Effects of vaginal prolapse surgery and ageing on vaginal vascularization
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CHAPTER 2

The effects of vaginal prolapse surgery using synthetic mesh on vaginal wall sensibility, vaginal vasocongestion, and sexual function: a prospective single-center study

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ABSTRACT

Introduction. Vaginal mesh surgery in patients with pelvic organ prolapse (POP) has been associated with sexual dysfunction. Implantation of synthetic mesh might damage vaginal innervation and vascularization, which could cause sexual dysfunction.

Aim. We aim to evaluate the effects of vaginal mesh surgery on vaginal vasocongestion and vaginal wall sensibility in patients with recurrent POP.

Methods. A prospective study was performed among patients with previous native tissue repair, scheduled for vaginal mesh surgery. Measurements were performed before and 6 months after surgery, during nonerotic and erotic visual stimuli, using a validated vaginal combi-probe.

Main outcome measures. The combi-probe involves vaginal photoplethysmography to assess Vaginal Pulse Amplitude (VPA) (representing vaginal vasocongestion) and four pulse-generating electrodes to measure vaginal wall sensibility (representing vaginal innervation). Sexual function was assessed using validated questionnaires (Female Sexual Function Index, Female Sexual Distress Scale-Revised, and Subjective sexual arousal and affect questionnaire).

Results. Sixteen women were included, 14 completed the 6-month follow-up visit. Vaginal vasocongestion under erotic conditions did not significantly alter after mesh implantation. Vaginal wall sensibility of the distal posterior wall was significantly increased after mesh surgery (preoperative threshold 6.3 mA vs postoperative 3.4 mA, \( P=0.03 \)). Sexual function as assessed with questionnaires was not significantly affected.

Conclusions. In women with a history of vaginal prolapse surgery, vaginal mesh surgery did not decrease vaginal vasocongestion or vaginal wall sensibility. Vaginal vasocongestion prior to mesh surgery appeared to be lower than that of women never operated on. Apparently, native tissue repair decreased preoperative vaginal vasocongestion levels to such extent that subsequent mesh surgery had no additional detrimental effect. Our findings should be interpreted cautiously. Replication of the findings in future studies is essential.
INTRODUCTION

Pelvic organ prolapse (POP) is a common health problem, as is expressed by a life time risk of 11% to undergo surgery (1). Thirty percent of these women will need surgery again because of prolapse recurrence (1). In case of prolapse recurrence, many pelvic reconstructive surgeons decide to perform vaginal mesh surgery based on evidence of lower rates of prolapse recurrence with equal dyspareunia rates (2, 3). Three studies assessed sexual function in women undergoing primary mesh surgery, using validated questionnaires (4-6). One observational study showed an improvement in sexual function at 6-month follow-up, which reached significance after 24 months (4). Sexual function after primary cystocele repair with or without the use of mesh, showed de novo dyspareunia in 3% of the mesh group in another study (5), and in a third study an improvement of sexual function was found in the native tissue repair group but not in the women with primary mesh (6). These findings may suggest that primary mesh surgery causes more damage to vaginal innervation and vasocongestion than native tissue repair, as sexual function depends on intact vaginal innervation and vasocongestion (7-9).

In 2011, the Food and Drug Administration (FDA) warned against potential detrimental effects of vaginal mesh surgery (10). One of the mentioned negative effects was the decline in sexual function after mesh surgery due to pain caused by exposure and contraction of the mesh.

We previously showed that native tissue repair negatively impacts levels of vaginal vasocongestion during sexual stimulation as well as vaginal wall sensibility in the cranial posterior vaginal wall (11). Two hypotheses may be forwarded as to why vaginal vasocongestion and sensibility might be even more affected in patients undergoing mesh surgery than in women undergoing native tissue repair. First, vaginal mesh surgery involves the implantation of mesh into the vaginal wall, necessitating greater dissection of the vaginal epithelium. Second, local effects of the mesh may result in irritation of the vaginal wall or shrinkage of tissue surrounding the mesh.

To study the effect of vaginal mesh surgery on vaginal vasocongestion and vaginal wall sensibility, we conducted a prospective study, performing measurements before and after surgery, using a vaginal combi-probe. This combi-probe was developed by our group (11) and enables measurement of vaginal wall sensibility concurrent with Vaginal Pulse Amplitude (VPA).
Amplitude (VPA), which is a validated measure of vaginal vasocongestion (12). Ideally we would have performed this study in women never operated on, to specifically indicate damage done due to mesh implantation only. However, with the current FDA advice to use vaginal mesh only in patients with recurrent prolapse, our study did not include mesh repair for primary surgery.

We hypothesized that vaginal mesh surgery would negatively affect vaginal vasocongestion and vaginal wall sensibility in women undergoing mesh surgery for recurrent prolapse.

**METHODS**

*Participants*

Patients scheduled for vaginal mesh surgery were asked to participate in this study. Exclusion criteria were a history of sexual abuse or primary vaginismus, use of medication that negatively affects sexual wellbeing, diabetes mellitus, hypertensive disorders with vascular disease and presence of a depressive disorder. At the first visit or during a brief telephone interview, patients were screened for the presence of any of these exclusion criteria. Depressive symptoms were assessed using the Dutch adaptation of the Beck Depression Inventory-Short Form. Patients with total scores ≥14 (indicating major depression) were excluded (13, 14). Written informed consent was obtained prior to data collection. The study was approved by the Medical Ethics Committee of the Academic Medical Centre. Patients were paid a compensatory fee of €50.

*Study design*

We performed a single-centre prospective observational study. Participants underwent measurements before and six months after surgery. This post-operative period was chosen based on a study providing evidence that innervation damage can recover up to six months after a pelvic floor trauma (15).
Psychophysiological assessment
In the two psychophysiological laboratory sessions, vaginal innervation, vaginal vasocongestion, and sexual feelings and affect were measured under neutral and erotic stimulus conditions.

Vaginal innervation and vaginal vasocongestion
Vaginal innervation and vaginal vasocongestion were measured using the vaginal combi-probe (figure 1). This combi-probe, which is sized and shaped as a menstrual tampon and which can easily be inserted by the patient herself, includes vaginal photoplethysmography to assess Vaginal Pulse Amplitude (VPA) (representing vaginal vasocongestion), and four pulse-generating electrodes to measure vaginal wall sensibility (representing vaginal innervation). The photoplethysmography component of the probe consists of a light source and an optical sensor, which allows for measurement of phasic changes in vaginal vasocongestion in the peripheral vessels with every heartbeat. It is a reliable, specific, and sensitive measure, with increased amplitudes indicating increased vaginal vasocongestion (16). Four pulse-generating electrodes were used to assess vaginal wall sensibility. The electrodes were mounted on the probe at four different locations: 3 and 6 cm from the introitus in the midline on the anterior and posterior vaginal wall. These four electrodes separately provided a constant current stimulus which was gradually increased in intensity (0-100 mA) until the threshold of sensation was indicated by the patient. Higher values indicate a higher threshold of sensation and a diminished vaginal wall sensibility. The four locations were stimulated in a random order. Each measurement was repeated three times; the first measurement was not included in the analysis to allow the patient to become acquainted with the sensation of the stimulus and to limit the interval between sensation and response. Depth of the combi-probe and orientation of the light source were controlled by a device (a 9x2-cm persplex plate) attached to the cable within 5 cm of the optical sensor. Patients were instructed to insert the combi-probe such that the plate touched their labia. The probe and plate were sterilized in a solution of Cidex-activated glutaraldehyde (CidexOPA; Johnson and Johnson, Amersfoort, The Netherlands).
Figure 1 Combi-probe that enables simultaneous measurement of vaginal vasocongestion (LED and Opto sensor), vaginal sensibility (pulse-generating electrodes) and pelvic floor muscle strength (EMG). In this graphic representation, the dorsal pulse-generating electrodes are not visible, but their location is implied by the two thinner lines. In this study, EMG was not utilized.

Sexual feelings and affect

Subjective sexual arousal and affect questionnaire (SSAQ) was used (17). This questionnaire was designed to measure sexual feelings and affect after erotic stimulus exposure, consisting of five scales: sexual arousal, genital sensations, sensuality, positive affect, and negative affect. Each of 37 items was preceded by the sentence: “During the film, I felt:” after which a positive (e.g., pleasant), negative (e.g., worried), physical (e.g., genital pulsing or throbbing), or sexual (e.g., sexually aroused) experience was described. The items were measured on a 1 (not at all) to 7 (intensely) scale.
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Stimulus materials
Neutral and sexual film excerpts with sound were used. A 3-minute neutral film excerpt was taken from ‘Pearls of the Caribbean’. A 3-minute sexual film excerpt consisted of an erotic scene taken from an erotic film known to significantly increase vaginal vasocongestion and subjective sexual arousal, depicting foreplay, cunnilingus, and intercourse (‘One size fits all’ by Candida Royalle) (18). Two versions (A and B) were made containing comparable, but different, neutral and erotic film fragments. Half of the subjects were randomly allocated to version A for the presurgery test and version B for the postsurgery test. The other half was allocated to the stimulus versions in the reverse order.

Sexual function
1. The Female sexual Function Index (FSFI) was used. This validated questionnaire evaluating sexual function consists of six domain scores: desire, arousal, lubrication, orgasm, satisfaction, and pain (18). The total score range is 2-36, with higher scores indicating better sexual functioning. An FSFI total score of 26.55 was found to be the optimal cut-off score for differentiating women with and without sexual dysfunction (18). The psychometric quality of the Dutch version is as satisfactory as the original version (19). For women who are not sexually active, even though they may have a sexual partner, low FSFI total scores may be related to sexual inactivity rather than being indicative of sexual dysfunction (20). Therefore, for analyses with this measure, only scores of sexually active women are used. Because the desire domain consists of questions that can be answered by sexually active as well as sexually inactive women, analyses of this domain includes the scores of the sexually active and inactive women.

2. The Female Sexual Distress Scale-Revised (FSDS-R). This is a validated questionnaire consisting of 13 questions assessing the level of sexual problems-related distress (21). The total score range is 0-52, with higher scores indicating higher levels of sexual distress. Again, the psychometric quality of the Dutch version is as satisfactory as the original version (19).
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Procedure
Upon arrival in the laboratory, patients were asked to complete the FSFI and FSDS-R and were reminded of the details of the psychophysiological assessments. After the vaginal probe had been placed, baseline VPA was recorded while the patient watched the neutral film excerpt followed by the erotic film clip. The patient was asked to fill out the SSAQ after each fragment. After the last SSAQ the nonerotic film was continued to allow genital response to return to baseline. If after 2 minutes, genital response had not returned to baseline level, patients were asked to count backwards until baseline level was reached. Subsequently another 3-minute neutral film fragment was shown. After this neutral film fragment, the measurements of vaginal wall sensibility were performed.

Sample size
In a previous study using an electrode attached to the investigator’s finger to assess vaginal wall sensibility, a decrease in sensibility was found after vaginal hysterectomy combined with anterior and/or posterior colporraphy with an effect size of 0.30 (22). Another study in women who underwent proctocolectomy with ileo-anal pouch anastomosis, vaginal vasocongestion was found to be significantly decreased 6 months after surgery, with a median effect size of 0.25. With an alpha of 0.05, a power of 80% and an effect size of 0.25 a minimum of 18 patients is needed for the within subject effect (23).

Data reduction and statistical analyses
VPA was registered during the entire experiment. Data were entered into a computer program developed at the Department of Psychology, University of Amsterdam. After VPA artefact deletion, peak-to-through amplitude was calculated for each remaining pulse, averaged over 10-second epochs and converted to mV. Mean VPA values (VPAmean) for neutral and erotic film stimuli were computed by averaging peak-to-through amplitudes across the entire duration of each 3-minute film. VPAresponse was calculated by subtracting the participant’s VPAmean value during exposure to the erotic film stimulus, minus the participant’s VPAmean value of the preceding neutral film fragment.
Domain scores of the FSFI, the FSFI total score, the FSDS-R total score and SSAQ scale scores were calculated.

Pre- and postoperative VPAmean, vaginal sensation thresholds, SSAQ scores, FSFI domain and total scores, and the FSDS-R total score were compared using a Wilcoxon signed rank test for paired data. Medians and ranges are reported. To inspect possible increases over time in mean change in VPA response to erotic film exposure (VPAresponse), the 10-second VPA epochs were submitted to a 2 (pre- and post-operative) x 15 (change in response over time) repeated measures analysis of variance (ANOVA). Baseline characteristics were compared between participants and non-participants using an unpaired t-test in case data were normally distributed or by Mann-Whitney U-test in case data were not normally distributed. In case differences between categorical variables were tested for statistical significance, a χ² test was used.

RESULTS

In total, 54 women were asked to participate, of whom 16 women agreed (30% participation rate). Women refused participation because they did not want to be exposed to erotic film material (n=13) or did not want to be questioned about sexual function (n=9). Other patients declined because they felt that the study would take too much of their time (n=16). Fourteen women completed the six months follow-up visit. One woman decided not to have surgery and one woman did not wish to complete the 6-month follow-up visit for personal reasons. Baseline characteristics of the participants, including the performed mesh procedures, are shown in Table 1. Age and parity of the women that refused participation (median age 64 years [range 40 - 77 years], parity 2 [range 0 - 4]) were comparable to those of women that did participate (P=0.64; P=0.46, respectively). Body mass index (BMI) of the nonparticipants was significantly lower compared to the participants (BMI 25 kg/m2 [range 20 - 34], P <0.01).
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**Table 1** Patient characteristics and planned and previous procedures

<table>
<thead>
<tr>
<th></th>
<th>n=16</th>
</tr>
</thead>
<tbody>
<tr>
<td>BMI in kg/m²</td>
<td>28.1 [22.2-34.8]</td>
</tr>
<tr>
<td>Age in years</td>
<td>63.5 [47-73]</td>
</tr>
<tr>
<td>Parity (n)</td>
<td>2 [1-5]</td>
</tr>
<tr>
<td>Menopausal status</td>
<td></td>
</tr>
<tr>
<td>- Postmenopausal</td>
<td>15 (93.8)</td>
</tr>
<tr>
<td>- Premenopausal</td>
<td>0 (0.0)</td>
</tr>
<tr>
<td>- Unknown</td>
<td>1 (6.2)</td>
</tr>
<tr>
<td>Planned procedure</td>
<td></td>
</tr>
<tr>
<td>- Elevate Anterior</td>
<td>10 (62.5)</td>
</tr>
<tr>
<td>- Elevate Posterior</td>
<td>6 (37.5)</td>
</tr>
<tr>
<td>Previous prolapse procedures</td>
<td></td>
</tr>
<tr>
<td>- Anterior colporrhaphy (AC)</td>
<td>3 (18.8)</td>
</tr>
<tr>
<td>- Vaginal hysterectomy (VH)</td>
<td>3 (18.8)</td>
</tr>
<tr>
<td>- AC + Sacro-spinous ligament fixation</td>
<td>3 (18.8)</td>
</tr>
<tr>
<td>- AC + Posterior colporrhaphy</td>
<td>4 (25.0)</td>
</tr>
<tr>
<td>- VH + AC + PC</td>
<td></td>
</tr>
</tbody>
</table>

Values are median [range] or n (%)

**Vaginal wall sensibility**

Sensation thresholds before and after surgery are shown in Table 2. After surgery, a statistical significant decrease in sensation threshold was found in the distal posterior vaginal wall, indicating increased vaginal wall sensibility (6.3mA vs 3.4mA, P=0.03).

Significant differences in thresholds at the other locations were not observed.

**Table 2** Pre- and postoperative median vaginal sensation thresholds (in mA)

<table>
<thead>
<tr>
<th></th>
<th>Pre-operative (n=16)</th>
<th>Post-operative (n=14)</th>
<th>P value</th>
</tr>
</thead>
<tbody>
<tr>
<td>Proximal posterior wall</td>
<td>17.4 [4.7-77.6]</td>
<td>18.8 [3.1-99.9]</td>
<td>0.66</td>
</tr>
<tr>
<td>Proximal anterior wall</td>
<td>23.2 [3.1-64.9]</td>
<td>17.1 [4.3-89.5]</td>
<td>0.22</td>
</tr>
<tr>
<td>Distal posterior wall</td>
<td>6.3 [1.8-11.6]</td>
<td>3.4 [1.7-11.8]</td>
<td>0.03</td>
</tr>
<tr>
<td>Distal anterior wall</td>
<td>4.7 [2.5-18.3]</td>
<td>3.9 [2.3-13.0]</td>
<td>0.40</td>
</tr>
</tbody>
</table>

Numbers are median [range]
Effects of mesh surgery on vaginal physiology

**Vaginal vasocongestion**

VPA_{mean} values during neutral film were not significantly lower postoperatively (median 0.9 mV [range 0.4-1.9 mV]) than pre-operatively (median 1.4 mV [range 0.3-2.6 mV]) (P=0.06). The repeated measures ANOVA showed a significant increase in VPA_{response} as the erotic film progressed (P<0.01), but this increase was similar pre- and post-operatively (P=0.94) (Figure 2).

![Figure 2](image)

**Figure 2** Pre- and postoperative mean increase in vaginal pulse amplitude (VPA) response during erotic visual stimuli relative to preceding neutral film

**Sexual function**

Pre-operatively, nine of 16 patients were not sexually active. Post-operatively, six patients reported not being sexually active, these six patients were also sexually inactive before surgery. Table 3 shows the results of the FSFI before and after surgery for sexually active women. No statistical significant differences were noted for all domains.

For the total study population (including sexually inactive women), only pre- and post-operative FSFI desire domain scores and FSDS-R scores were compared because these questions can be answered by sexually active as well as sexually inactive women.
No statistical significant differences were found (FSFI desire median score 3.0 vs 2.7 [P=0.16], FSDS-R median score 15 vs. 6 [P=0.27]). Subjective sexual arousal and affect after erotic film viewing were found to be unaffected by surgery, pre- and post-operative values of the five scales of the SSAQ did not differ significantly, and all P-values were above 0.1.

### Table 3 Pre- and post-operative Female Sexual Function Index (FSFI) domain- and total scores and the Female Sexual Distress Scale-Revised (FSDS-R) total score for the total study group and for the subgroup of sexually active patients.

<table>
<thead>
<tr>
<th></th>
<th>Pre-operative</th>
<th>Post-operative</th>
<th>P value*</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Sexually active (n=7)</td>
<td>Sexually active (n=6)</td>
<td>Sexually active</td>
</tr>
<tr>
<td>FSFI domain scores</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>- Desire</td>
<td>3.0 [2.4-5.4]</td>
<td>2.7 [1.2-4.2]</td>
<td>0.16</td>
</tr>
<tr>
<td>- Arousal</td>
<td>3.3 [2.4-5.7]</td>
<td>3.6 [1.8-6.0]</td>
<td>0.58</td>
</tr>
<tr>
<td>- Lubrication</td>
<td>3.9 [2.1-6.0]</td>
<td>4.2 [2.1-6.0]</td>
<td>0.72</td>
</tr>
<tr>
<td>- Orgasm</td>
<td>5.6 [1.2-6.0]</td>
<td>5.2 [1.2-6.0]</td>
<td>0.10</td>
</tr>
<tr>
<td>- Satisfaction</td>
<td>4.8 [3.2-6.0]</td>
<td>5.0 [1.6-6.0]</td>
<td>1.0</td>
</tr>
<tr>
<td>- Pain</td>
<td>5.2 [2.8-6.0]</td>
<td>6.0 [4.4-6.0]</td>
<td>0.07</td>
</tr>
<tr>
<td>FSFI Total Score</td>
<td>25.3 [14.1-34.2]</td>
<td>27.0 [15.0-33.9]</td>
<td>0.46</td>
</tr>
<tr>
<td>FSDS-R Total Score</td>
<td>10.0 [5.0-38.0]</td>
<td>3.5 [0.0-38.0]</td>
<td>0.11</td>
</tr>
</tbody>
</table>

Numbers are median [range]
*P values comparing pre- and post-operative values
Note: For the FSFI, lower scores indicate worse sexual functioning. For the FSDS-R, lower scores indicate less sexual distress

### DISCUSSION

This is the first study that assessed the effects of vaginal mesh surgery on vaginal wall sensibility and vaginal vasocongestion. We could not show a significant effect of mesh implantation on vaginal vasocongestion. In our previous study, in which we used a similar design and methodology, vaginal prolapse surgery using native tissue repair significantly decreased vaginal vasocongestion after surgery (11).

Considering the fact that in the current study not only the vaginal wall was more extensively surgically traumatized relative to native tissue repair, but also implantation of
mesh behind the vaginal wall was performed, involving possible additional local effects of the mesh (e.g., irritation, shrinkage of tissue surrounding the mesh), we expected vaginal vasocongestion to decrease even more.

The fact that we could not show a decrease indicates that apparently, previous native tissue repair had decreased preoperative vaginal vasocongestion levels to such extent that subsequent mesh surgery had no additional detrimental effect. Indeed, in our earlier study in women who underwent native tissue prolapse surgery, preoperative median VPA\textit{mean} values during neutral and erotic film were higher (neutral film: 1.8 mV, range 0.6-6.4 mV; erotic film: 4.4 mV [1.0-14.6]) than in the present study (neutral film: 1.4 mV [0.3-2.6 mV], erotic film: 2.2 mV, [0.5-6.2]) (11). In addition, the preoperative median VPA\textit{mean} values in the current study were comparable with the postoperative median VPA\textit{mean} values in the previous study (during neutral film: 1.4 mV [0.3-2.6] preoperative in the mesh group vs. 1.3 mV [0.3-3.2] postoperative in the native tissue group; during erotic film: 2.2 mV [0.5-6.2] preoperative in the mesh group vs. 2.4 [0.7-13.0] postoperative in the native tissue group.

We observed a significant increase in vaginal wall sensibility in the distal posterior wall. This finding is not in line with three previous studies that showed a decrease in vaginal wall sensibility after surgery (11, 22, 24). When looking separately at women undergoing an Elevate Anterior or an Elevate Posterior procedure, we found that the increased vaginal wall sensibility was mainly present in the Elevate Anterior group. Perhaps implantation of mesh behind the anterior vaginal wall caused a different positioning of the probe on the posterior wall, resulting in a different sensation of the stimulus. This hypothesis suggests that vaginal wall sensibility measurements are difficult to interpret when used after vaginal mesh surgery.

Unfortunately, the number of sexually active women included in our study is too small to draw conclusions on sexual function. However, our findings are in line with previous, larger studies reporting on subjective sexual function after mesh surgery (2, 25). The design of our study does offer the unique opportunity to relate subjective and objective measurements. Considering the low pre-operative vaginal vasocongestion in our study group as compared with the native tissue group, we expected subjective sexual arousal and affect to also be lower (11). However, pre- and post-operative values of the
patients in our study scheduled for mesh implantation were comparable to the values in the group scheduled for native tissue repair. The lack of association between vaginal vasocongestion and subjective sexual function could again be due to the limited number of sexually active women included. An alternative explanation could be the multidimensionality of sexual function consisting of biological, physiological, psychological and interpersonal determinants, determinants that are not all accounted for in the used questionnaires.

There are some limitations in our study that need to be addressed. First, the small sample size may be responsible for not detecting an effect. Unfortunately, a high power study in this type of research is difficult to realize due to the high refusal rate associated with the invasive nature of the measurements. Moreover, after the FDA warning for mesh implantation it became nearly impossible to include patients. We performed an explorative interim analysis after recruitment of 75% of the intended number of patients. Based on the results of this analysis it became clear that the expected differences were not present. We decided to stop recruiting after a period of 20 months that ended in a study population of 16 patients. Second, the nature of this study may have introduced a volunteer bias, as it is known that patients willing to participate in a sexuality study have a more positive attitude towards sexuality and are more sexually active (26). If this bias is involved, actual vaginal vasocongestion and innervation in women who undergo native tissue as well as mesh prolapse surgeries may be even worse. Third, we used the FSFI questionnaire to quantify sexual function whereas the Pelvic Organ Prolapse/Urinary Incontinence Sexual Questionnaire (PISQ) is more specific for this population. At the moment we conducted this study the revised PISQ was not yet validated in Dutch. The FSFI is a widely used and internationally accepted measure for sexual function (6). We used the FSFI in this study to allow comparison with our previous study. The disadvantage of using the FSFI is that scores of sexually inactive women are difficult to interpret, given that low scores may be indicative of sexual dysfunction, but may also be related to the sexual inactivity itself.

The strength of this study is that measurements of vaginal vasocongestion and vaginal wall sensibility were simultaneously performed, before as well as after mesh
surgery. This prospective design allows for detection of differences in vaginal innervation and vaginal vasocongestion related to mesh surgery.

In conclusion, we are the first to provide evidence that in women with a history of vaginal prolapse surgery, vaginal mesh surgery does not decrease vaginal vasocongestion or vaginal wall sensibility. Vaginal vasocongestion was poor prior to mesh surgery as compared to women never operated on. Apparently, previous native tissue repair decreased pre-operative vaginal vasocongestion levels to such extent that subsequent mesh surgery had no additional detrimental effect. Our findings should be interpreted cautiously. Replication of the findings in future studies (even though such data are difficult to acquire) is essential.
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References

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