“Have we meshed up?” A pictorial review of mesh devices used for pelvic organ prolapse and their complications.

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Purpose
The aim of this presentation is to demonstrate the different implantable devices used for the treatment of pelvic organ prolapse, such as non-absorbable polypropylene meshes and slings. Their possible complications are reviewed.

Methods and materials
Pelvic organ prolapse affects women of all ages. Since 1996, many women were treated with implantable mesh devices via a transabdominal (sacrocolpopexy/rectopexy) or transvaginal (transvaginal tape or transobturator tape procedure) approach. We review the Magnetic Resonance studies of patients and demonstrate the optimal position of the devices in the pelvis, as well as the complications that may arise from their implantation.

Results
Familiarisation with the different types of implantable devices is of prime importance in image interpretation and detection of complications. Complications include pelvic organ prolapse recurrence, mesh exposure and erosion, fistulation, mesh misplacement and infection.

Transvaginal Tape (TVT)
Through a transvaginal approach, the trocars are advanced in the retropubic space. The arms of the sling course between the vagina and the urethra and attach on either side of the pubic symphysis.

On MRI imaging the TVT is visible between the urethra and vagina (a). Artefact from the tape is seen at the pubic symphysis (b, c).

Transvaginal Tape misplacement
The patient experienced sharp right groin pain immediately post-operatively. The pain was exacerbated by walking. After 18 months of conservative pain management, laparoscopic TVT removal was offered.

On MRI a subtle abnormality was demonstrated at the right obturator internus muscle (a, b).
Intraoperative laparoscopic image (c). The TVT (A) was placed in close proximity to the right obturator nerve and neurovascular bundle (B). The distal portion of the TVT was adherent to the pelvic side wall (C) close to the external iliac vessels (D). The tape was misplaced too laterally in the right obturator internus muscle. The patient's symptoms resolved 2 months after the removal of the TVT.

Hysteropexy mesh
The mesh is inserted at the sacral promontory at the L5/S1 junction (a). It loops around the uterus at the uterocervical junction and lifts it superiorly. On the coronal view (b), the mesh can be seen in expected position inferiorly to the uterus.

Conclusion
Mesh products continue to make the news due to their side effects, the weak evidence with which they were approved and currently should not be performed due to an NHS England period of high vigilance restriction. Radiologists need to be aware of the complications seen from pelvic mesh surgery and ectopic locations of meshes due to migration and erosion from products inserted over the past 20 years.

References
https://www.bmj.com/content/350/bmj.i2685
https://bmjopen.bmj.com/content/bmjopen/7/12/e017125.full.pdf
https://www.ncbi.nlm.nih.gov/pmc/articles/PMC3125625