

# To Mess with Mesh?

An Update on Surgery for Pelvic Organ  
Prolapse

Carmel Ramage

Bradford Teaching Hospitals



- Discuss current surgery for prolapse
- Discuss new advances in surgery
- Discuss benefits and complications



# Definition

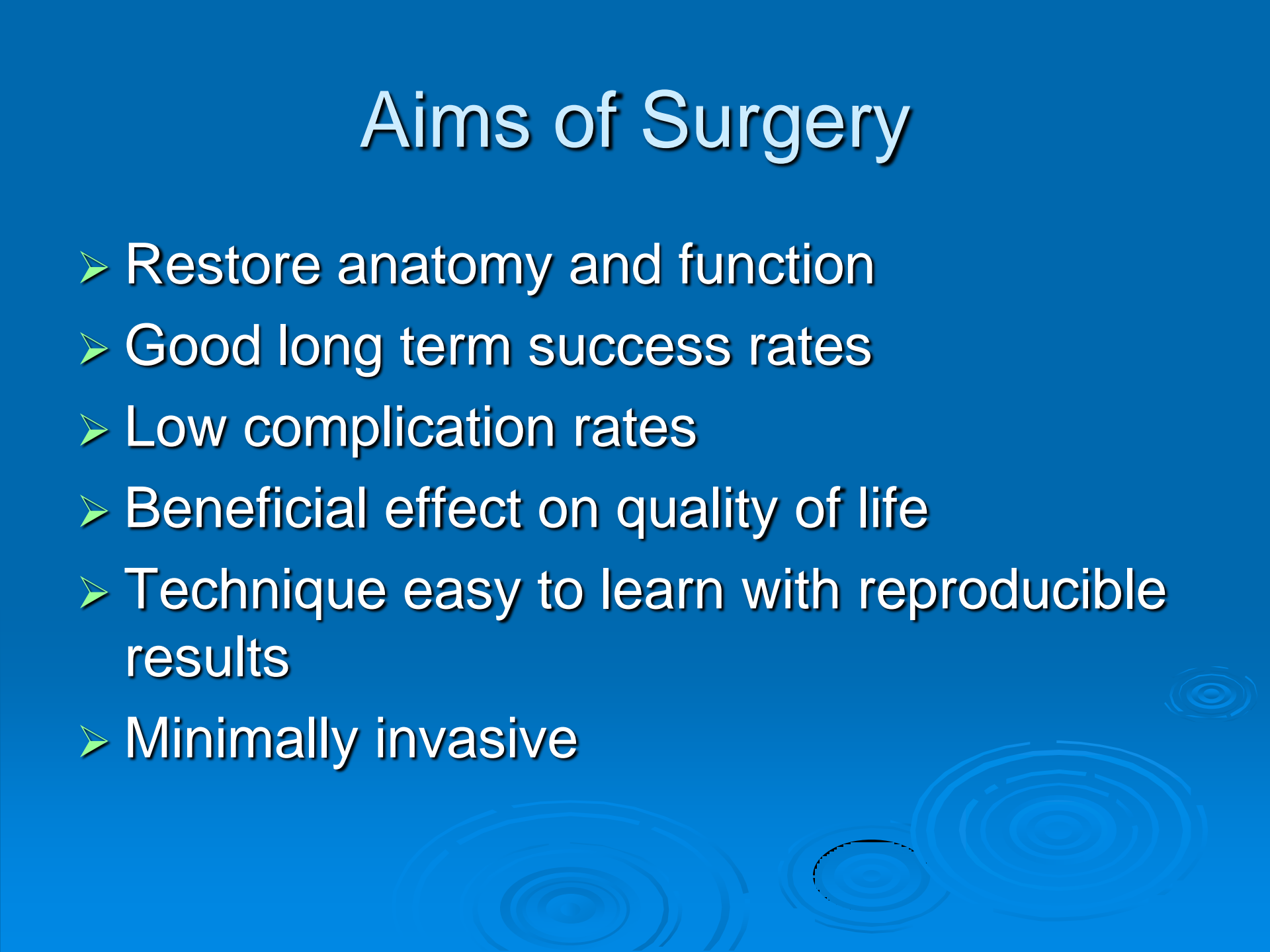
- Hernia of one or more pelvic organs (uterus, vaginal apex, bladder, rectum) associated vaginal segment



# Introduction

- Genital prolapse is common
  - Incidence: Up to 50% of parous women have some degree of pelvic organ prolapse (Samuelson 1999; Slieker 2004)
  - 11.1% lifetime risk of surgery for prolapse or incontinence (Olsen 1997)

# Aims of Surgery

- Restore anatomy and function
  - Good long term success rates
  - Low complication rates
  - Beneficial effect on quality of life
  - Technique easy to learn with reproducible results
  - Minimally invasive
- 

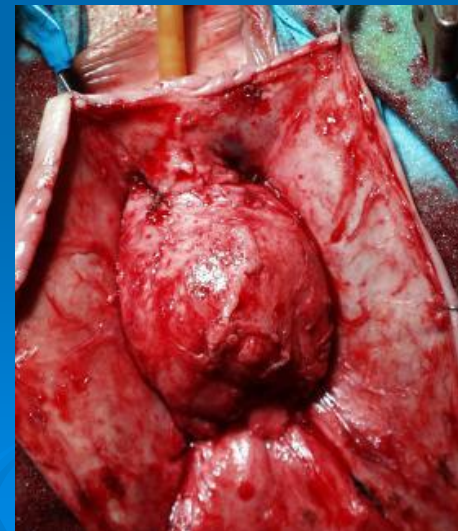
# Surgery

- Vaginal hysterectomy
- Anterior colporrhaphy
- Posterior colporrhaphy
  
- Sacrocolpopexy
- Sacrohysteropexy
- Sacro-spinous ligament fixation
- Mesh-augmented repair

- Current surgical procedures have high failure rate
  - 17.1 - 29.2% re-operation rate (Denman 2008; Olsen 1997)
- But what fails and why?

# Anterior Colporrhaphy

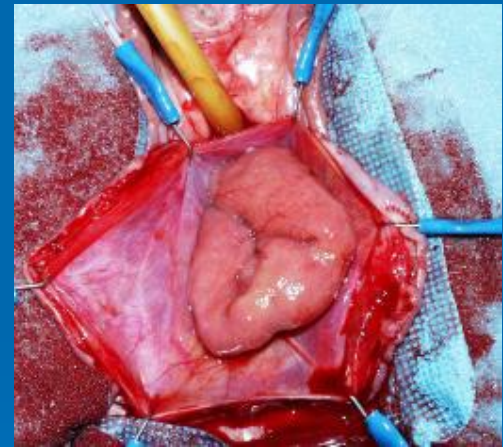
- First described by Kelly in 1913
- 30 - 43% objective recurrence (NICE 2008; Sand 2001)
- Re-operation rate 4 – 40% (Freeman 2010; Graves 1994)





# Posterior Colporrhaphy

- Objective recurrence  
20%



# Apical recurrence


## ➤ Recurrence

- 11.6% if hysterectomy done for prolapse
- 1.8% if hysterectomy for other indications

(Marchionni 1999)



# How to Improve Results of Surgery

- Site-specific repair
  - Experienced operator
  - Other operations
  - Graft
- 

# Site-specific repair

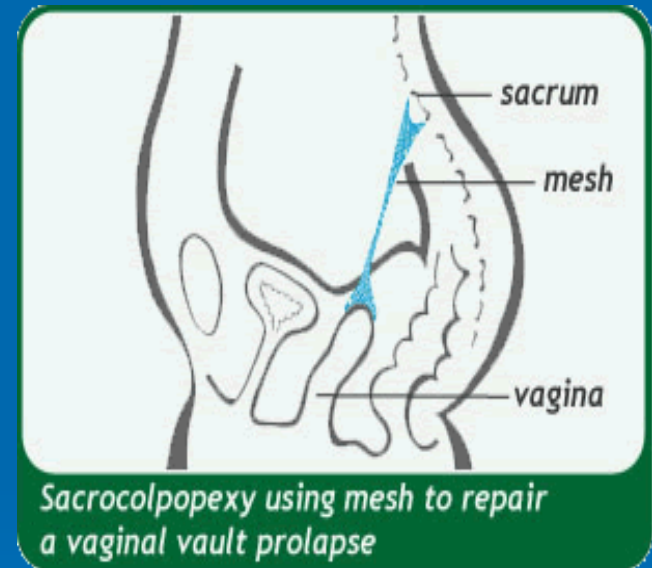
- Looking for and repairing defects in the fascial supports
- ‘Selective repair’ rather than ‘one size fits all’ approach
- Still debate about the ease of identification of these defects and results of site-specific surgery

# Experienced operator

- Generalist v Specialist
- ?numbers of procedures required to maintain skills
- Anatomical v functional result

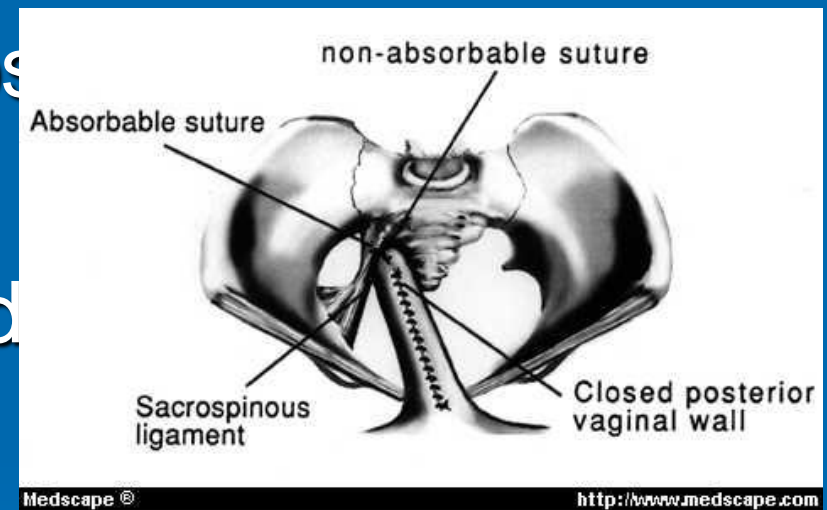
# Other operations – Sacrococpopexy

- Synthetic mesh used to support vaginal vault.
- Abdominal / laparoscopic
- Success rate
- Risk of mesh erosion/ infection



# Other operations – Sacrospinous fixation

- Vaginal procedure
- Vault sutured to sacros
- Success rate
- Risk of damage to pud  
nerve




# Sacrocolpopexy versus SSF

- Sacrocolpopexy associated with less:
  - Recurrent vault prolapse (5% v 15%)
  - Further surgery (13% v 26%)
  - Dyspareunia
  - Post op SUI
  
- Longer operating time
- Longer recovery time
- Higher cost



# How to Improve Results of Surgery

- Site-specific repair
  - Experienced operator
  - Other operations
  - Graft
- 

# Why use mesh?

- Provide additional support
- Procedures easy to learn
- Lower recurrence rates
  - Anterior repair 14% v 30%
  - Posterior repair 14% v 20% n.s.

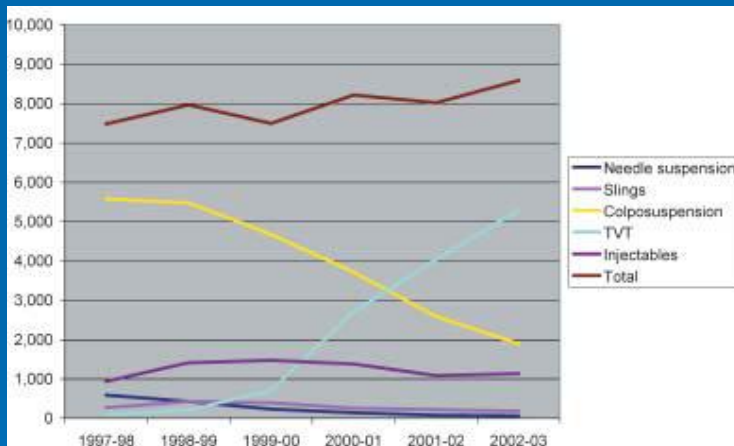
NICE 2008

# Why avoid mesh?

- Limited evidence that long term outcomes improve
- Complications potentially greater than with traditional surgery
- Very industry driven



# Mesh – the story so far



- Increasing numbers of women having mesh inserted for USI
- TVT most common procedure for USI world-wide
- Will mesh for prolapse surgery follow suit?

# Uses of graft materials

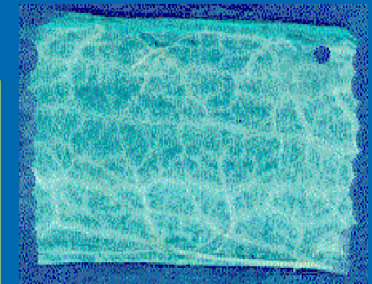
- Very small volume in mid-urethral tapes
- Small volume in anterior and posterior repair - ?in primary or secondary surgery
- Large volume in prolapse repair 'kits' – aim to support and suspend the prolapse

# Graft Materials

- Autologous tissue
- Allograft, xenograft
- Naturally-derived mesh e.g. pelvicol, SIS
- Synthetic non-absorbable mesh e.g. Gynemesh PS

# Non-synthetic Mesh

- Indications
- Success rates
- Absorbable!



# Synthetic Mesh - Materials

## ➤ Polypropylene

- Prolene, Gynemesh, Surgipro, IVS

## ➤ Polyester

- Mersilene

## ➤ PTFE

- Goretex

## ➤ Polyamide

- Nylon

## ➤ Monofilament

- Prolene,
- Gynemesh/PS

## ➤ Multifilament

- Surgipro
- IVS
- Mersilene

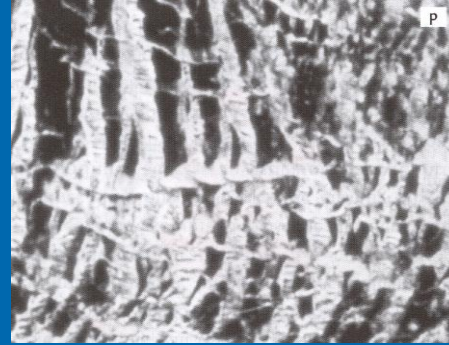




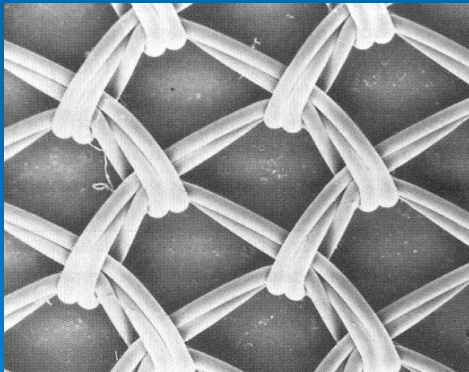
# Synthetic Mesh



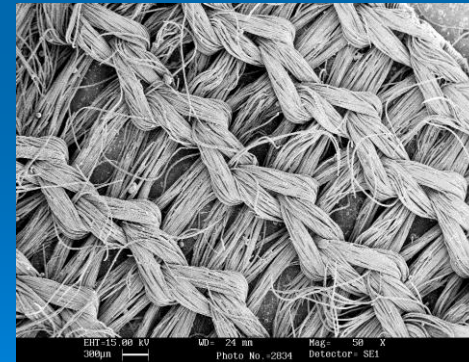
**IVS**



**Goretex**




**Gynemesh**

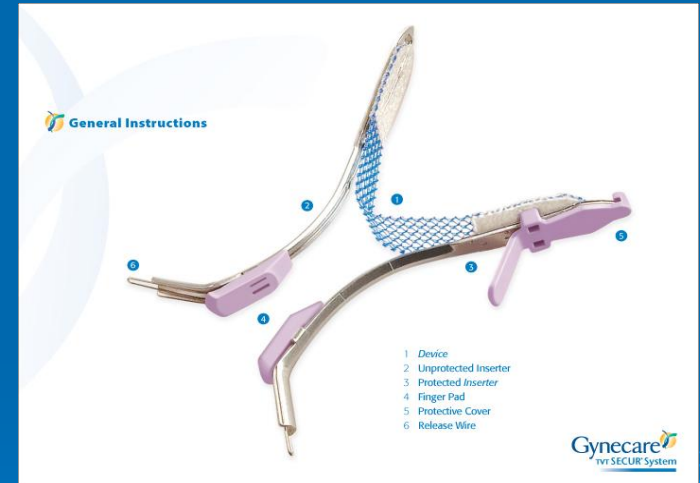
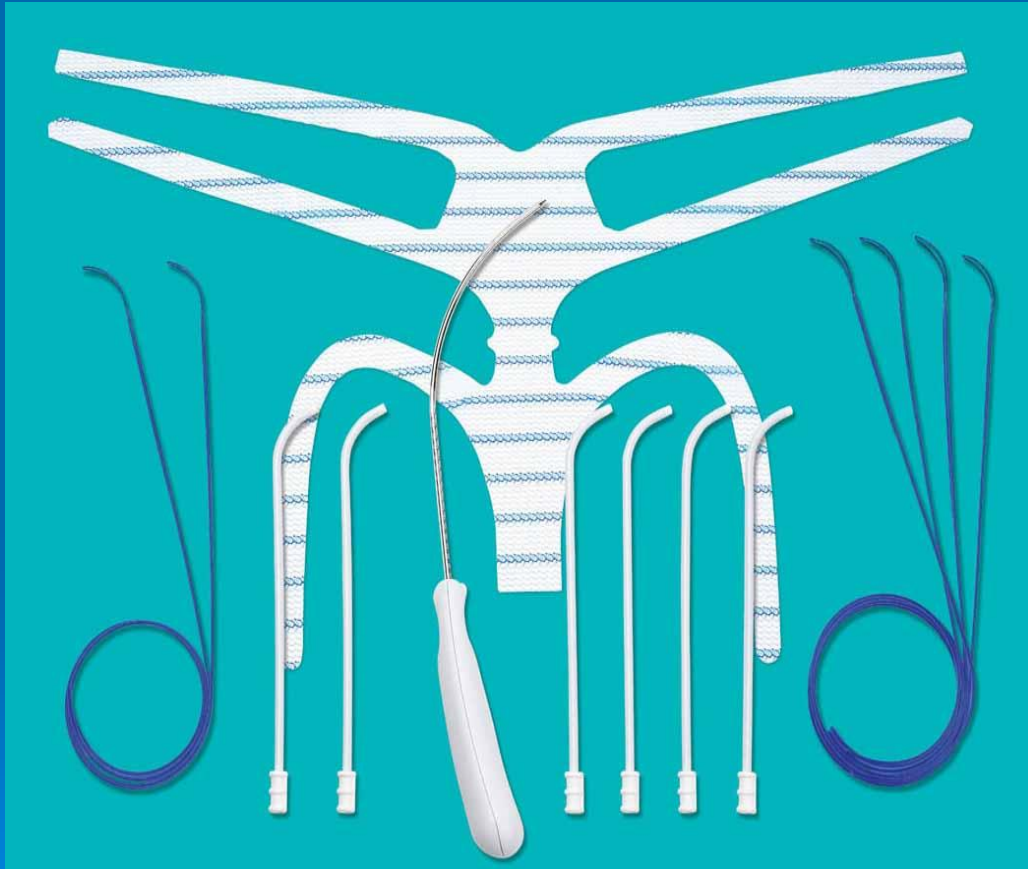


**Mersilene**

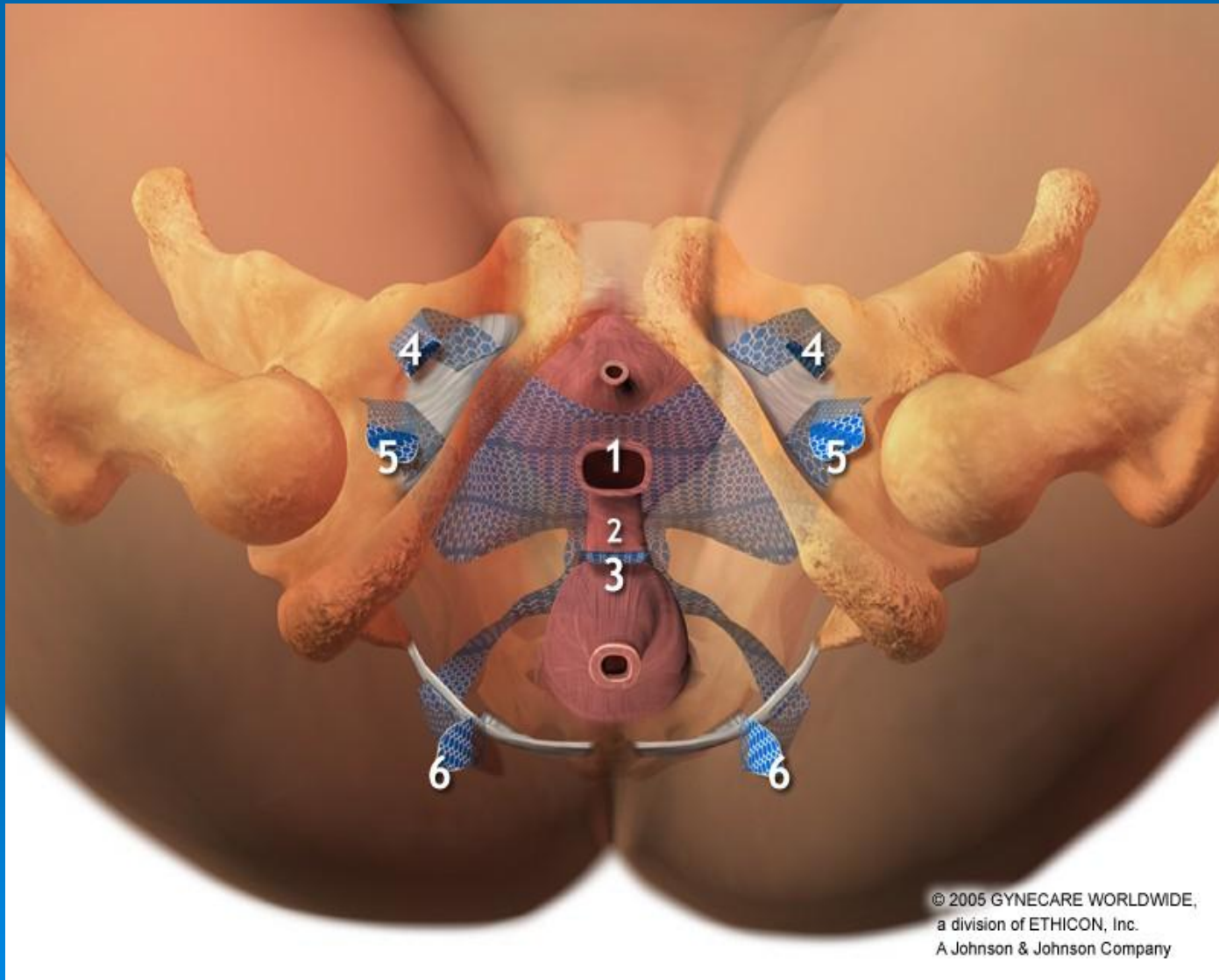
# Requirements of a Synthetic Mesh

- Resist infection
  - Incorporate into surrounding tissue
  - Histologically well tolerated
  - Minimal shrinkage
  - Pliability
- 
- The background of the slide features several sets of concentric circles in a lighter shade of blue, resembling ripples in water. These circles are positioned in the lower right quadrant of the slide, with one set being the most prominent and largest, and others of varying sizes scattered around it.

# Volume of mesh



# Total Vaginal Mesh Repair



# Problems with mesh

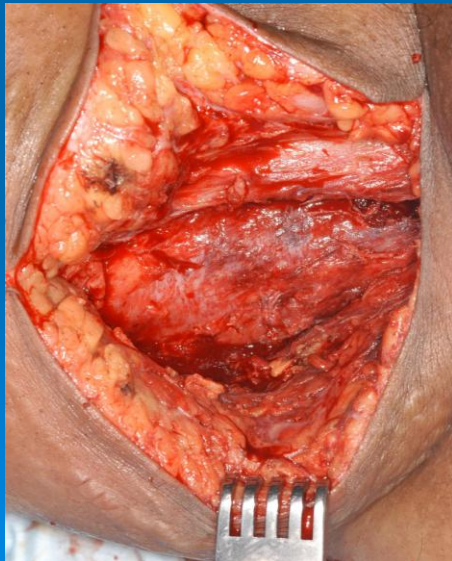
- Surgical complications
- Infection
- Erosion
- Shrinkage
- Dyspareunia



# Surgical Complications



# Infection



# Erosion

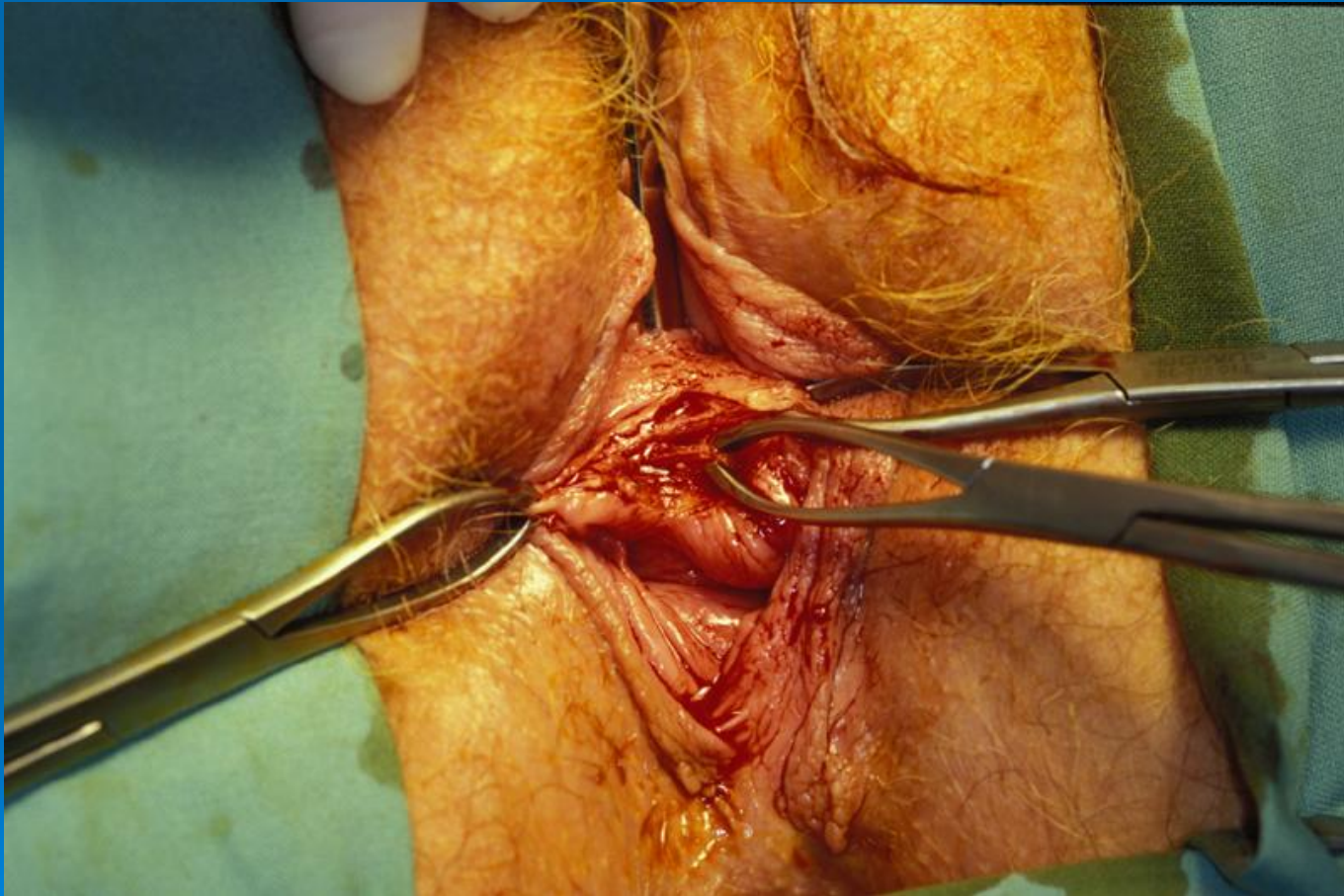
	Autologous material (1715 pts)	Synthetic material (1515 pts)	Homologous materials (414 pts)
Vaginal erosion	1 (0.001)	10 (0.007)	0
Urethral erosion	5 (0.003)	27 (0.02)	0
Fistula	6 (0.003)	4 (0.002)	0
Wound infection	1 (0.006)	15 (0.009)	9 (0.02)



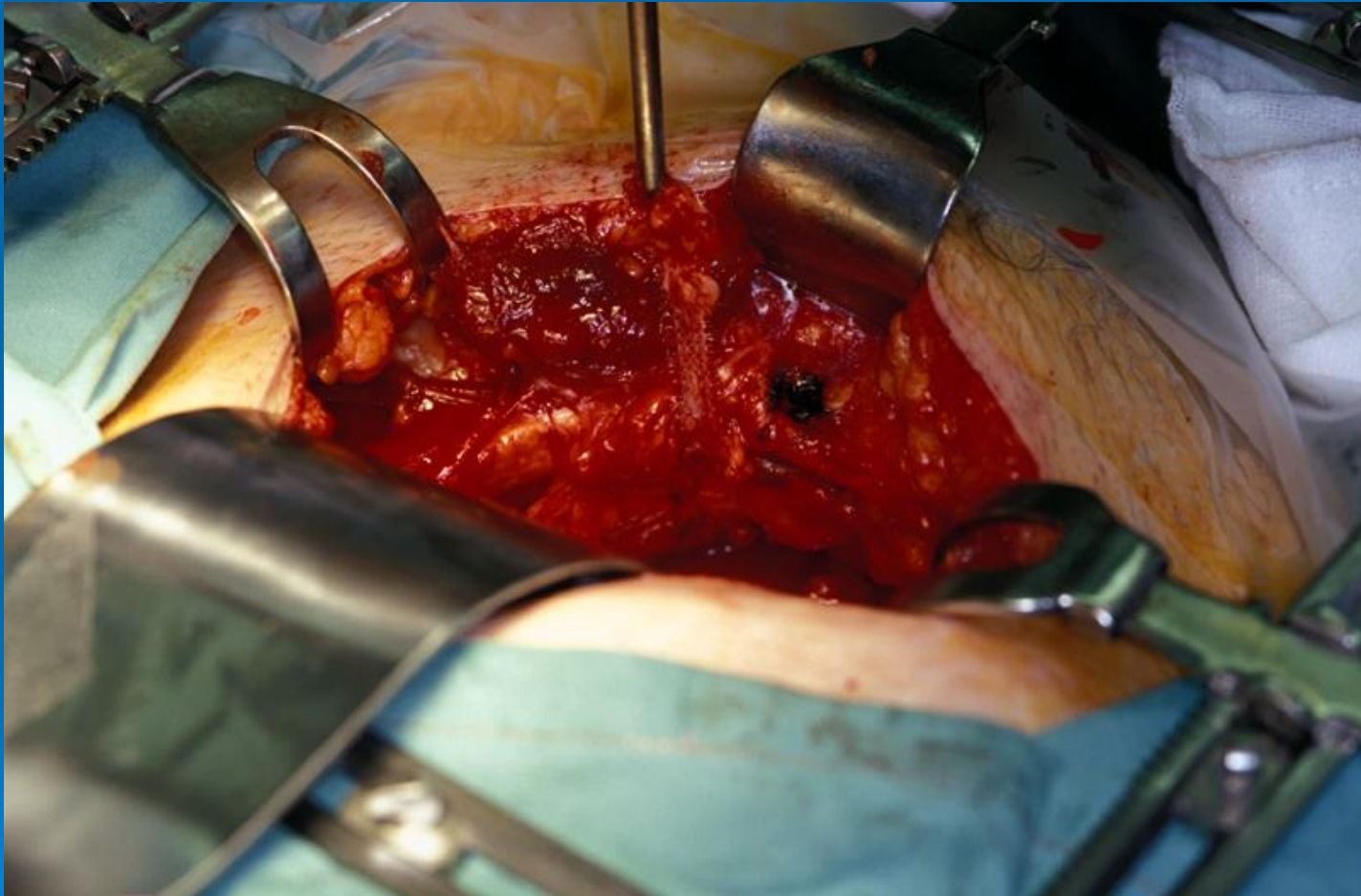
# Vaginal Erosion



# Vaginal Erosion



# Vaginal Erosion



# Fistula



# Shrinkage

- Shrinkage could
  - damage result
  - lead to complications
- Minimise shrinkage by reducing inflammatory reaction



# Dyspareunia

- Type of mesh – natural / synthetic
- Thickness of mesh
- Amount of mesh
- Shrinkage
- Erosion



# Pliability

- In order to preserve sexual function mesh must
  - be soft to preserve vaginal suppleness
  - have smooth edges to avoid irritating spikes



# NICE?

- Some benefit for anterior prolapse
- Minimal benefit for posterior prolapse
- Significant problems with
  - erosion
  - infection
  - visceral damage
  - dyspareunia
- Clinical Governance



# Summary

- Existing operations are unsatisfactory
- New advances are as yet unproven with virtually no data on efficacy



*"Nurse, get on the internet, go to SURGERY.COM, scroll down and click on the 'Are you totally lost?' icon."*