

## AKL1-1

### Evolution of Herniology

Pradeep Chowbey

*Institute of Minimal Access, Metabolic & Bariatric Surgery, Max Super Speciality Hospital, India*

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Hernia repair today has a vast number of surgical options. In addition to the choice of approach (open vs laparoscopic, anterior vs preperitoneal), the plane where placing the mesh (in front of the transversalis fascia vs preperitoneal space), and the fixation device (tacks vs staples vs sutures vs glue vs sutureless), surgeons can select among a wide range of prosthesis.

Laparoscopic repair can be performed for most hernias today and easily qualifies itself as a safe, feasible, patient friendly and cost effective technique. It is well accepted today that inguinal hernia is a local manifestation of a generalized disorder of collagen synthesis which has led to a number of centers including ours to perform a simultaneous bilateral inguinal exploration and mesh placement. Choosing the proper biomaterial can determine the success of an operation and prevent biomaterial-related complications. Modern advances in hernia repair are credited with reduced recurrence rate, so surgeons' attention is shifted from preventing recurrence to the new topic of chronic pain after surgery.

The laparoscopic repair of ventral / incisional hernias offers all the advantages of a minimally invasive procedure to patients as it saves them the insult of large incisions and the associated wound related complications. The technique of laparoscopic repair involves intraperitoneal onlay mesh placement and in selected cases, partial or total extraperitoneal mesh placement. The laparoscopic approach affords the surgeon the ability to clearly define the margins of the hernia defect and to identify additional defects that may not have been clinically apparent preoperatively.

## AKL1-2

### Hernia: A Metabolic Disease?

Davide Lomanto

*Khoo Tech Puat Advanced Surgery Training Centre, Yll Som National University, Singapore*

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Hernia occurs as a result of a mechanical disparity between the intra-abdominal pressure and the resistance of the abdominal musculature. Various biological mechanisms leading changes in fascial pathology or failure of the surgical wound are involved.

Literature review shows that certain genetic or systemic disorders involving extracellular matrix and connective tissue abnormalities may predispose patients to develop a hernia. It is known that an acute laparotomy wound failure invariably leads to incisional hernia formation. It may not be wrong to assume that while primary hernia may occur due to congenital defects in extracellular matrix in certain patients, those with failed laparotomy and hernia repairs who develop incisional hernia may have an acquired defect in extracellular matrix. These acquired defects can lead to secondary fascial pathology like wound healing failure, abnormal fibroblast production, errors in wound remodelling and wound ischaemia. Acquired collagen defects are also known to occur in nutritional deficiencies, smoking, etc.

Understanding of this complex mechanism is paramount and will probably be the most important key to solve the problem of recurrence and provide a better repair in patient with abdominal wall hernia. It is with this aim that we need to invest more in the understanding of tissue matrix biology which may help us to improve results after hernia repair surgery. Future research in hernia should focus on modifying these factors.

## AKL1-3

### Basic anatomy of the fascial arrangement in the inguinal region

Tatsuo Sato

*Tokyo Ariake University of Medical and Health Sciences, Japan*

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For surgical procedures precise knowledge of anatomy is important, and in hernia surgery in particular, understanding of the minute anatomy of the inguinal region is critical. In recent years in Japan, in addition to knowledge of the muscular and ligamentous construction of the inguinal region, the fascial arrangement has been regarded as critical for hernia surgery. Fortunately we have gained increased knowledge of fascial stratification, however, this region still holds many controversial concepts. Thus, we must return to the basic structural arrangement in order to establish ultimate quality surgical procedures. The basic approaches to integrate a comprehensive understanding of the inguinal fascial arrangement will be presented. For example, in the "onion theory", taking a horizontal section of the abdominal region, the circular layers are divided into two groups by the abdominal muscular mass; each group is then subdivided into three structurally unique layers [inner (1-3), outer (1'-3')]. The 1 and 1' layers are the dense membranes, 2 and 2' are soft layers containing organs, vessels and nerves, 3 and 3' are the fascial layers which directly sandwich the muscle mass. In particular, it is 2 & 2' the external soft layers (between the skin and innominate fascia) and internal soft layer (between the peritoneum and transversalis fascia) which are important as they serve as neurovascular passageways. These two layers are each divided into superficial and deep sub-layers according to the vascular passage. Here, to enlighten the understanding of this stratification, cadaveric dissection in the inguinal region is shown.

AKL1-4

## **Herniasurge World Guidelines for inguinal hernia repair**

Marc Miserez

*University Hospitals of the Katholieke Universiteit Leuven, Belgium*

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AKL1-5

## **UPDATE ON WORLD HERNIA GUIDELINES: HOW DOES IT APPLY TO APHS SURGEONS?**

Sathien Tumtavitikul

*Department of Surgery, Vichaiyut Hospital, Bangkok, Thailand*

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The World Guidelines for Management of Groin Hernia was formulated by international expert group of surgeons (Herniasurge Group) with representations from EHS, AHS, APHS, Australasian, AMEHS, EAES, IEHS and Editor Hernia as steering Committee. The guidelines are the result of extensive research of level 1 published literature, using Evidence Medicine rules. Final consensus was sought on all statements and recommendations by the Herniasurge members.

This world guidelines will be an excellent reference of good clinical practice for APHS surgeons in management of groin hernias. The guidelines will encourage the APHS surgeons to strive for the improvement of own outcomes, data gathering as well as stimulating scientific research and publication in this field. The guidelines can also be a reference for implementing national health policies on hernia management of APHS member countries.

AKL1-6

## **EBM and Hernia Registry**

Ferdinand Köckerling

*Vivantes Clinical Center Spandau, Germany*

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In the past the majority of surgical innovations were accepted on the basis of non-randomized trials. Sir Alfred Cushieri has spoken about the introduction of laparoscopic cholecystectomy as the "greatest unaudited procedure in the history of surgery". Specifically hernia surgery has experienced rapid progress in recent years. By virtue of the ever-expanding number of medical devices used in hernia surgery, the surgical techniques are of such a broad variety that they can scarcely be evaluated in a randomized controlled trial. But by consistently recording details of the different surgical techniques in a prospective registry, any problems or complications related to particular variants of the technique can be identified at an early stage. Additionally, more than 100 different surgical techniques have been described for the treatment of inguinal hernias. The ultimate aim of a hernia registry is to improve quality across the entire spectrum of hernia surgery. It has been revealed that in Denmark, there was a significant reduction in recurrence rate after the introduction of a hernia registry. A surgeon can only become better, if he knows his own results. A further aim for hernia registries is outcome research, monitoring and evaluating how the knowledge gleaned from evidence-based science is implemented in the everyday clinical setting and, ultimately, investigate its effectiveness. In summary, there are many reasons, why quality control in hernia surgery is essential. Data entry needs the precise documentation of all patient-related risk factors and local disease findings.