

VENTRAL & INCISIONAL HERNIAS

AND

REDO, COMPLICATED, & FAILED HERNIA REPAIRS

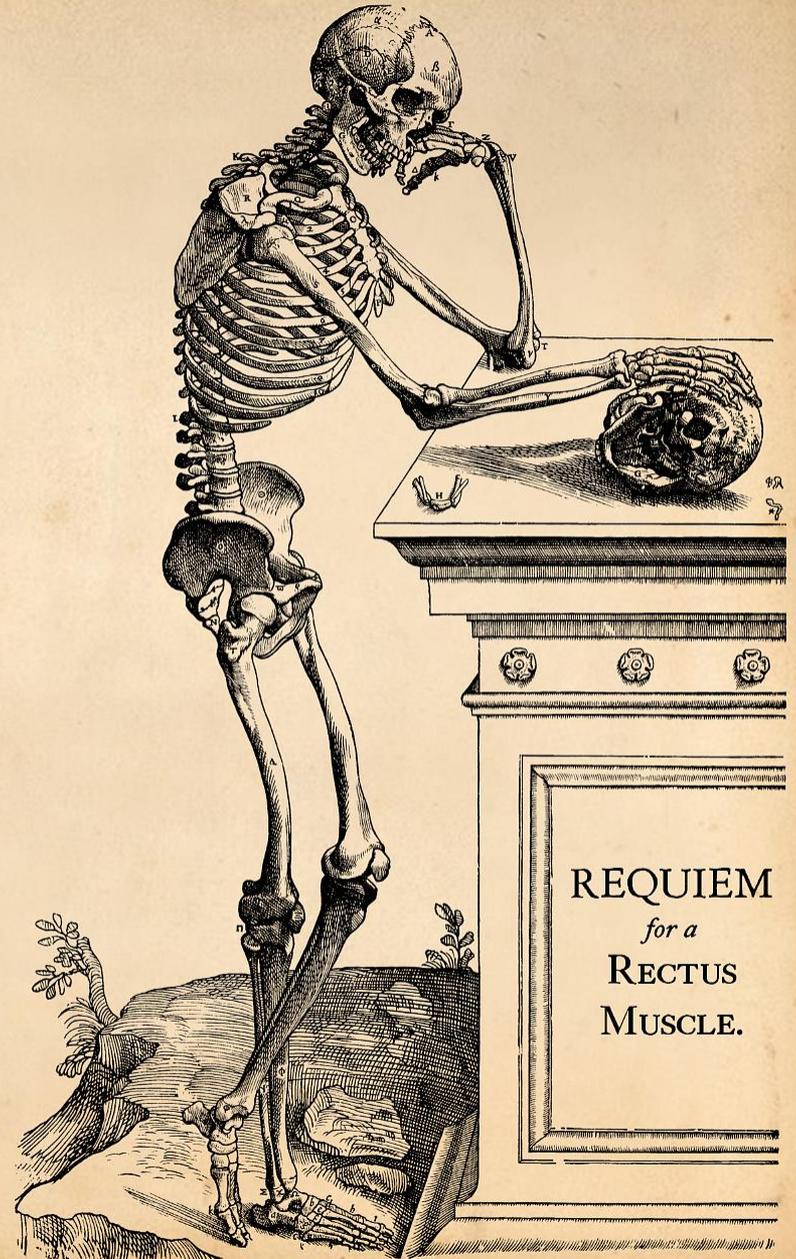
HOW DID WE GET INTO SUCH A MESS?

KEY IDEAS IN SURGICAL THEORY & TECHNIQUE

Marc E. Gottlieb, MD, FACS
Phoenix, Arizona

arimedica.com

2017



REQUIEM
for a
RECTUS
MUSCLE.



HERNIAS & COMPLICATIONS

THE NATURAL DISEASE
VERSUS
THE UNNATURAL DISEASE

Nature of the Problem

Biology of hernia
Surgical education
Inadequate technique
Companies and products

*Confusion of hernia as acute bowel complications,
versus hernia as abdominal wall reconstruction.*

*Failure to repair abdominal wall and
thereby prevent hernias.*

Inadequate and incomplete repairs.

Morbid complications of products.

Incidence of failures and redo surgery.

arimedica.com

2017

HERNIAS & SURGERY

HISTORICAL PERSPECTIVES

How surgeons have perceived hernias,
in the modern surgical era.

*Hernias have always been part of
the surgical arts, sciences, and curriculum.*

*They have garnered attention more for their acute
complications than as a problem to be fixed.*

*Hernia fixes have variably been perceived as
difficult and prone to recurrence.*

*Until the latter 20th century,
Inguinal hernias always received the most attention,
followed by other natural developmental hernias,
followed least by ventral and incisional hernias.
That balance has changed over past 30 years.*

CHAPTER V.

Treatment of Irreducible Hernie.

Irreducible hernie must in great measure be left to themselves. The inconveniences arising from the bulk are considerable, and there is constant danger of strangulation. This risk is diminished in many cases by the great dilatation of the ring, but it nevertheless exists, and should render the patient extremely cautious of all violent exertions, and he should especially guard against costiveness.

Cases considered as irreducible hernia have in some instances been gradually returned into the abdomen in consequence of long confinement to bed, and frequent purges, together with an adherence to an abstemious diet.

Elements of Surgery: For the Use of Students

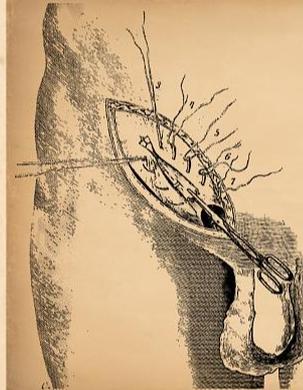
John Syng Dorsey, M.D. (1783-1818)

Professor of Surgery, University of Pennsylvania

America's first textbook of surgery.

1813

Book has 100 pages on comprehensive hernia management, including surgery. However, surgery was for select conditions, usually urgent, focus on hernia reduction and sac ligation, not at all on abdominal wall repair.



83. The Radical Operation for Umbilical Hernia. This operation, and that for strangulated umbilical hernia, are performed by making a transverse incision through the skin and subcutaneous tissue, cut away the thickened neck of the sac and to introduce deep sutures simultaneously through the aponeurosis (linea alba) and peritoneum (neck of the sac). It is best to use interrupted sutures at intervals of not more than 1 cm, and to apply them in such a way that the umbilical opening is firmly closed in a transverse direction.

Text-Book of Operative Surgery

Dr. Theodor Kocher, M.D. (1841-1917) Professor of Surgery, University of Bern
Epitome of first generation surgery after advent of anesthesia & asepsis.

1895

Limited hernia text, groin & umbilical, nothing on incisional hernia. Technical discussions about reducing and managing sac. Marginal text on repairing fascias or abdominal wall.

Treatment.—In certain cases considerable relief may be obtained by a properly fitted abdominal support. Curative treatment is by operation if the general condition of the patient permits. The operative procedure follows that described for umbilical hernia. The old scar is excised, the contents of the sac are reduced, and the repair of the defect is carried out by overlapping the edges. When this is not feasible, some form of patch to fill in the defect may be used. Skin, fascia, tantalum, and stainless steel mesh have been recommended.

Textbook of Surgery:

H. F. Moseley, D.M., M.Ch.

Professor of Surgery, McGill University

Era of mature abdominal surgery before laparoscopy.

1952

Thorough hernia chapter, mostly inguinal and femoral, then others. Ventral hernia all forms get 2 full pages (sm.4to, 7"x10"), of which ¼ (1 column) is "Incisional or Postoperative Hernia" (shown). "Overlap" is a virtue often ignored now. By then, incisional hernias were common enough to provoke ideas about irreducible defects.

Incidence, Ventral and Incisional Hernias

(ESTIMATES FROM MULTIPLE SOURCES)

Laparotomies / year, USA	2,000,000 – 3,000,000 – 4,000,000
Ventral hernia operations / year, USA	150,000 – 300,000 – 500,000 <i>Includes natural & incisional hernias.</i>
Hernia incidence % of laparotomies, 1°	5 % – 10-20 % – 35 % <i>Estimates have increased with time.</i>
Recurrence % after primary repair, 2°	5 % – 10-20 % – 35 % <i>Variable, depending on technique.</i>
Recurrence % after secondary repair, 3°	20 % – 35 % – 65 %

Hernia incidence rates reported from other countries are generally comparable.

Progressive Poor Results for Incisional Hernias

📅 2011: “794 patients: 61% primary VHR, 26% IHR-1 [1st incisional hernia repair], 9% IHR-2, 4% IHR-3. Patients with multiple repairs were more likely to undergo reoperation, have longer operative duration, develop infection, and recur. At 140 months, 37% of primary ventral hernias and 64% of incisional hernias have recurred. Highest recurrence rates 73% are in IHR3. **Previous VHR creates a vicious cycle of repair, complications, reoperation, re-repair.**”

📅 2015: “250,000 ventral hernia repairs each year in the U.S., recurrence rates high: 54% after primary repair, 25% after synthetic mesh repair, and 22% after components separation.”

📅 2000-2011: “Recurrent hernia following incisional hernia ranges from 18 to 50 percent.”

Various studies estimate, and decry, economic and social impact.

The problem is confused and compounded by inconsistent techniques, and variety of manufactured “meshes” and other products, many of questionable nature.

Alloplastic meshes can provide structural stability, but many reports document increased complications rates that offset any anatomical gains.

Changing Incidence & Mix of Hernia Types

(ESTIMATES FROM MULTIPLE SOURCES)

📅 2011 (USA)

“RESULTS: The number of inpatient VHRs [ventral hernia repairs] increased from 126,548 in 2001 to 154,278 in 2006. Including 193,543 outpatient operations, an estimated 348,000 VHRs were performed for 2006. Inpatient costs consistently rose.

“CONCLUSIONS: VHRs continue to rise in incidence and cost. By reducing recurrence rate alone, a cost saving of US \$32 million dollars for each 1% reduction in operations would result.”

📅 2011 (England)

“2389 patients, 2510 hernia repairs during three periods: 1985–1988; 1995–1998; 2005–2008. Inguinal hernia repair was universally commonest. Femoral hernia repair was second commonest in the 1980s, the fifth most common by 2005–2008. Proportion of groin hernia repairs has decreased over time; proportion of midline abdominal wall hernias has increased. ... The relative frequency of groin hernia repair has decreased over time, frequency of midline abdominal wall hernia repair has increased. Relative frequency is: inguinal, midline, femoral. This contrasts with figures quoted in common reference books over the last 30 years.”

📅 2013 (India)

“Inguinal hernias, 77.81% of cases. Ventral hernias were 18% of cases. Femoral hernias were rare ... which obviously differs from literature mentioning frequency as: inguinal, femoral, umbilical and others. Incidence of femoral hernia is very low as compared to literature where it comes as third commonest type of hernia. Incisional hernia was approximately 3% which is significantly lower than USA and UK where it is 6% - 10%, but in accordance with African literature (underreporting as our population is less disease conscious?).”

Analysis & Summary

Hernia incidence and mix is traditional surgical knowledge

found in surgical journals, textbooks, and curricula of the 20th century.

Historically, most hernias are natural, inguinal hernias about 75%,

femoral hernias the traditional second.

Experienced surgeons perceive, and recent papers confirm, beginning c 1990,

an increase in ventral hernias, mostly post-operative incisional hernias.

Modern hernia rates exceed historical controls by as much as 6-8 fold,

a morbid and expensive problem that rises to status of epidemic.

The zeal to address the problem may be making it worse,

many patients crippled by repetitive failed repairs and complications.

The zeal to fix the problem has resulted in products that make more trouble,

typically alloplastic materials made of non-biological materials.



1990 - The turning point - Laparoscopy

The public health epidemic of increasing morbidity, expense, and failed results of hernia care and surgery has its origins in the advent of laparoscopy.

General implications of laparoscopy.

A proven innovation making intra-cavitary surgery safer and more effective for diverse problems.

Hernia related implications of laparoscopy.

The good: laparoscopy results exceed open repair for select problems.

The ugly: laparoscopy cannot effectively expose and fix certain problems.

The bad: "Use it or lose it", surgeons have forgotten how to REPAIR the abdomen.

*The corollary: Proprietary products to the rescue, rather than surgical education.
(Some products greatly enhance hernia repair, some make it criminally worse.)*



THE TRUE NATURE OF HERNIA

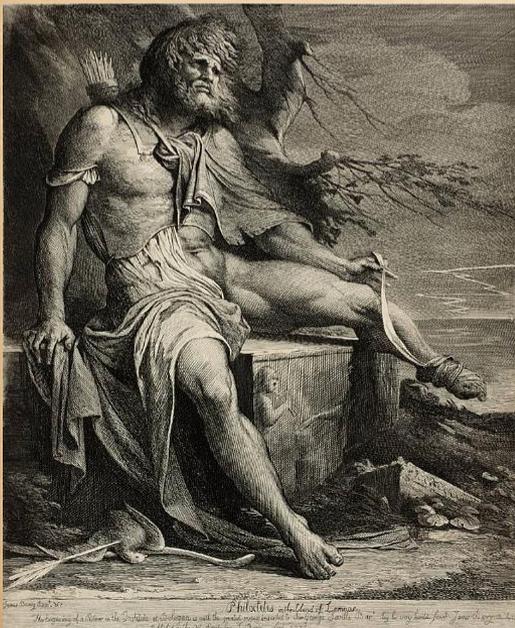
A DUALITY OF PERCEPTION

Effective hernia care depends on an appreciation of why surgery is being done under the specific circumstances.

Acute vs Chronic

Illness vs Reconstruction

General Surgery vs Plastic Surgery



1

General Surgery

Incarceration, Obstruction, Infarction, Peritonitis, Acute complications, Life and death, Critical illness, Expedient closure.

Plastic Surgery

Reconstruction, Wounds and defects, Anatomical restoration, Chronic and considered, Functional restoration, ADL's, Balance and strength.

2

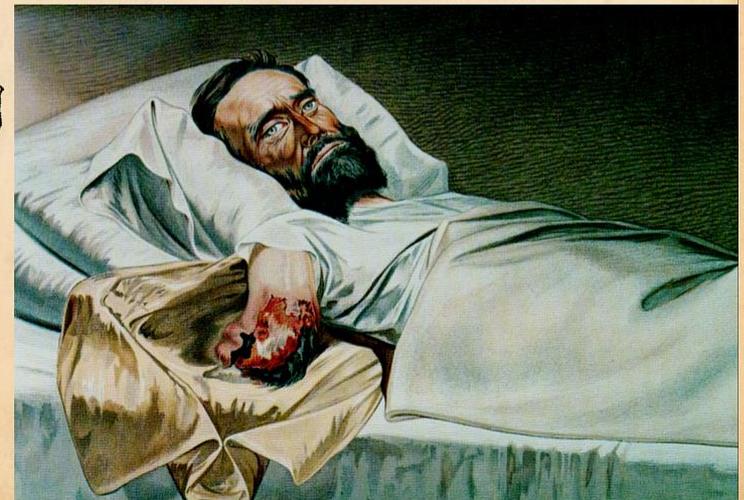
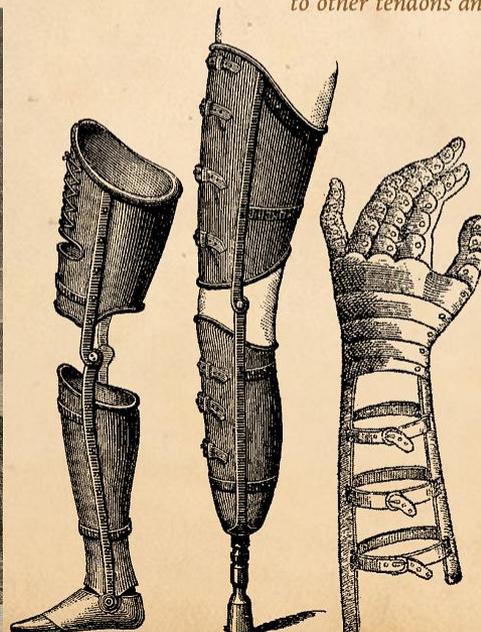
Analogy to amputations

Curative procedure to separate disease from patient, versus reconstructive procedure to hold a prosthesis.

3

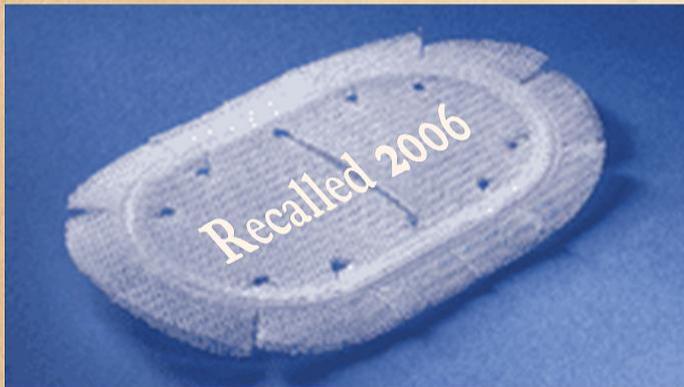
Musculoskeletal reconstruction

Hernia is not inherently "abdominal". It is a myofascial repair comparable to other tendons and ligaments.



Bad engineering

“Kugel Hernia Repair is gaining momentum around the world as the next step in hernia repair when comparing laparoscopic versus open procedures. The benefits to the patient, surgeon, and hospital make this procedure a winning combination.” **Bard Promotion**



Kugel Mesh Patch: 'A Terrible Ordeal'
 “In 2003, when Janine Ryan's (not her real name pending a lawsuit) mother, Sophia, had a Kugel Mesh hernia patch implanted, neither knew that there were any possible risks associated with the patch. But Sophia's patch broke, causing her to experience severe pain and other serious problems.” **Lawyer Site**

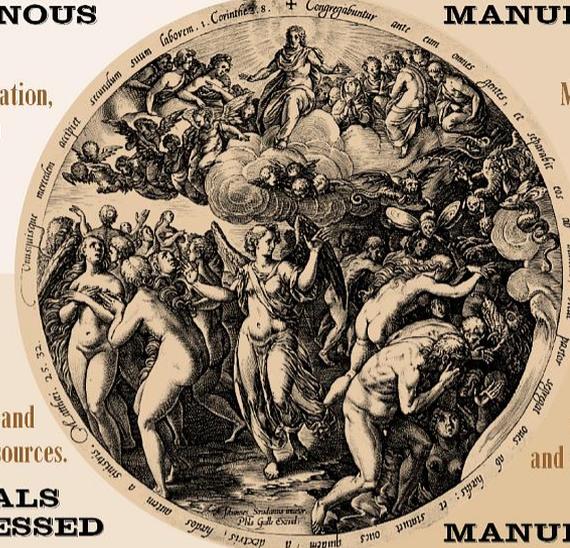
INDUSTRY & MANUFACTURED PRODUCTS IN SUPPORT OF HERNIA CARE & SURGERY

AUTOGENOUS REPAIR

Reduction, restoration, or reconstruction of the native anatomy.

Regenerative matrices made of cadaveric dermis and other biological sources.

MATERIALS REPROCESSED



MANUFACTURED DEVICES

Made with resorbable artificial, chemical non-biological materials.

Made with non-resorbable artificial, alloplastic and composite materials.

DEVICES MANUFACTURED

Parietex™ Composite Ventral Patch

Symbotex™ Composite Mesh
 For Ventral Hernia Repair

3DMax™ Mesh

COMPOSIX™ L/P Mesh

KUGEL™ Hernia Patch

PERFIX™ Plug

VENTRALEX™ ST Hernia Patch
 Featuring Septra™ Technology

C-QUR | MESH
 O3FA FILM COATED MESH

GORE
DUALMESH™
 BIOMATERIAL

PROCEED™ **PVPM 2 Pieces**
VENTRAL PATCH 6.4 cm x 6.4 cm (2.5 in x 2.5 in)

ETHICON
PHYSIOMESH™

PROLENE* Mesh
 Polypropylene
 Nonabsorbable Synthetic Surgical Mesh

Complicated devices I have removed:

COMPOSIX	BARD
C-QUR	ATRIUM
GORETEX	GORE
KUGEL	BARD
PROCEED	ETHICON
SYMBOTEX	MEDTRONIC
OTHERS UNKNOWN	

Products withdrawn, recalled, or in class action and extensive personal injury litigation:

PARIETEX	COVIDIEN
C-QUR	ATRIUM
PHYSIOMESH	ETHICON
PROCEED	ETHICON
PROLENE HS	ETHICON
KUGEL	BARD
3DMAX	BARD
PERFIX	BARD
VENTRALEX	BARD

INTEGRATING NEW PRODUCTS AND TECHNOLOGIES INTO PRACTICE

Medical arts and sciences evolve, and all practitioners will, in the course of their careers, be expected to understand the advances that support better care of the patient — new medical knowledge and concepts, but also new products and their usage.



WRITING HOME ON AN ADJUSTABLE TABLE.

*"Hospital Life in New York",
Harper's Monthly v57, July 1878*

Concerning Hernia Products

Proper techniques of autogenous repair are essential.

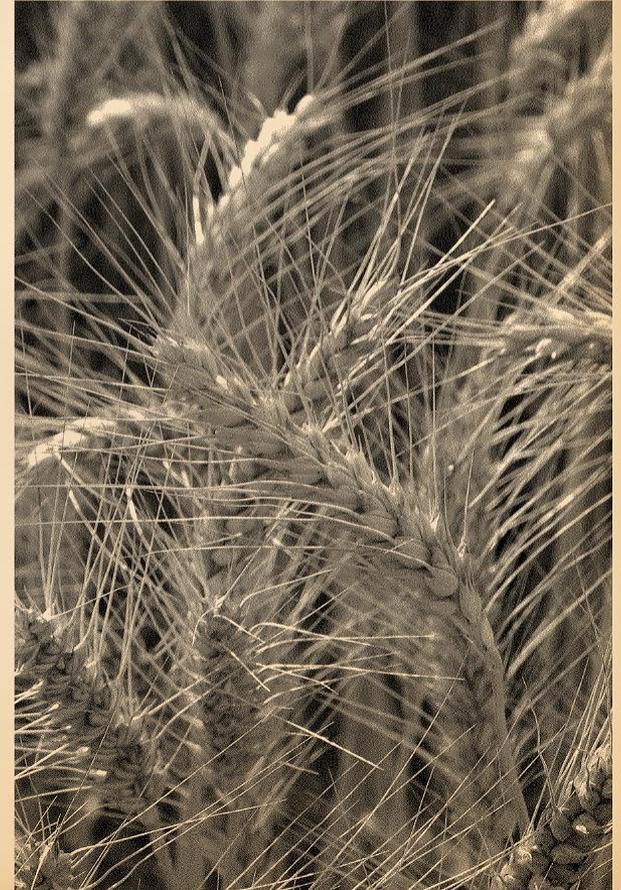
Manufactured products to augment or reinforce autogenous repair are essential in select (many) cases.

Mounting evidence confirms the value of proper hernia products.

Biomatrices are not subject to the same problems and complications as alloplastic artificial materials.

There is both wheat and chaff among endless new products. Despite nominal engineering standards and government oversight, some products will give your patients the tummy ache from hell. Others will be genuinely nutritious tasty grains that will fundamentally change methods and results. Practitioners must discriminate between them.

INTEGRATING NEW PRODUCTS AND TECHNOLOGIES INTO PRACTICE



HERNIA & THE MODERN SURGEON

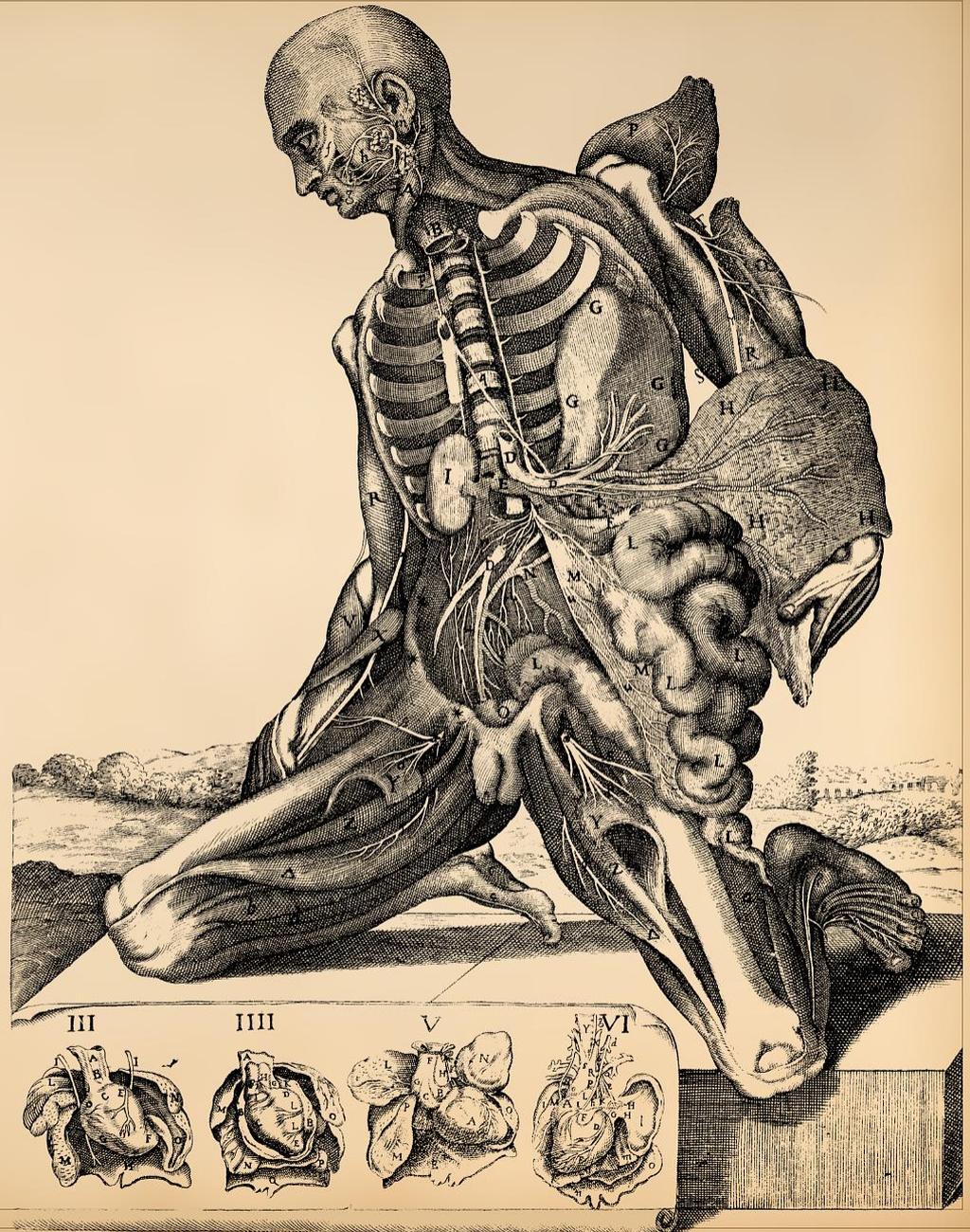
VENTRAL AND INCISIONAL HERNIAS,
including the perverse subtype of the iatrogenic
multiply recurrent hernia, and those complicated
by morbid, disabling, & lethal complications,
complicated yet more by poor products,
have reached epidemic proportions
during the past **25** years.

Hernia Repair & Reconstruction

done effectively and safely, must acknowledge
the nature of the problem as a musculoskeletal
procedure and apply relevant techniques.
This can, often must, include manufactured products,
but the choice of proper materials is essential
and is the responsibility of the surgeon.

The Pathway to Safe and Effective Repair

is revealed in the biology of hernia, and the
principles of classical hernia surgery, and the
newer principles of care, the good and the
bad, revealed over the past 25 years:
Proper handling of the native autogenous tissues,
the choice and use of reinforcing materials,
and the avoidance of non-biological
materials lead to proper results.





ARIMEDICA



www.arimedica.com



Marc E. Gottlieb, MD, FACS

Phoenix, AZ



