remodeling characteristics of the two sealants. Fixation strength increased significantly over time for both types of sealant (This was presumably due to tissue in growth – with remodelling supporting this – Editor). This study supports the use of non-mechanical fixation in this mesh.

Bile duct injury and use of cholangiography during laparoscopic cholecystectomy

British Journal of Surgery 2011; 98: 391-396

Bile duct injury (BDI) remains the most serious complication of laparoscopic cholecystectomy (LC). A Swiss database was used to identify risk factors for BDI and to assess the value of intraoperative cholangiography (IOC) with respect to BDI. Data for 31, 838 patients from 114 Swiss institutions who underwent LC for acute or chronic cholecystitis between 1995 and 2005 were used. Acute cholecystitis and chronic cholecystitis were defined according to the clinical picture, intraoperative findings (perforation, empyema) and histopathological examinations. Postoperative complications were summarised as either local (such as trocar haematoma, wound infection) or systemic (for example pulmonary embolism, cardiac decompensation, UTI). Potential risk factors for BDI were screened by univariable analysis. For assessment of duration of surgery as a potential risk factor for BDI, patients with any additional intervention other than 'simple' LC (such as conversion to open surgery) were excluded from analysis.

Over 11 years, 101 patients sustained BDI during LC, representing an overall incidence of 0.3%. The conclusion stated that male sex and prolonged laparoscopic surgery are independent risk factors for BDI during LC, and that frequent use of IOC does not seem to reduce BDI or the number of injuries missed during surgery. Comparison of groups with and without intraoperative cholangiography showed no difference in the incidence of BDI and BDI's missed during surgery.

Randomized clinical trial of routine on-table cholangiography during laparoscopic cholecystectomy

British Journal of Surgery 2011; 98: 362 – 367

A RCT was undertaken to assess the utility of routine on-table cholangiography (OTC) during laparoscopic cholecystectomy for gallstone disease. Some 190 patients with a history of biliary colic or cholecystitis and a low predictive risk for choledocholithiasis were randomized to undergo elective laparoscopic cholecystectomy alone or elective laparoscopic cholecystectomy with OTC. Intraoperative findings and postoperative outcomes for the two groups were compared. The primary outcome measure was the incidence of common bile duct (CBD) stones.

OTC was associated with a significantly longer mean operating time but there was no association between performance of OTC and postoperative morbidity. During a 1-year follow-up, no patient in the OTC group re-presented to hospital with recurrent biliary symptoms. In contrast, four of the patients allocated to surgery alone re-presented with symptoms suggestive of CBD obstruction. They concluded that routine cholangiography in patients with a low risk for CBD stones does not seem justified from the results of this trial.

Short-term outcomes after elective minimally invasive colectomy for diverticulitis

Br J Surg. 2011 Mar;98(3):431-5

The role of minimally invasive surgery in complicated diverticulitis is still being elucidated. The aim of this study was to compare short-term outcomes in patients undergoing minimally invasive surgery for complicated or uncomplicated diverticular disease. Complicated disease was defined as diverticulitis associated with abscess, fistula, stricture or bleeding. All 361 patients who had elective minimally invasive surgery for diverticulitis between 2003 and 2008 were identified from a prospectively maintained database.

Results of the study showed that conversion rates were similar for complicated and uncomplicated disease (14.0 versus 11.6% respectively, $P = 0.514$). No significant differences were found between the groups with respect to return of bowel function (mean 3.1 versus 3.2 days respectively), morbidity (27.9% versus 19.6%) or mean length of stay (5.4 versus 4.8 days). There were no deaths within 30 days, but the study did not mention mortality after 30 days.

The study concluded that elective minimally invasive colectomy is feasible for patient with uncomplicated and complicated diverticulitis, with equivalent outcomes.

Systematic review and meta-analysis of intraperitoneal local anaesthetic for pain reduction after laparoscopic gastric procedures

British Journal of Surgery 2011; 98: 29-36

A systematic review and meta-analysis was carried out to investigate the clinical effects of IPLA in laparoscopic gastric procedures. Searches were carried out using 6 different databases and relevant meeting abstracts and reference lists were searched manually. This method identified a total of 5 randomized control trials for inclusion in the meta-analysis. There was no significant heterogeneity between the trials. Based on this meta-analysis there appeared to be reduced abdominal pain intensity associate with IPLA, with an overall mean difference in pain score of -1.64 (95 per cent c.i. -2.09 to -1.19 ; $p < 0.001$), based on a visual analogue scale. It also showed a reduction in incidence of shoulder tip pain (overall odds ratio 0.15; 95 per cent c.i. 0.5 to 0.44; $p < 0.001$) and opioid use (overall mean difference -3.23 ; 95 per cent c.i. -4.81 to -1.66 ; $p < 0.001$).

The conclusion states that, based on this meta-analysis, there is evidence in favour of IPLA in laparoscopic gastric procedures for reduction of abdominal pain intensity, incidence of shoulder pain and postoperative opioid consumption.

Treatment for retained common bile duct stones during laparoscopic cholecystectomy; The Rendezvous Technique

Arch Surg. 2010; 145(12):1145-1149

The paper design was a case series and its objective was to determine the feasibility and efficacy of the laparoscopic intraoperative Rendezvous technique for common bile duct stones (CBDS). 110 patients were enrolled in the study and in all patients CBDS diagnosis was reached by intraoperative cholangiography. The laparoscopic Rendezvous technique proved to be feasible in 95.5%. Conversion of the laparoscopy was needed in 2 cases of successful rendezvous. 2 major complications and 2 cases of bleeding were registered after sphincterotomy was successfully performed with rendezvous and there was one case of severe pancreatitis after a traditional sphincterotomy following a failed rendezvous. The paper concluded that Rendezvous is a feasible option for treatment of CBDS allowing only 1 stage of treatment even in acute cases such as cholecystitis and pancreatitis.

Outcome of laparoscopic duodenal switch for morbid obesity

British Journal of Surgery 2011; 98: 79-84

The aim of this study was to determine the safety and efficacy of laparoscopic duodenal switch (LDS) as a treatment option in a selected group of patients with morbid obesity. A retrospective analysis of a prospective database was carried out to assess the frequency of all complications and alterations in weight, BMI, co-morbidity and quality of life. The analysis included 121 patients who underwent LDS between April 2003 and March 2009, with a mean preoperative weight of 160kg and median BMI of 55 kg/m². All procedures were performed laparoscopically. There was no in-hospital, 30-day or 90-day mortality but mortality after 90 days was not mentioned. 4 patients (3.3%) suffered clinical leaks and 2 patients (1.7%) developed a port-site hernia. Median weight loss, calculated as percentage excess weight loss based on an ideal BMI of 25kg/m², was 75 (33-123) per cent at 1 year (121 patients), increasing to 90 (49-131) per cent at 2 years (107 patients). 36 of 40 patients with diabetes mellitus were in remission at 12 months. 6 patients developed transient protein deficiency of whom 4 had severe hypoalbuminaemia (serum albumin $< 25\text{g/L}$) and required supplementary enteral feeding. 11 patients developed Vitamin A deficiency. The paper concluded that the LDS procedure is a safe and effective treatment for morbid obesity and its associated co-morbidity in selected patients.

Prospective study of health-related quality of life after Roux-en-Y bypass surgery for morbid obesity

British Journal of Surgery. 2010; 97: 1541-1546

The aim of this study was to evaluate the effect of Roux-en-Y gastric bypass for morbid obesity on health-related quality of life (QOL) during the first year of follow-up. The WHO Quality of Life – Brief, which has been shown to have good validity for use across different countries and different patient groups, was administered 1 month before operation, and at 1, 3, 6 and 12 months after surgery. Body Mass Index, co-morbidities and operation-related complications were measured at these times. A total of 102 patients were enrolled. The study found that the physical, psychological and social domains improved after bariatric surgery, with simultaneous reduction in weight and improvement in co-morbidities. There was a dip in scores in physical and psychological domains 3-6 months after surgery, significantly related to complications. All patients gradually improved between 6-12 months after surgery, reaching levels similar to those of healthy subjects.

The study throughout fails to mention what these complications actually are that had a significant impact on their scores. Furthermore, the study was not a randomised controlled trial, and hence the magnitude of the placebo effect of surgery cannot be determined. Longer follow-up is needed before making interferences about bariatric surgery

Dr Aisling Hillary, BMBS (Bachelor of Medicine, Bachelor of Surgery)
Dr Lucy Morgan, MBChB BSc

Winner of the ALSGBI Trainee prize at the ASiT Annual Conference

Establishing construct validity in an animal tissue model for laparoscopic right hemicolectomy: a feasibility study

Aims: Surgical simulation is of increasing importance with the advent of working time directives and may eventually fill the gaps in surgical education that have been created. In order to improve the standard of simulator training, new models need to be developed and improved upon. Animal tissue is cheap and provides relatively realistic tactile feedback. Despite being widely used, there are no reports in the literature of validation of an animal tissue based simulator. We assessed the feasibility of establishing construct validity in a novel animal tissue model for laparoscopic right hemicolectomy.

Materials and Methods: Participants performed two defined sections of a laparoscopic right hemicolectomy using the novel model that has been developed by WIMAT (Fig 1). The model is not designed to provide a face valid representation of human anatomy. Instead, it allows trainees to practice a right hemicolectomy. The simulated procedure is carried out with the model placed inside a simulator. The procedures

were marked independently by video using the LapCo Objective Structured Assessment of Technical Skills(OSATS). Participants scores were compared to the number of real-world lead laparoscopic operator procedures they had performed.

Results: Six participants of varying experience completed a total of 16 procedures. Real-world laparoscopic experience showed a statistically significant positive correlation with their performance during the exposure ($p=0.005$) and vascular pedicle ($p=0.05$) sections, and the total time taken to complete the task ($p<0.001$). Laparoscopic experience also correlated significantly with technical skill ($p=0.02$) and less errors ($p=0.04$). A strong positive correlation was seen in all other measures.

Conclusions: Simulation in surgical training is exciting and innovative, and may help overcome the difficulties imposed by the EWT. Animal tissue is cheap and can provide trainees with more realistic tactile and visual cues. This study



Fig 1- The ileocolic pedicle section of the WIMAT model

was able to distinguish between surgeons based on their real-world laparoscopic experience using a novel animal tissue right hemicolectomy model as assessed by OSATS. Thus, the construct validity of the platform is established in this feasibility study. Animal tissue models are widely used in surgical training centres, and should be validated with the same vigour that computer based simulators have been.

D.Stevens¹, J.Mason¹, S.Goddard², N.Warren², B.Appleton², S.Phillips², J.Torkington²

¹ Cardiff University

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33rd International Congress of the European Hernia Society

10-13 May 2011 Ghent, Belgium

The 33rd International Congress of the European Hernia Society was held in the picturesque city of Ghent in Belgium. With its roots in the 13th and 14th centuries (though remains of previous civilisations have been traced back to the Iron & Stone ages) there was an abundance of history and sites of interests. With a small population of a quarter million there was a laid-back feel to the city with both the Belfry (see picture below) and the adjacent cloth hall recognised by UNESCO as World Heritage Sites in 1998 and 1999. Whilst Ghent was relatively easy to reach via Eurostar there was a dearth of taxis on arrival and, with a very relaxed public transport system the time taken to travel within



Belgium was the same as that taken to get there from London! Of greatest concern to me was the general "death wish" by the local cycling population who, oblivious to oncoming cars, smiled at you as you passed within inches of them. I can't imagine any longer survival around central London!

Having had a less than satisfactory venue in Istanbul in 2010 the organisers put on a very good show (not quite to Royal Wedding standards – but not bad) and had

both an interesting and varied program. The larger sponsoring companies even had "chill" rooms complete with sofas, bars and ambient music. Perhaps my reserved nature stopped me partaking in this at 10am! Several auditoriums were running concurrently and the organisers had obviously taken the time to ensure that items of great interest did not clash.

The drinks reception on the first night was an excellent opportunity to meet the companies in a more relaxed way and, with local Maas dark beer on tap, the evening ended in a resounding blur. In a sensible (and ecologically friendly) move all posters were displayed electronically in the centre of the venue. Perhaps this is something we ought to consider in the UK for future meetings? Surprisingly for a hernia convention there seemed to be a great emphasis on new and developing technologies and, nowhere was this more



evident than in the QUO VADIS NOTES vs. single incision debates that seemed to have polarised surgical opinion throughout our fraternity.

The organisers had "best of" session which is summarised below. One of the more useful lectures to me was the role of TEP in sportsman's "hernia" in which a Finnish RCT (see abstract section) reported very positive outcomes in the surgical group with bone marrow oedema on MRI. Gilmore watch out! I had been invited to talk

about the use of absorbable meshes (Gore BioA) in hiatus hernia repair and was met with a very enthusiastic crowd with participants from as far afield as Melbourne and San Francisco. Despite the PowerPoint crashing and my video initially refusing to play, all went well and I received an overwhelmingly positive feedback. I even seemed to have invented a new technique!

The format of the first night's dinner was changed to a walking tour of the historic part of the town with each course in a different restaurant. This gave the participants an opportunity to soak up the atmosphere of this city whilst ensuring that each course was suitably digested before moving onto the next course. The old port (see picture) was our final destination and the presence of numerous surgeons was in stark contrast to the amassed teenagers with their guitars, funny tobacco and their European equivalent to strong cider.

I would strongly recommend all trainees to consider submitting an abstract to next year's meeting which is being combined with the American Hernia Symposium in New York. I would also like to express my thanks to W L Gore for their invite to talk at their satellite symposium.

Mr Paras Jethwa
Newsletter Editor



ASGBI, Bournemouth 2011

On behalf of Mantis Surgical it was a pleasure to exhibit our products at the ASGBI this year in the Bournemouth International Centre.

It seems more surgeons are attending speciality association meetings and fewer going to the general ASGBI meetings than in previous years, but the surgeons who did attend made a worthy effort of talking to the companies in the trade exhibition. The sticker collecting scheme attracted more medical students than consultants to the stands but I didn't get to hear which fortunates won the splendid prizes on offer for this effort.

I was able to hear Andrew Lansley's opening address which was well attended and prompted more questions than answers or time permitted. By his own admission, Mr. Lansley has much work to do in convincing all the stake holders of the merits of these reforms, not to mention the practicality of implementing the white paper.

Being available at the exhibition means I don't get to hear many sessions but I made the effort for the minimally invasive surgery short papers session on Thursday morning, a struggle for some following the ALS dinner on Wednesday night. This included a very positive, comparative paper for minimally invasive oesophagectomy from Southampton and some wonderful results of the first 100 single incision, laparoscopic colonic resections from Bristol amongst other well presented papers all extolling MIS.

The ALS symposium itself, "Who needs single port laparoscopic surgery?" was extremely well attended and included a comprehensive review of the lack of evidence available to justify SPLS so far by Professor Krukowski. The invited guests from Germany and specific videos made a positive case for the feasibility of SPLS; however the show of hands by the 200 plus audience indicated that SPLS is only being performed by a minority, with not many more planning to start soon. It seems more ink than blood is being spilled over this technique but a lack of data makes this conclusion pure conjecture!

The App for the conference proved a very useful tool, more user-friendly than carrying the paper programme around, one tap and you could add events to your i-phone calendar with an audible reminder, so no excuse for missing the ALS session!

Socially the meeting was successful as the opportunity to see friends and discuss pertinent issues of the day is a consistent attraction of these meetings. Bournemouth's weather was kind and publicans grateful as I'm sure will be true of Liverpool next year.

Mr Graham Kerr
Mantis Surgical



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Date	HERNIA REPAIR PROCEDURES	Hands-on/Observing	Venue
9 September 2011	Laparoscopic Inguinal (TEP)	Hands-on	Bournemouth
20 October 2011	Laparoscopic Inguinal (TEP)	Hands-on	Crewe
25 November 2011	Laparoscopic Inguinal (TEP)	Hands-on	Bournemouth
TBC	Laparoscopic Incisional/parastomal	Hands-on	Walsall
TBC	Laparoscopic Inguinal (TAPP)	Hands-on	Harlow

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4- 5 July 2011	Comprehensive Urological Laparoscopy	Berlin
6- 8 July 2011	Laparoscopic Training Course - Hernia Surgery	Berlin
21-23 November 2011	Advanced Laparoscopic Surgery	Berlin
14 November 2011	Hernia Masterclass - Laparoscopic Ventral Hernia Repair	Edinburgh

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Details of these course are available on our website or will be in due course.



Date	Courses	Venue
14-15 July 2011	11th International Laparo-Endoscopic Single-Site Surgery Wet Lab Workshop	Erasmus MC, Skills Lab - Rotterdam
20-21 July 2011	12th International Laparo-Endoscopic Single-Site Surgery Wet Lab Workshop	Erasmus MC, Skills Lab - Rotterdam
14-15 July 2011	13th International Laparo-Endoscopic Single-Site Surgery Wet Lab Workshop	Erasmus MC, Skills Lab - Rotterdam

Other Surgical Courses

For further information and application forms please email info@icenicentre.org or call 01245 686791

Courses are run several times a year for additional dates please visit our website <http://www.icenicentre.org>



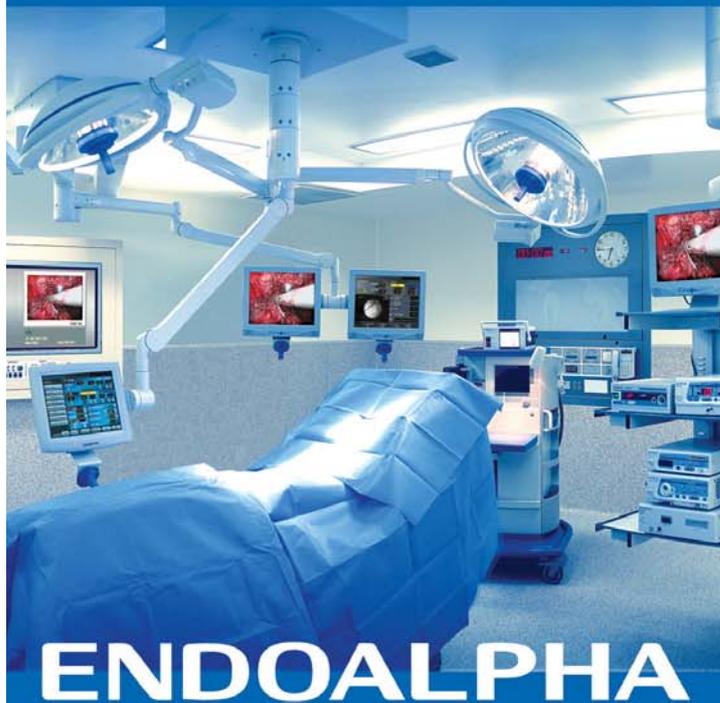
Date	Courses	
11th July 2011	Laparoscopic Colorectal Surgery - Introduction (1 day Course)	Right Hemicolectomy / Rectopexy / IBD and getting started...
7th September 2011	Laparoscopic Hernia Repair Course	The hernia collection: TAPP, TEPP and Incisional hernia repair...
14th September 2011	Laparoscopic Upper GI Surgery Course	Fundoplication / Splenectomy / Oesophago-gastric resections / Gastrojejunostomy etc...
26, 27 & 28 September 2011	Basic Surgical Skills Course	This 3-day course is designed to provide an introduction to safe surgical practice within a controlled workshop environment.
11 & 12 October &	Bile Duct and Advanced Laparoscopic Surgery Course	
6 & 7 December 2011	(2 day course) Bile duct exploration, laparoscopic suturing, simulators and more...	
7 November 2011	Enhanced Recovery Program Course	Methods of maximising post-operative recovery after open and laparoscopic procedures...
December 2011 - date to be confirmed	Laparoscopic Abdominal Aortic Surgical Course The two day course will include live Laparoscopic AAA surgery, didactic teaching on laparoscopic aneurysm repair and aorto-iliac occlusive disease bypass & practical 'Wet-Lab' simulator sessions	
February 2012 - Date TBC	Core Skills in Laparoscopic - Laparoscopic Surgery	Inc. 1 night accommodation
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Caption Competition

Entries have to be sent to Jenny Treglohan jtreglohan@asgbi.org.uk by 15 September 2011 and the winner will receive a bottle of champagne.



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Who should be doing laparoscopic cholecystectomy?



Laparoscopic cholecystectomy should be performed by surgeons trained in this procedure, who are deemed competent to perform it and who are prepared to continuously audit their outcomes. It can certainly also be argued that in addition to being able to perform a laparoscopic cholecystectomy surgeons should be able to perform intraoperative cholangiography, explore a common bile duct when necessary and suture laparoscopically. Surgeons who have serious or frequent complications following laparoscopic cholecystectomy need to question their practice but this pertains to all surgeons in all sub-specialities. This philosophy also pertains to every other surgical procedure that we perform and quality of surgical delivery is the only sensible parameter worthy of scrutiny. The position that laparoscopic cholecystectomy should only be undertaken by 'specialist' surgeons is fine but depends on what your definition of a specialist is and might include a surgeon such as the one that I have described who has neither upper GI surgery or Hepatobiliary surgery as a formalised sub-speciality label.

Cholecystectomy has always been a 'general' surgical procedure and remains a major component of waiting lists around the country. Over 70,000 cholecystectomies are performed in the UK each year and there is not the capacity in the UK for every cholecystectomy to be performed by accredited HPB surgeons and there is of course an underlying presumption that anyone carrying a particular label will always deliver the best outcome for any given procedure. 60% of surgery in the UK is undertaken in hospitals where no such specialised entity exists.

As in all spheres of surgery there are difficult and complicated cases but laparoscopic cholecystectomy is for the most part a simple laparoscopic procedure. Indeed it is the basic laparoscopic training operation. Having said that it can of course be done badly and the potential complications can be catastrophic. It is therefore understandable that if you work in a specialist or tertiary referral unit where you spend much of your time repairing the surgical disasters from elsewhere in the country that you should feel that bringing all these operations under the umbrella of a sanctioned biliary surgeon is the correct way forward. However such a policy on its own does not guarantee quality and the only way to ensure quality of surgical delivery is to train adequately, audit outcome and respond robustly to outcomes that fall below an expected standard.

In the end this distinction may come to nothing. As training becomes shorter and senior training more sub-specialised then trainees entering consultant posts who are neither upper GI or HPB but who are trained adequately in cholecystectomy will become fewer and fewer and as such fewer new appointments will be in a position to offer or are even want to offer this as part of their practice. But GI or general surgeons who can do this operation with good results provide a valuable service to their Trust and a good service to their patients and a General GI specialisation may yet become a real entity in the future.

In the end we are all 'specialists'. We are all surgeons who provide an array of operations and surgical care that is within the bounds of our knowledge, training and skill and the particular spectrum of activity will vary from surgeon to surgeon regardless of the speciality with which they have been labelled. Sub specialisation does not necessarily make you good at an operation and we all know that there are good and less good technical surgeons in all specialities and so the only thing that should matter to anyone is the quality of service provided. Anyone performing an anterior resection should know what his leak rate is and anyone performing a cholecystectomy should know what his conversion rate and bile duct injury rate is.

The way to improve quality is not to pontificate on which sub-specialists should be doing the operation but to confront those surgeons of all persuasions who fall below an acceptably good standard. The way to do this is rigorous audit and there is probably no procedure easier to audit than laparoscopic cholecystectomy because coding is usually correct and complications that result in prolonged hospital stay, readmission and re-intervention or transfer should be easy to identify. The vogue for self-reported databases however is inadequate for the purpose and direct rigorous external audit on a national scale is what will identify poor performers. Having said that there is probably just as much need for this in many other areas of surgery and there is probably no need to consider cholecystectomy a special case.

Professor Timothy Rockall
President Elect

Bill Cook, Medical Device Maker, Dies at 80



Bill Cook's first business venture — selling shot glasses— flopped. But that did not stop him from developing a company that has made thousands of medical devices, including coronary stents, urological equipment and biological grafts.

Along the way he amassed a \$3.1 billion fortune, making him the 101st richest American in 2011, and yet he lived a modest life. He and his wife, Gayle, continued to live in the three-bedroom home they bought in 1967, having moved there from a flat where they had used a spare bedroom to make their first catheters.

Mr Cook was not widely known outside Indiana, where he became a local philanthropist. But he built a 42-company empire with annual sales of \$1.7 billion that spanned four continents and employed 10,000 people.

He started work every day at 5 a.m. and, four years ago, finally built a garage. Until then he had been scraping the snow and ice off his windscreen himself. Though he was a billionaire, he had no driver.

He and his wife led in the restoration of many local Indiana buildings. He built a casino in the shape of a boat to comply with a law allowing only riverboat gambling. A moat encircles it.

His was certainly the only medical supply company ever to produce a Broadway show, "Blast!" in 2001, which enjoyed a stint at the Hammersmith Apollo and won Tony and Emmy awards.

In 1989, Mr Cook's wife was kidnapped while grocery shopping and held for a day. The kidnapper was captured while making ransom demands and served 12 years in prison.

William Alfred Cook was born on 27 January 1931, in Illinois. In 1957 he married Gayle Karch, who survives him, along with their son, Carl, and a granddaughter.

The next year, he started a company in Chicago, to make hypodermic needles. It became the third-largest needle maker in America. He moved to Bloomington, Indiana after being waylaid there in a blizzard.

In 1963, he and his wife started what became the Cook Group. They invested \$1,500 in a blowlamp, soldering iron and plastic tubing to make angiographic catheters in their flat. Their first sale: two catheters at \$7.50 each.

At the RSNA congress in 1964, Mr Cook was using a Bunsen burner to demonstrate making catheters from plastic tubing when a man asked if he could borrow the equipment, as the exhibition was closing for the day.

He was Dr Charles Dotter, who developed angioplasty. He returned the next morning with 15 exquisitely made catheters, and Mr Cook sold them for \$10 apiece. They went on to form a mutually beneficial association in many projects over the years.

In 1993, Mr Cook's company was the first in the United States to sell coronary stents. A more recent product line is Biodesign, a biologic graft used in the treatment of hernias and anal fistulas.

Not everything Mr Cook touched turned golden. In 1991, he bought the Manchester Giants basketball team for almost nothing. He was offered Manchester United football club as part of the deal, for a price under \$25 million, but he said no.

Mr Keith Rowland
Cook Medical

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References: 1. Data on file—ETHICON Reports. 2. ETHICON PHYSIOMESH™ Flexible Composite Mesh, Instructions for Use. March, 2010. 3. Cobb WS, Kercher KW, Heniford BT. The argument for lightweight polypropylene mesh in hernia repair. *Surg Innov.* 2005;12:63-69. 4. Welty G, Klinge U, Klosterhalfen B, et al. Functional impairment and complaints following incisional hernia repair with different polypropylene meshes. *Hernia.* 2001; 5:142-147. 5. Pascual G, Rodriguez M, Gomez-Gill V, et al. Early tissue incorporation and collagen deposition in lightweight polypropylene meshes: bioassay in an experimental model of ventral hernia. *Surgery.* 2008; 144:427-435. 6. diZerega, G. Peritoneal Surgery. 1st ed. New York: Springer Verlag; 1999:4-31. 7. Cobb WS, Burns JM, Kercher KW, et al. Normal intraabdominal pressure in healthy adults. *J Surg Res.* 2005;129:231-235.

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HERNIA SOLUTIONS

Time is money?



Why do surgeons seem to like their "flash" cars, well cut suits and expensive watches? The simple act of gazing around an ALS Council meeting reveals a wide variety of tastes which perhaps says more for the wearer's persona than he or she would normally volunteer!

In a time of budgetary cutbacks and tightening of belts it is perhaps surprising to discover that the luxury watch industry has not

only fought back but is charging ahead with watches regularly priced at over £10 000 (and often much more) with the Swiss industry generating more than 6 billion CHF per annum! I recently spoke with a source at Patek Philippe who told me that that company had their best year recently. Downturn – humbug. But why do these small items carry with them so much kudos and prestige?

To appreciate the present a brief history is helpful: the Swiss watch and clock industry appeared in Geneva in the middle of the 16th century. In 1541, reforms implemented by Jean Calvin, banning the wearing of jewels, forced the goldsmiths and other jewellers to turn into a new, independent craft – that of watchmaking. By the end of the century, Genevan watches were already reputable for their high quality, and watchmakers created in 1601 the Watchmakers' Guild of Geneva, the first to be established anywhere. Mass production started in the 20th century with the end of WW1 corresponding to the introduction of the wristwatch, with the traditional round face shape being only generally adopted in the 1960's. In the 70's and 80's the conservative watch industry was slow and resistant to newer technology (including quartz timing) and with the introduction of cheap, imported, reliable digital watches (together with the economic downturn of this time) this Swiss monopoly was nearly destroyed.

60% of the workforce was laid off and the number of companies fell by two thirds to 600. By 1983 the crisis had reached a critical point and a consortium formed to save the industry. The answer was Swatch! These were simple (less than 51 parts) & production was automated. In less than two years 2.5 million watches were sold and the industry saved. The Swatch group currently owns many companies including Tissot, Longines, Breguet, Rado, Glashutte and Omega. I bet James Bond didn't know that when he flashed his Omega Speedmaster to Vesper!



But why and how is it possible that a mechanical watch cost more than my car and, in some cases a house? The answer lies within the mechanisms needed to construct that timepiece and, the features above and beyond the simple display of hours, minutes and seconds. These extra feature are known as "complications" and the more complications in a watch, the more difficult it is to design, create, assemble, and repair. A typical date-display chronograph may have up to 250 parts, while a particularly complex watch may have a thousand or more parts. Watches with several complications are referred to as "grandes complications". Initially ultra-complicated watches appeared due to watchmakers' ambitious attempts to unite a great number of functions in a case of a single timepiece. The mechanical clocks with a wide range of functions, including astronomical indications, suggested ideas to the developers of the first pocket watches. As a result, as early as in the 16th century, the horology world witnessed the appearance of numerous complicated, and even ultra-complicated, watches. These ultra-complicated watches are produced in strictly limited numbers, with some built as unique instruments. Some watchmaking companies known for making ultra-complicated watches include Patek Philippe, Breguet, and Vacheron Constantin.

According to watch manufacturer Patek Philippe, the three most complicated watches in the world are all pocket watches made by that company. The Patek Philippe Calibre 89 has 33 complications, using a total of 1728 parts. It was released in 1989 (taking 4 years to develop) to commemorate the 150th anniversary of the company.

The Calibre 89. Created in 1989 has been declared by Patek Philippe as "the most complicated watch in the world", it weighs 1.1 kg, exhibits 24 hands and has 1,728 components in total, including a thermometer and a star chart. Made from 18 carat (75%) gold, it has an estimated value of \$6 million, and took 5 years of research and development, and 4 years to manufacture. Four watches were made; one in white gold, one in yellow gold, one in rose gold and one in platinum.



The complications include the date of Easter, sidereal time, and a 2800-star celestial chart. The current estimated value is snip at over \$6 million.

The Super-Complication built for the banker Henry Graves, Jr. in 1933 has 24 complications. The watch was reportedly the culmination of a watch arms race between Graves and James Ward Packard (American car manufacturer). The Super-Complication took three years to design and five to build, and sports a chart of the nighttime sky at Graves' home in New York. This was the world's most expensive watch when it was auctioned off for USD \$11-million in 1999, it now ranks second.



The Greubel-Forsej Quadruple-Tourbillon. Can a watch get any more advanced?

Complications are not limited to pocket watches as we found during our trip to Marcus in Bond Street. Whilst there I tried on an unusual watch, the Greubel-Forsej quadruple tourbillon. Nice, but not quite my cup of tea – especially when I found out it cost 530K! I gently gave it back but was hugely impressed with the finish, quality and ingenuity. I then started to breath again! I wonder if I have could have made it out of the door before the ex-special forces security guard pinned me down!

Are watches a good investment – yes and no! Choose carefully and you can do very well indeed. A return of several hundred

percent at auction is not uncommon. Watches produced in smaller quantities (Patek Philippe for example) command the highest prices at auction. Whilst a Panerai, Rolex or Omega are excellent watches they are more mass produced by comparison to some other brands and thus will hold its value as opposed to being an asset. A watch will however provide a tax free investment and with the right research you could be sitting very pretty. Look for limited editions, visit websites and auctions before you commit. Nonetheless, my submariner is certified to 4000ft underwater – handy for rescuing a downed submarine. I can feel my ears popping already.

Is it ever worth buying a replica? Simply put – you get what you pay for. There are times when you operate that an instrument sits correctly in your hand, feels well balanced and works just right. In that way a cheap replica will be acceptable (whilst it still works) and may be tempting but, the durability and longevity will never be a match for the real thing. It is very likely to become a dust-covered paperweight!

Definitions:

Escapement: This is the device which converts continuous rotational motion into an oscillating or back and forth motion. It is the source of the "ticking" sound produced by watches and clocks. A lever escapement is most commonly a used in the modern wristwatch but other escapements are also produced including: deadbeat (pendulum clocks), gravity (Trinity College Clock) & Co-axial This is the key invention that made all mechanical watches possible.

Tourbillon: One of the most famous and expensive movements currently made. Developed around 1795 by the French – Swiss watchmaker Abraham-Louis Breguet a tourbillon counters the effects of gravity by mounting the escapement and balance wheel in a rotating cage, ostensibly in order to negate the effect of gravity when the timepiece (and thus the escapement) is rotated. Originally an attempt to improve accuracy, tourbillons are still included in some expensive modern watches as a novelty and demonstration of watchmaking virtuosity.

Co-axial: Invented by the English watchmaker George Daniels CBE (honoured in 2010) this escapement is considered to be one of the most significant horological advancements since the invention of the lever escapement. This escapement functions with virtually no lubrication thereby eliminating one of the shortcomings of the traditional lever escapement. This was taken up by the notoriously conservative Swiss watch industry and in 1999 Omega SA. When it first came to the market as the Caliber 2500, it had an oscillation rate of 28,800 bph.

I am indebted to Marcus of Bond Street for their help in preparing this article.

By Anon



The inner mechanism of the Jaeger Le Coultre Reverso Gyrotourbillon. Only \$350 000...



SIGH strengthens links with Minimal Access Surgery by becoming a Silver Partner to the ALS.

We are delighted to confirm our greater involvement with the Laparoscopic Surgical Community by increasing our commitment to the Association of Laparoscopic Surgeons and the satellite group of ALTS, The Association of Laparoscopic Theatre Staff.

SIGH will be attending and exhibiting at this year's ALS Conference in Cardiff as a Silver partner and featuring the well known marque of MICROFRANCE.

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techniques that help improve patients' lives. Acquired by Medtronic in 1999, all MicroFrance surgical instruments are still designed and manufactured in St. Aubin, France.

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B. Braun Medical Ltd values innovation with NHS partners



Sheffield-based B. Braun Medical Ltd is a member of the B. Braun Group, one of the world's leading healthcare companies. With a focus on innovation in practice and products the company is delivering real results for the NHS.

There is no doubt that the economic climate continues to present some highly challenging market conditions in the healthcare sector. There are considerable pressures on costs, and increasing competition.

The Department of Health has to find £20 billion of cost savings between now and 2014. The drive to reduce costs within the NHS has created, and will continue to create, a very tough environment.

There is a danger that the drive to reduce costs within the NHS will stifle innovation in care, which benefits patients and delivers real value for money.

But it is important that leading healthcare companies continue to invest in research and development, and to work in partnership with the academic and NHS communities to bring new products and services to the market.

B. Braun Medical Ltd Aesculap Endosurgery has a longstanding commitment to bring new products and services to the UK market, often

working in partnership with NHS trusts and other providers.

Major policy shifts being introduced over the next couple of years will include the devolution of money and power to GP Commissioning Groups who will be charged with sourcing value-for-money products and services which will change the way we do business with the NHS.

Health-care companies need to be ready to adapt to a very different market landscape, working closely with hospitals and general practice to look at new and exciting ways of delivering health care.

Aesculap Endosurgery B. Braun Medical Ltd is committed to innovation and partnership, closely linked to the NHS Innovations agenda of transforming healthcare for patients by developing and spreading new work practices, technology and improved leadership.

There is no doubt that financial constraints and an unprecedented programme of NHS reforms over the

next two years will present a challenging market for health care companies in the UK.

But Aesculap Endosurgery B. Braun believes that a continued emphasis on innovation and true partnership can and will deliver value for money products and services for patients.

Encouraging staff to innovate and anticipate future requirements is recognised as a key element in B. Braun's future strategy. To this end the company has set up its own Business School which has extended the scope of its training for staff at all levels, in recognition that having the right skills is the key to success in a highly competitive health market.

Healthcare innovation is at the heart of what B. Braun does, and we are constantly trying to increase the effectiveness of our products and services.

Improving the level of care available to patients is a paramount part of our development process, and in the current climate is more important than ever.

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