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SURGICAL MANAGEMENT OF MESH-RELATED COMPLICATIONS AFTER PRIOR PELVIC FLOOR RECONSTRUCTIVE SURGERY WITH MESH.

Hypothesis / aims of study

Mesh is successfully used in pelvic floor reconstructive surgery to treat pelvic organ prolapse (POP) and stress urinary incontinence (SUI). However, when complications arise they may be severe in nature [1,2] and require partial or complete mesh excision.

The aim of this study was to evaluate the surgical treatment of mesh-related complications with regard to complications, and anatomical and functional outcome.

Study design, materials and methods

Retrospective cohort study (2005-2010) including 73 patients from the gynaecology department of our centre who underwent surgical mesh excision to treat complications after prior mesh-augmented pelvic floor reconstructive surgery. Patients with voiding dysfunction after insertion of a suburethral sling were excluded, as we regarded this a complication more specific for SUI surgery than for vaginal mesh in general. Data were extracted from paper and electronic medical records. Patients who underwent partial mesh excision were compared to patients who underwent, intentional, complete mesh excision. The various routes of the mesh insertion (sacrocolpopexy, vaginal POP repair, suburethral sling) were also assessed.

Results

Of the included 73 patients two patients underwent two excisions for different meshes in different compartments, resulting in 75 individuals for analysis. These 75 patients underwent overall 81 operations, 30 complete and 51 partial mesh excisions.

The frequency of presenting symptoms and signs, and the distribution between different types of mesh insertion procedure are presented in the following table:

	All N = 75	Sacrocolpopexy n = 12 (16%)	Vaginal POP repair n = 48 (64%)	Suburethral slings n = 15 (20%)	*P*-value
Mesh exposure	57 (76)	11 (92)	34 (71)	12 (80)	0.294
Vaginal bleeding	19 (25)	9 (75)	8 (17)	2 (13)	<0.001
Vaginal discharge	28 (37)	10 (83)	16 (33)	2 (13)	0.001
Dyspareunia	42 (56)	2 (17)	31 (65)	9 (60)	0.011
Pain (vaginal pain and/or chronic pain)	48 (64)	3 (25)	34 (71)	11 (73)	0.009
Severe mesh complications	15 (20)	1 (8)	13 (27)	1 (7)	0.123

Mesh exposures were mostly (90%) localized in the vaginal wall, three in the bladder, two patients had a vesicovaginal fistula and one patient had a rectovaginal fistula. Most women reported more than one mesh-related symptom. Dyspareunia and pain, which could exist of vaginal pain, chronic pain in the abdomen, back, buttock or leg, or a combination of these, were present in the majority of cases (77%). Severe mesh complications (contraction, displacement, chronic inflammation, infection, granuloma) were present in 15 patients (20%). A distinct difference in frequency of mesh-related symptoms existed between the different types of mesh insertion procedure, especially in sacrocolpopexy compared to the other procedures.

Patients with severe mesh complications, patients with exposure in the bladder or fistula and patients that had had a previous mesh excision underwent more often complete mesh excision compared to patients who did not have these serious complications (73% vs 27%, *P*=0.001, 83% vs 29%, *P*=0.017, 73% vs 21%, *P*<0.001 respectively).

Intraoperative complications occurred in 4 surgical procedures, one (2%) after partial excision, three (10%, *P*=0.141) after complete excision. Three patients had a bowel lesion, which occurred during abdominal mesh excision for previous sacrocolpopexy. One patient had bilateral ureter lesion, which occurred during one of the first complex complete excisions of vaginal mesh. Postoperative complications occurred after 13 surgical procedures, 5 (10%) after partial excision and 8 (27%, *P*=0.062) after complete excision.

Complications were more common in the group with former sacrocolpopexy: intraoperative complications occured in 23% (vs 1%, *P*=0.001) and only during abdominal excision, postoperative complications occured in 46% (vs 12%, *P*=0.003).

Outcomes of mesh excision are shown in the following table:

	All N = 75	Partial excision n = 48 (64%)	Complete excision n = 27 (36%)	*P*-value
Relief of mesh related symptoms	69 (92)	43 (90)	26 (96)	0.410
Recurrence of POP	9 (12)	3 (6)	6 (23)	0.061
Recurrence of POP (POP mesh only, n=60)	8 (14)	2 (5)	6 (29)	0.019

De novo SUI	9 (12)	5 (11)	4 (15)	0.712
De novo SUI (suburethral slings only, n=15)	5 (36)	4 (50)	1 (17)	0.301
Need of re-excision	6 (8)	6 (13)	0 (0)	0.082

Symptom relief was achieved in most patients, 5 of 6 patients with no relief of symptoms had undergone a partial excision. Recurrence of POP was more frequent after complete excision of mesh used in POP surgery. De novo SUI occurred in 36% of patients who underwent excision of a suburethral sling.

Interpretation of results

There is a great variety of mesh-related complications, which present differently after sacrocolpopexy and vaginal mesh insertion. Excision of mesh to treat these complications effectively improved symptoms. Although complications do not occur frequently, serious complications may be associated with more extensive or complex surgery. Recurrence of POP occurs frequently after complete excision of mesh used in POP repair surgery. De novo SUI occurs frequently after excision of a suburethral sling.

Concluding message

Mesh insertion but also excision can lead to serious complications. Complete mesh excisions, especially when there is involvement of bladder or rectum, should be performed in skilled hands in cooperation with urologists or colorectal surgeons. Checking the ureters by cystoscopy after all cases involving any anterior vaginal walll or bladder dissection to avoid reoperation for ureteric complications should be considered. Partial excision is prefered in more straightforward cases of mesh exposure with relatively mild symptoms. Complete excision should be reserved for patients with more serious complaints and severe mesh-related complications because of the higher risk of surgical complications and recurrence of POP.

References

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Was this study approved by an ethics committee?	**No**
This study did not require ethics committee approval because	**In accordance with Dutch law, retrospective observational studies are exempt from submission for approval to a medical ethics committee.**
Was the Declaration of Helsinki followed?	**Yes**
Was informed consent obtained from the patients?	**No**