

Mesh Complications Management Training Pathway





Contents

Background	Error! Bookmark not defined.
Section 1: Capabilities In Practice	4
Section 2: Procedures	15
Section 3: Gmc Generic Capabilities Framework	23



Background

The purpose of the Mesh Complications Training Pathway is to equip doctors in regional specialised centres with the clinical skills needed to manage patients presenting with a wide range of mesh implant complications originally inserted for urinary incontinence (UI), pelvic organ prolapse (POP) and rectal prolapse. It does not include management of patients with complications of mesh inserted for other reasons including abdominal wall hernia or for complications following non-mesh surgery for UI, POP or rectal prolapse.

The training pathway will be reviewed after 10 established practitioners have been accredited to ensure that the training pathway is fit for purpose. A second review will be repeated after a further 10 established practitioners have been accredited and the pathway will then follow the routine annual curriculum review process.



SECTION 1: Capabilities In Practice

CiP 1: The doctor has the knowledge, skills and attitudes required for the clinical assessment of patients presenting with suspected mesh-implant complications

GPC Domains 1,2,3,4

Key skills	Descriptors	
Takes and presents a medical history, including pelvic floor symptoms, chronic pain and impact of condition on quality of life in patients with suspected mesh complications	 Takes and presen accordance with a International Con Association) as th Evaluates whethe complication Communicates patheir severity and Is able to present 	ts an appropriate history and uses terminology in recognised international classifications (e.g the tinence Society/International Urogynaecology ey are introduced into clinical practice. er symptoms might be caused by a mesh-related atient's symptoms effectively and understands social and psychological impact cases to the multidisciplinary team
Uses standardised assessment tools when assessing patients	 Uses clinical histo Selects, uses and pain and quality c 	ry and examination to make an initial diagnosis analyses appropriate standardised symptoms, of life questionnaires
Performs a general pelvic floor and/or neurological examination to clinically assess for mesh complications	 Performs an appropriate examination, elicits abdominal and pelvic signs and highlights relevant findings to the team Describes the suspected mesh complications with recognised tools, such as ICS/IUGA systems or other assessment methods as they are introduced into clinical practice Performs neurological examination to assess neurological conditions that may affect the pelvic floor, for perineal denervation and to assess the distribution of pain, sensory alteration or muscle weakness Reviews clinical findings in the context of the patient's symptoms Communicates significance of clinical findings to the patient and to the multidinary term 	
Works with specialists within the multidisciplinary team to assess and manage mesh complications	 Determines correct indications for input from the other members of the MDT including urogynaecology, urology, colorectal, radiology, clinical scientists/physiologists, rheumatology, neurology, orthopaedics, plastics, pain specialists as well as the need for physiotherapy, specialist nursing and psychological and/or psychosexual support 	
Evidence to inform de	ecision	
Reflective practice		Trainer Evidence:



Royal College of Obstetricians & Gynaecologists

- Attend multidisciplinary mesh clinics
- Case discussion and observation with other members of the multidisciplinary mesh surgical team
- Personal Study
- Tailored clinical experience •
- Feedback from trainer •
- Annual appraisal
- Evidence of attendance at appropriate courses

- **Evidence of Reflective practice** ٠
- Evidence of assessment & management of ٠ mesh patients in an out-patient setting
- Evidence of attendance and case • presentation at mesh MDT meetings
- Personal study •
- Evidence of tailored clinical experience ٠
- Annual appraisal ٠
- Evidence of attendance at appropriate • courses and meetings, as delegate or trainer

Knowledge criteria

- The relationship between mesh implants, patient signs & symptoms and other medical conditions e.g. radiotherapy, chronic pain, rheumatology
- An understanding and use of standardised terminology and assessment tools, including QoL questionnaires, PROMS and PREMS
- Management of chronic conditions, and impact on QoL
- Recognises the complexity of the biopsychosocial model of persistent pain.
- The impact of mesh complications on bladder & bowel function, systemic conditions (such as chronic pain), and how to assess and counsel patients appropriately
- What examination findings are relevant diagnosing and treating suspected mesh complications
- The appropriate investigations and diagnostic criteria for mesh complications and the surgical principles for repair and complications that may occur
- Understands and is able to counsel patients on the surgical techniques for the treatment of mesh related complication, through an informed consent process

CiP 2: The doctor is able to investigate mesh complications and interpret the results of tests appropriately.

GPC Domains 1,2,3,4,5,6



Key skills	Descriptors	
Performs, understands and interprets appropriate investigation for assessment of suspected mesh- related complications	 Is able to perform diagnostic investigations appropriate to their role within the multi-specialist surgical team to assess mesh complications, such as: Cystourethroscopy Sigmoidoscopy Laparoscopy Urodynamics including video urodynamics and voiding studies Is able, through the MDT, to offer other invasive investigations if required, including Retrograde ureteric studies Colonoscopy USS/CT/MRI Virtual CT Colonoscopy and Protography 	
Refers for further investigation of suspected mesh- related complications when appropriate and understands and interprets the results accordingly	 Identifies available modalities and indications for imaging the pelvis Makes appropriate requests and interprets results appropriate to the role within the multi-specialist surgical team, including: Pelvic Floor Ultrasound MRI CT Can counsel patients on these tests: how they are performed, their indications and explain their results to the patients Can communicate test results to the multidisciplinary team 	
Evidence to inform de	cision	
 Reflective practice Attend multidiscipl Case discussion and members of the multidiscipl 	 Trainer Evidence: inary mesh clinics Evidence of Reflective practice Evidence of investigation, counselling and management of mesh patients in an outpatient setting 	



- Personal study
- Tailored clinical experience
- Feedback from trainer
- Annual appraisal
- Evidence of attendance at appropriate courses
- Evidence of attendance and case presentation at mesh MDT meetings
- Personal study
- Evidence of tailored clinical experience
- Annual appraisal
- Evidence of attendance at appropriate courses and meetings, as delegate or trainer

Knowledge criteria

- Relevant anatomy, physiology and pathophysiology of mesh complications
- Effects of mesh complication: physiological events, systemic disease, the related symptoms and clinical findingsx
- Which investigations are appropriate for further assessment of mesh complications, based on clinical assessment, including:
- Urodynamic studies including voiding studies
- Cystourethroscopy: rigid/flexible
- CT/MRI (Urogram / colon /contrast)
- Magnetic resonance imaging
- Ultrasound of pelvic floor
- Colonoscopy / sigmoidoscopy
- Virtual CT Colonoscopy
 - \circ Protography
- The impact of results on clinical management and surgical planning
- The impact of results on patient counselling and patient choice
- Pharmacology, including mechanism of action, adverse effects and interaction, for treatment of Functional Bladder & Bowel symptoms and Chronic Pain



CiP 3: The docto	r is competent in	non-surgical mana	agement of mesh	complications.

GPC Domains 1,2,3,4,5,6

Key skills	Descriptors	
Demonstrates conservative management of mesh complications	 Recognises the importance of non-surgical management of mesh complications and can explain this to patients Recognises the importance of non-surgical therapies as an adjunct to surgical management and is able to counsel patients appropriately Counsels patients on conservative management: of its potential benefits and limitations Is able to support patient choice of non-surgical management if it is chosen Is able to manage concomitant symptoms co-existing with mesh complications (e.g. OAB, SUI, Obstructive defecation etc) appropriate for their role in the multi-disciplinary team Is able to manage mesh-related conditions (such as chronic pain, bladder and bowel symptoms) as part of the wider MDT Works in a multidisciplinary team and liaises appropriately with appropriate specialties. Counsels patients on supportive symptom control measures and support groups, and knows when to refer to other members of the multidisciplinary team (e.g. psychologist, pain specialist, GI Physiologist, clinical nurse specialists, Physiotherapists etc). 	
Evidence to inform o	lecision	
 Reflective practice Attend multidisciplinary mesh clinics Works with clinicians in other disciplines and spends time in their service Case discussion and observation with senior medical staff Personal study Tailored clinical experience Feedback from trainer Annual appraisal Evidence of attendance at appropriate courses 		 Trainer Evidence: Evidence of reflective practice Evidence of referral & investigation of mesh patients in both out-patient and in-patient (day care) setting Evidence of attendance and case presentation at mesh MDT meetings Personal study Evidence of tailored clinical experience Annual appraisal Evidence of attendance at appropriate courses and meetings, as delegate or trainer
Relevant anatomy	, physiology and funct	ion to the mesh complication



- The role of pharmacology in management of concomitant pelvic floor dysfunction (e.g. incontinence), including mechanism of action, adverse effects and interaction
- The role of pharmacology in management of chronic systemic conditions (e.g. chronic pain syndromes), including mechanism of action, adverse effects and interaction
- The effects of pharmacology used in other medical conditions, like chronic pain, on the gastro-intestinal and urinary tract
- The principles of conservative management of pelvic floor dysfunction and how to instruct and counsel patients on this treatment alongside management of the mesh complications
- Surgical management of pelvic floor dysfunction, including prolapse, bladder and bowel symptoms that may persist or arise following mesh removal



CiP 4: The doctor is competent to undertake mesh removal surgery as part of a multidisciplinary team

GPC Domains 1,2,3,4,5,6

Key skills	Descriptors
Counsels patients wishing surgical management of mesh complications	 Formulates a management plan and modifies if necessary, after discussion with MDT. Counsels on the surgical options for mesh complications including non-surgical alternatives, alternative surgical options including partial vs total removal, complications and outcomes and takes consent for surgery accordingly. Counsels patients with failed previous revision surgery. Practices patient-centred care with patient choice and informed consent being integral to their practice Utilised standardised tools to support patient decision making such as Patient Decision Aids and Information leaflets
Performs safe surgical practice	 Selects patients appropriately for vaginal or extravaginal surgery: abdominal or laparoscopic, groins/thighs Performs surgery for mesh complications in a fluent and safe manner. Calls for support from MDT as appropriate
Diagnoses and manages intra- and post-operative complications	 Inspects bladder, ureter, small and large bowel for perforation or damage, and undertakes appropriate special tests to aid recognition of injury. Recognises and repairs bladder injury and institutes appropriate post-operative bladder drainage. Recognises and institutes management of other intraoperative visceral injury including bowel, urethra and ureters. Recognises and initiates management of post-operative complications such as peritonitis, ileus, faecal contamination, ureteric injury or obstruction and urinary leakage. Uses imaging appropriately. Recognises role of other specialists in the management of surgical complications.
Discusses and counsels patient regarding benefits and risks of partial and full mesh	 Applies up to date knowledge and guidelines to mesh removal surgery Counsels patients independently regarding mesh removal complications including intra-operative, post-operative and long-



removal	term (including reacher) chronic pain)	currence of functional symptoms and worsening
Actively participates in clinical audit and national registries	 Uses nationally recome into clinical Participates in resonance presents results an Participates in clining line with national 	commended databases and registries as they practice earch and audit with other mesh surgeons and nd outcomes at the mesh centres meetings. ical governance activities and incident reporting in requirements
Performs mesh removal surgery and manages complications	 Is able to perform their role within t Demonstrates und additional support Recognises when i laparoscopically an support, or when t Follows mesh expl 	a partial and total mesh excision as appropriate to he multi-disciplinary surgical team lerstanding of what clinical findings require from other surgeons t is unsafe to continue with a procedure and the need to convert to a laparotomy, call for the procedure should be abandoned altogether. anation protocols for specimen management
Works with specialists within the multidisciplinary team to support patients in the pre- & post-operative period	 Works with the wider MDT to optimise patient readiness for surgery and post-operative recovery (e.g. anaesthetics, pain team, psychology etc) Recognises the importance in supporting women with persistent symptoms/long-term sequalae and working with other care providers 	
Evidence to inform o	lecision	
 Reflective practic Attend multidisci Attend post-oper Attend mesh rem 	e olinary mesh clinics ative ward rounds oval theatre lists	 Trainer Evidence: Evidence of shared decision making and patient Counselling Evidence of reflective practice



Knowledge criteria

- The role of mesh removal surgery in line with national guidelines, including the potential risks as well as benefits
- The indications and complications of the surgical procedures available to patients in management of mesh complications
- Potential surgical complications and how to avoid them
- Relevant anatomy including anatomy of sacral promontory and the groin
- Safe surgical site entry and choosing correct entry sites techniques for each patient
- The principles of more complex repairs such as segmental bowel resection and reanastomosis, ureteric anastomosis and reimplantation, stoma formation
- The principles underlying the repair of major vessels
- The role of the multidisciplinary team in management of these patients and when to involve them
- The surgical principles of vaginal and visceral repair (bowel and urinary tract), including



fistula repair involving mesh, indications for stoma formation and complications that may occur during reconstruction and in the longer-term

- Potential complications following mesh removal procedures, including chronic pain, fistula and worsening functional symptoms e.g. recurrent SUI/POP/ Obstructive defacation
- Understands the surgical principles, and can perform surgical mesh excision as appropriate to their role within the multi-specialist surgical team, from the following procedures:
- 1. Vaginal mesh removal (for SUI and POP)
 - a. Complete
 - b. Partial
- 2. Groin Dissection for mesh removal
 - a. Partial (including unilateral or bilateral)
 - b. complete
- 3. Sacrospinous ligament dissection for vaginal prolapse mesh removals
- 4. Removal of abdominal prolapse mesh
 - a. Laparoscopic/robot assisted
 - b. Open
 - c. Partial
 - d. Complete
- 5. Removal of mesh in the bladder and subsequent repair:
 - a. Laparoscopic/robot assisted
 - b. Endoscopic
 - c. Open
- 6. Removal of mesh in the urethra and subsequent repair:
 - a. Endoscopic
 - b. Open
- 7. Removal of mesh from the bowel and subsequent repair:
 - a. Laparoscopic/robot assisted
 - b. Endoscopic
 - c. Open
- 8. Removal of mesh implant attachment devices : arms , hooks, anchors, sutures, tacs
- How to audit surgical outcomes and use national audit databases
- The principles of subsequent management of peri-operative and long-term sequelae
- What preoperative and postoperative care the patient needs
- The investigation and diagnostic criteria for mesh-fistulae and the surgical principles for repair and complications that may occur
- Surgical principles of ureteric re-anastomosis and reimplantation techniques
- Surgical principles of enterotomy repair, segmental bowel resection and re-anastomosis, stoma formation and reversal



SECTION 2: Procedures

Mesh Complications Management Training Pathway Surgical Procedure List

Table 1: Table listing the *mandatory* surgical procedural requirements for each specialty.

These are the minimum procedures surgeons in that speciality must be able to perform, **working as part of a MDT**, in a dedicated mesh Centre. Individual surgeons must submit evidence of practice in these procedures, as indicated for their specialty

Surgeons may also demonstrate additional practice in the other procedures (optional).

Continence Mesh

M – Mandatory

O - Optional

Procedure	Colorectal	Urogynaecology	Urology
Mesh revision: Either no mesh, or a small edge of mesh is removed such that the structural integrity of the implant is left intact.	0	M	Μ
Partial vaginal mesh excision: A segment/component of the mesh is removed or transected, such that the structural integrity of the implant is altered.	0	M	M



Complete vaginal excision: The entirety of the mesh that is in contact with the vagina is excised	0	M	M
Extra vaginal mesh excision: Retropubic removal of mesh (open or lap)	0	M	Μ
Extra vaginal mesh excision: Removal of mesh from groin – groin dissection and exploration	0	Μ	0
Extra vaginal mesh excision: Removal of mini- sling / other types of continence sling attachments +/- groin dissection	0	M	Μ
Cystoscopic laser therapy of mesh from Bladder or urethra	0	0	M
Removal of mesh from urinary tract vaginal, open or lap, extra peritoneal or trans peritoneal approach and subsequent reconstruction	0	0	Μ
Removal of mesh from bowel: transvaginal, open or lap, transanal approach and subsequent repair (including resection and	Μ	0	0



		1	
loop or end stoma			
formation)			
Total mesh excision:	0	Μ	М
The surgical goal is the			
removal of 100% of the			
implant			
 Retropubic tape 			
 Transobturator tape 			
 Mini-slings 			
and subsequent			
management of any			
bowel / urinary tract			
complication			

Trans-Vaginal Prolapses Mesh

Procedure	Colorectal	Urogynaecology	Urology
Anterior compartment mesh revision: Either no mesh, or a small edge of mesh is removed such that the structural integrity of the implant is left intact.	0	Μ	0
Posterior compartment mesh revision: Either no mesh, or a small edge of mesh is removed such that the structural integrity of the implant is left intact.	0	Μ	0



Anterior compartment partial vagina mesh excision: A segment/component of the mesh is removed or transected, such that the structural integrity of the implant is altered.	0	M	0
Posterior compartment partial vagina mesh excision: A segment/component of the mesh is removed or transected, such that the structural integrity of the implant is altered.	0	M	0
Anterior compartment complete vaginal excision: The entirety of the mesh that is in contact with the vagina is excised	0	Μ	0
Posterior compartment complete vaginal excision: The entirety of the mesh that is in contact with the vagina is excised	0	М	0
Anterior compartment extra vaginal mesh excision: Removal of mesh from groin – groin dissection and exploration	0	0	0



Posterior compartment extra vaginal mesh excision: Removal of mesh from sacrospinous ligament and Ischiorectal fossa - sacrospinous ligament & Ischiorectal fossa dissection and exploration	0	0	0
Cystoscopic laser therapy of mesh from Bladder or urethra	0	0	M
Removal of mesh from urinary tract: vaginal, open or lap, extra peritoneal or trans peritoneal approach and subsequent repair -	0	0	M
Removal of mesh from bowel : transvaginal, open or lap, transanal approach and subsequent repair (including resection and loop or end stoma formation)	M	0	0
Total mesh excision – anterior compartment: The surgical goal is the removal of 100% of the implant - open or lap approach and subsequent management of any bowel / urinary tract complication	0	0	0



Total mesh excision –	0	0	0
posterior compartment:			
The surgical goal is the			
removal of 100% of the			
implant management or			
any bowel / urinary tract			
complication			

Abdominal Mesh

Procedure	Colorectal	Urogynaecology	Urology
Partial vaginal mesh excision: A segment/component of the mesh is removed or divided, such that the structural integrity of the implant is altered.	Μ	Μ	Μ
Complete vaginal mesh excision: The entirety of the mesh that is in contact with the vagina is excised – vaginal, open or laparoscopic approach	M	M	0
Partial removal of mesh from urinary tract: A segment/component of the mesh is removed from the urinary tract, such that the structural integrity of the implant is altered, - vaginal, open or lap, extra peritoneal or trans peritoneal approach and subsequent reconstruction	0	0	M



Complete removal of mesh from urinary tract: The entirety of the mesh that is in contact with the urinary tract is excised - vaginal, open or lap, extra peritoneal or trans peritoneal approach and subsequent reconstruction	0	0	M
Cystoscopic laser removal of	0	0	М
mesh from Bladder or urethra			
Partial removal of mesh from bowel: A segment/component of the mesh is removed or transected, such that the structural integrity of the implant is altered - transvaginal, open or lap, transanal approach and subsequent repair (including resection and loop or end stoma formation)	Μ	0	0
Complete removal of mesh from bowel: transvaginal, open or lap, transanal approach and subsequent repair (including resection and loop or end stoma formation)	M	0	0
Partial abdominal sacrocolpopexy mesh excision: a segment/component of the abdominal mesh is removed or transected, such that the structural integrity of the implant is altered.	0	M	0



Partial abdominal rectopexy mesh excision: a segment/component of the abdominal mesh is removed or transected, such that the structural integrity of the implant is altered.	M	0	0
devices: exploration and removal of sutures/protac from sacrum			0
Complete Removal of sacrocolpopexy mesh: the surgical goal is the removal of 100% of the implant - open or lap approach and subsequent management of any bowel / urinary tract complication	0	Μ	0
Complete removal of rectopexy mesh: The surgical goal is the removal of 100% of the implant - open or lap approach and subsequent management of any bowel / urinary tract complication (including bowel resection and loop or end stoma formation)	M	0	0



SECTION 3: GMC Generic Capabilities Framework

Mapping to GPCs

- Domain 1: Professional values and behaviours
- Domain 2: Professional skills
 - Practical skills
 - o Communication and interpersonal skills
 - Dealing with complexity and uncertainty
- Domain 3: Professional knowledge
 - Professional requirements
 - o National legislative structure
 - o The health service and healthcare system in the four countries
- Domain 4: Capabilities in health promotion and illness prevention
- Domain 5: Capabilities in leadership and team working
- Domain 6: Capabilities in patient safety and quality improvement
- Domain 8: Capabilities in education and training
- Domain 9: Capabilities in research and scholarship