

Surgical removal of a retropubic mesh sling

What is mesh?

Mesh is a manufactured material, usually made up of strands of polypropylene woven like a net. There are different types of mesh made of various materials. Mesh can be inserted through different routes to treat a number of medical conditions. Generally, mesh is used to provide support to weakened tissues in the body such as in the abdominal wall to treat hernias. In women, mesh has been used to treat both stress urinary incontinence and pelvic organ prolapse for many years. When used to treat stress urinary incontinence it is referred to as a mesh sling.

Mesh is intended to be permanent once placed in the body. This affects your options for treatment if there are complications, as it can be difficult and sometimes impossible to completely remove. Surgery to remove a mesh sling will depend on the type of sling you have.

What is a retropubic mesh sling?

There are three main types of mesh slings used to treat stress urinary incontinence

- **Retropubic mesh slings** (e.g. TVT) support the bladder neck and pass from just under the skin of the front of the vagina, behind the pubic bone and up through the abdominal wall.
- **Trans-obturator mesh slings (e.g. TVT-O or TOT)** support the bladder neck and pass from just under the skin of the front of the vagina, horizontally outward and through the groin muscles (inner thigh).
- **Single incision mini slings** support the bladder neck and are fixed into the tissues using small plastic anchors.

This information leaflet is for those women who have had a retropubic mesh sling, such as a TVT.

Reasons why women may choose to have removal of a retropubic mesh sling

1. Vaginal problems

Mesh can sometimes come through into the vagina if the skin of the vagina doesn't heal over properly or opens up after surgery. This is called **vaginal mesh exposure**. Sometimes this can happen without you being aware of it and it is discovered when you have a vaginal examination for another reason. Mesh exposure can cause some or all of the following symptoms:

- Vaginal discharge or bleeding, and vaginal infections.

- 46
- Painful sex for you and/or your partner, or bleeding after sex.
- 47
- A prickly sensation or being able to feel the mesh in the vagina.
- 48
- Pain in the vagina, pelvis, groin, thigh or a combination of these.
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51 2. Bladder or urethral problems

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53 The mesh can also come through into the bladder or the urethra, the tube that releases
54 urine from the bladder. This is called **mesh extrusion or perforation**. This can happen at the
55 time of surgery or some time (perhaps years) later. It happens much less often than vaginal
56 mesh exposure. It can cause problems including:

57

- Frequent urinary tract infections (UTIs).
- Blood in the urine.
- Difficulty emptying the bladder.
- Pain when passing urine or having sex.
- Leaking urine or having to get to the toilet quickly (urgency).

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65 3. Other problems

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67 Some women who have had mesh surgery experience symptoms where there may be no
68 obvious cause to explain them. These symptoms can severely impact your physical,
69 emotional and psychological health and your quality of life and can be difficult to treat.
70 Some but not all of these are similar to problems that can also happen after surgery that
71 doesn't include mesh

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73

74 These problems can include:

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- Pain or changes in sensation in the back, abdomen, pelvis, leg, vagina or groin
- New urinary symptoms of either retention of urine (being unable to empty your bladder when full), urge incontinence (sudden and strong need to urinate), stress incontinence or pain emptying the bladder.
- Recurrent urinary infections.
- Vaginal discharge.

82

83 Some women report the development of autoimmune diseases, fibromyalgia and allergies
84 following their mesh implant. At present there is no scientific evidence to support a link
85 between mesh implants and these conditions or that these symptoms or conditions will
86 improve following mesh removal surgery.

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88 What are the [alternatives](#) to mesh removal surgery?

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90 There are several different options for treating mesh complications. The treatment you
91 receive will depend upon the nature of your symptoms, your examination findings and
92 investigation results, and ultimately, your treatment preference. Some women choose not

93 to have mesh removal surgery and prefer to explore non-surgical options rather than
94 proceeding immediately to mesh removal surgery.

95

96 The alternative non-surgical options include:

97

98 • No active treatment.

99 • Physiotherapy or other physical therapies.

100 • Pain management programme, including medication and psychological support.

101

102 Combinations of these treatments may be recommended.

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104 This information leaflet explains more about **surgical** treatment options.

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106

107 *What types of mesh removal surgery are there?*

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109 The type of surgery needed to remove mesh varies for each individual woman.

110

111 • If the mesh is found to be infected or extruding into one of your internal organs such
112 as your bladder or urethra, it is highly likely that the multidisciplinary team will
113 recommend mesh removal surgery to prevent further harm.

114 • If the mesh sling has cured your incontinence and you have symptoms that are
115 difficult to reliably attribute to mesh, the decision to proceed with mesh removal
116 surgery is more difficult. In these cases the multidisciplinary team may recommend
117 you do not proceed with mesh removal surgery and may offer you other treatments
118 or a second opinion.

119

120 Importantly, it may not be necessary (or possible) to remove all of the mesh to improve
121 symptoms associated with mesh complications, but some women prefer this option

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123

124 *Mesh sling division*

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126 The mesh sling can be divided or cut without removing any of the mesh. This option may be
127 offered to help with difficulty emptying the bladder if the mesh sling is thought to be too
128 tight. It may also be considered to relieve tension on the mesh, where this is thought to be
129 causing pain. This is usually a minor procedure which can be carried out as a day case under
130 local, regional (spinal) or general anaesthetic.

131

132 *Partial removal of the vaginal portion of a retropubic mesh sling*

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134 A part of the mesh sling can be removed by an operation through the vagina. This is usually
135 performed if the mesh has come through the vaginal skin (mesh exposure) and is usually a
136 minor procedure removing a few fibres or a few centimetres of mesh. This can be carried
137 out as a day case under local, regional (spinal) or general anaesthesia. After this procedure
138 it is generally still possible to identify and remove the remaining mesh if needed.

139

140 *Complete removal of the vaginal portion of a retropubic mesh sling*

141

142 The entire portion of mesh under the skin of the vagina (usually 5-8cm in length) can be
143 removed. This is a moderate sized operation under general or regional (spinal) anaesthesia,
144 and usually requires an overnight hospital stay. Sometimes a bandage (pack) is placed inside
145 the vagina at the end of the operation to help prevent bleeding and a catheter is usually left
146 in the bladder overnight. The pack and catheter are usually removed the following day.
147 Although all of the vaginal part of the mesh is removed during this operation, the arms that
148 pass upwards behind the pubic bone and through the abdominal wall is left behind. It is
149 usually possible to remove the remaining mesh later (see below).

150

151

152 *Complete removal of a retropubic mesh sling*

153

154 Some women decide to have the mesh removed from behind the pubic bone at the same
155 time as vaginal mesh removal, so that **all** of the mesh sling is removed from the body. It is
156 usually possible to remove **retropubic (TVT) mesh slings** completely with a combined
157 vaginal and abdominal operation even if the vaginal part of the mesh has already been
158 removed.

159

160 The abdominal part of the operation can be performed as a laparoscopic (keyhole) or open
161 (cut in the tummy) operation. With keyhole surgery, it can be difficult to remove the small
162 amount of mesh from the abdominal muscles and fat. An additional cut in your tummy may
163 be needed to remove the mesh as it goes through the muscles. Not all women choose to
164 have this small piece of mesh removed when they are having a keyhole operation.

165

166 Complete mesh removal is a major operation and usually requires general anaesthesia and a
167 hospital stay of 2-4 days. Sometimes a bandage (pack) is placed inside the vagina at the end
168 of the operation to help prevent bleeding problems and a catheter is left in the bladder
169 overnight. The pack and catheter are usually removed the morning after surgery. The
170 recovery time after complete mesh removal surgery is usually around 4-6 weeks.

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172

173 *Removal of mesh from the urethra*

174

175 Mesh that has gone into the urethra (extrusion or perforation) is a serious complication. The
176 mesh is usually removed by an operation through the vagina. This involves opening up the
177 vagina and urethra to remove the mesh and then repairing the holes in the urethra and the
178 vagina. The urethra is a very delicate organ and the repair may need to be reinforced with a
179 Martius graft to help it to heal. A Martius graft is a piece of fat from inside the labia majora
180 which is tunnelled under the skin to cover the urethral repair to help it to heal.

181

182 This is a moderate sized operation and may need hospital stay of 2-4 days. The operation
183 can be done under general or regional (spinal) anaesthesia. If mesh is removed from the
184 urethra, through the vagina, you will need a catheter in the bladder for 1 to 3 weeks, to
185 allow the urethral tissues to heal fully. If the tissues do not heal properly, there is a risk that

186 a fistula will develop. A fistula is a connection between the urethra and the vagina and can
187 cause severe and constant urinary leakage. This is a serious complication which usually
188 needs further surgery to repair it.

189

190 Sometimes mesh in the urethra is removed without opening the urethra, either by using a
191 laser in the urethra or by cutting the mesh from the inside of the urethra. This is not always
192 possible. These are smaller procedures than removing the mesh through the vagina and can
193 be done as a day case. However, there is a risk that some mesh will be left behind in the
194 wall of the urethra and that you might need to have further surgery to remove this.

195

196 *Removal of mesh from the bladder*

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198 Mesh that has gone into the bladder (extrusion or perforation) is a serious complication.
199 The mesh can be removed from the bladder using either keyhole or open surgery. During
200 this operation the bladder is opened to remove the mesh and the bladder is then repaired
201 with stitches. Removal of the rest of the mesh from the vagina or from behind the pubic
202 bone can be performed at the same time as removal of mesh from the bladder.

203

204 It is usually necessary to leave a catheter in for 1 to 3 weeks after this surgery to allow the
205 bladder tissues to heal fully. If the bladder does not heal properly, there is a risk that a
206 fistula (connection between the bladder and the vagina causing severe and constant
207 incontinence) will develop. This is a serious complication which usually needs further
208 surgery to repair it. The recovery time after mesh removal from the bladder is usually
209 around 4-6 weeks.

210

211 Sometimes it is possible to remove mesh in the bladder using a laser during a telescopic
212 examination of your bladder (cystoscopy). This is usually a minor procedure that can be
213 done as a day case and may be suitable for people who have medical conditions that make
214 major surgery risky. This approach is not always possible and there is a risk that mesh will
215 be left behind in the wall of the bladder and you may need further surgery to remove this.

216

217 *Complications of surgical removal of a retropubic mesh sling*

218

219 Surgical removal of a mesh sling can make some problems worse therefore mesh removal
220 surgery may not be the right treatment option for you. The risks of mesh removal surgery
221 are different for each woman and are dependent on a number of factors such as:

- 222 • How close the mesh is to your urethra or bladder.
- 223 • The amount of mesh to be removed.
- 224 • Previous mesh removal surgery.
- 225 • The amount of scarring in the tissues.
- 226 • If you have more than one mesh implant in place.

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228

229 Mesh removal may not help all or even any of the symptoms you feel are related to your
230 mesh implant e.g. recurrent urinary infection, vaginal discharge, pain, fibromyalgia,
231 autoimmune conditions. Urinary symptoms may not improve and new symptoms may

232 develop. Even if symptoms do not improve or if they get worse, some women experience a
233 psychological benefit knowing that the mesh implant has been removed from their body.

234

235

236 Possible complications of surgery;

237

238 • There is a risk of injury to the urethra or bladder during mesh removal surgery. If
239 this occurs, the injury will need to be repaired immediately. If the injury does not
240 heal properly, a fistula can develop. A fistula is a connection between the urethra or
241 bladder and the vagina and can cause severe and persistent urinary leakage. This is a
242 serious complication which usually requires further surgery.

243

244 • There is a risk of significant bleeding requiring blood transfusion, especially with
245 total mesh removal surgery involving surgery to remove mesh behind the pubic
246 bone.

247

248 Complications after the operation (short-term)

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250 • Post-operative pain may be worse than the pain before surgery, especially if you
251 have chronic pain affecting other parts of your body.

252

253 • There is a risk of significant bruising, wound infection and wound hernia (after
254 abdominal mesh removal).

255

256 • All operations carry a risk of developing a blood clot in your leg or lung (deep vein
257 thrombosis – DVT and pulmonary embolism - PE). The risk of this complication is
258 higher in women having a total mesh removal as the operating time is longer and
259 you may be less mobile for a few weeks after surgery.

260

261 Complications after the operation (long term)

262

263 • There is a significant chance that stress incontinence symptoms will come back after
264 division or removal of the mesh sling. It is difficult to know how likely this is, but the
265 risk is higher the more mesh that is removed. It is possible to have surgery for stress
266 urinary incontinence at the same time as mesh removal surgery. Your surgeon will
267 discuss whether this would be appropriate for you, what your options are and what
268 the added risks of this surgery might be.

269

270 • **Pain may improve following mesh removal surgery but then return a few months**
271 **later.** There is no guarantee that mesh removal surgery will improve symptoms of
272 pain in the long term.

273

274 • You might need further treatment for complications after mesh removal surgery or
275 for urinary incontinence.

276 What I would like to achieve from mesh removal surgery – my goals

277

After you have considered carefully which treatments might be best for you, use this section to write down your thoughts about each treatment option. You may find it helpful to complete these sections with your doctor.

1. Which symptoms do you hope will get better after mesh removal?

2. Which type of mesh removal have you chosen and why?

3. Do you understand the different mesh removal options and that it is not always possible to remove all the mesh?

4. Any other goals you have from this surgery?

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280 Consultant comments

281

This section can be used for the doctor to write down comments about mesh removal surgery that are specific to you personally. This can be done after you have discussed the options with your doctor

1. Which symptoms are likely to be addressed by having mesh removed?

2. Which type of mesh removal do you feel is most appropriate and why?

3. Have the different options for mesh removal and the pros and cons of each been explained and that it is not always possible to remove all the mesh?

4. Have other goals of surgery been explored?

282

283

284 [Mesh Complication Terms you may have come across](#)

285

286 **Conservative management**

287 Treatment or management that does not involve surgery.

288

289 **Mesh erosion**

290 This is a general term for any synthetic mesh or mesh sling that is found perforating an
291 organ after surgery, such as the urinary tract or bowel. This term is also used to refer to
292 mesh exposure or mesh extrusion.

293 See Mesh exposure, Mesh extrusion.

294

295 **Mesh exposure**

296 Mesh or mesh sling that is visible in the vagina or rectum. This can be asymptomatic (when
297 the woman is not aware/ bothered by the potential problem) or there may be symptoms
298 such as pain or bleeding.

299 See Mesh erosion, Mesh extrusion.

300

301 **Mesh extrusion**

302 Passage of the mesh sling gradually out of a body structure or tissue.

303 See Mesh erosion, Mesh exposure.

304

305 **Fistula**

306 An abnormal connection that forms between 2 hollow spaces in the body, such as bladder,
307 intestines, or blood vessels. They can form after surgery, injury, infection or inflammation.

308

309 **Mesh sling**

310 A flat strip of woven synthetic material, usually made of polypropylene, which is placed
311 surgically below the urethra (suburethral) for the treatment of stress urinary incontinence.
312 Mesh slings are often inserted using trocars (needles) and can be placed behind the pubic
313 bone (via the retropubic route) or through a part of the pelvis called the obturator foramen
314 (via the transobturator route). Some mesh slings are also sometimes inserted using only a
315 single vaginal incision (so called 'single-incision mini-slings'). These devices are also
316 commonly referred to as 'tapes'.

317

318 **Multidisciplinary team (MDT)**

319 A team of healthcare professionals that is formed to help diagnose and/or treat complex
320 conditions. MDTs are generally used when it is suitable for care to be provided on an
321 individual case basis and when the complex nature of the condition requires input from
322 many professionals in different areas of medicine.

323

324 **Retropubic mesh sling**

325 A method to insert a synthetic suburethral mesh sling to treat the symptoms of stress
326 urinary incontinence. A needle is inserted upwards through a small incision in the vaginal
327 wall below the urethra, passing behind the pubic bone and through the abdominal wall.

328 Each arm of the mesh goes through the space behind the pubic bone and into the
329 abdominal muscles in a U shape and supports the urethra. (e.g. TVT, IVS).

330

331 Single-incision mini-sling (SIMS)

332 A surgical procedure to insert a synthetic suburethral mesh sling to treat the symptoms of
333 stress urinary incontinence. The slings are shorter than retropubic and transobturator mesh
334 slings and are inserted using only a single incision in the vagina. The sling is usually attached
335 to the tissues at each end with a small plastic anchor. There are several designs of mini-
336 slings, each of which have different tissue anchor or fixation points.
337 e.g. Non-adjustable: Contasure Needleless, TVT-Secur, MiniArc, Ophira; Adjustable: retropubic
338 (Ajust), transobturator (TOA).

339

340 Synthetic mesh

341 A man-made, net-like product. Polypropylene is the most common material that mesh is
342 made from. Other terms used for mesh when used to repair prolapse include tape, ribbon,
343 sling and hammock.

344

345 Transobturator inside-out mesh sling (TVT-O)

346 A method to insert a synthetic suburethral mesh sling to treat the symptoms of stress
347 urinary incontinence. A needle like device is used to insert a mesh sling horizontally through
348 the obturator foramen from an incision in the vagina to an exit point on the inner thigh.
349 Each arm of the mesh lies in the muscles that overlie the obturator foramen and in the
350 muscles of the upper inner thigh.

351

352 Transobturator outside-in mesh sling (TOT)

353 A method to insert a synthetic suburethral mesh sling to treat the symptoms of stress
354 urinary incontinence. A needle like device is used to insert a mesh sling horizontally through
355 the obturator foramen from an incision on the inner thigh to an incision in the vagina. Each
356 arm of the mesh lies in the muscles that overlie the obturator foramen and in the muscles of
357 the upper inner thigh (e.g. MONARC, Obtape).

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359