

# National Survey on the Management of Genital Prolapse in Italy

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**Purpose:** Surgical repair is considered the mainstay of genital prolapse management. Several procedures are available both by vaginal and abdominal route, with and without mesh augmentation. The Italian UroGynecology Association (AIUG) promoted this survey with the aim of evaluating current variations in the surgical management of various types of prolapse in different clinical settings and to compare practice amongst practitioners working in high- and medium/low-volume centers.

**Participants and Methods:** The questionnaire examined four contentious areas of contemporary prolapse management. The questionnaire was emailed to the AIUG gynecologist members in Italy in 2023.

**Results:** A total of 104 complete responses were received, resulting in a 6.9% response rate. Native-tissue repair represents the preferred option in most scenarios and was proposed by 76%, 68.3%, 94.2%, and 52.9% of practitioners in the case of primary anterior, uterovaginal, posterior, and vault prolapse respectively. The use of vaginal mesh in these scenarios is very limited. Native tissue repairs in case of recurrent anterior, posterior, or apical recurrent prolapse would be performed only by 37.5%, 47.1%, and 28% of surgeons respectively. In these cases, the use of mesh - by vaginal and abdominal route - increased significantly.

**Conclusion:** This survey showed that in Italy surgical management of genital prolapse is very heterogeneous. Native-tissue repair remains the preferred option, but practitioners tend to lose confidence in mesh-free procedures in case of prolapse recurrence. Despite mesh kits recalls and recommendations, the use of transvaginal implants is still considered an option for prolapse repair.

**Keywords:** pelvic floor, pelvic organ prolapse, survey, surgery, management, urogynecology

## Introduction

Pelvic organ prolapse (POP) is a condition related to the descent of the uterus, bladder, rectum, and/or bowel through the vagina. It is a worldwide public health issue and one of the most frequent findings in patients seeking care for pelvic floor symptoms.<sup>1</sup> Factors associated with POP development and recurrence involve vaginal delivery, chronic increased abdominal pressure, altered collagenic patterns, and previous pelvic floor surgery.<sup>2-4</sup> Prolapse may be asymptomatic - especially in early stages - or associated with bladder, bowel, and sexual dysfunctions.<sup>5</sup> Management includes both conservative and surgical options according to POP severity, associated symptoms, and the patient's general health and wishes.<sup>6</sup> However, surgical repair is considered the mainstay of genital prolapse management, and it is recommended in case of conservative management fails. Several procedures are available to achieve prolapse repair both by vaginal and abdominal route, with and without mesh augmentation.<sup>7,8</sup> This involves widespread variations in practice in the conservative and surgical management of prolapse in Italy. For example, a retrospective cohort study focused on variation in surgical procedures for POP among Tuscan health districts and on hospital care quality in terms of reoperations, complications and length of stay. The authors found that patients and clinicians' preference may be the

main determinants of regional variation. For instance, patients could choose to be operated in a hospital offering surgical services which are perceived to be of higher quality, like minimally invasive interventions.<sup>9</sup> Moreover, trends are changing worldwide in light of the recent publications on vaginal mesh usage and the introduction of laparoscopic and uterine-sparing procedures.<sup>10–12</sup> Moreover, there is a renewed interest in native-tissue techniques involving ligamentous or muscular structures due to lower costs and lack of mesh-related complications.<sup>13–16</sup>

Consequently, the Italian UroGynecology Association (AIUG) decided to promote this survey, in which pelvic floor healthcare providers in Italy were presented with four clinical scenarios dealing with the management of prolapse. The objective was to gain insight into current variations in the surgical management of various types of prolapse in different clinical settings and to compare practice amongst practitioners working in high- and medium/low-volume centers.

## Materials and Methods

This survey represented a voluntary review of clinicians' practice, hence it was considered exempt from the local Ethics Committee formal approval. In addition, consent to anonymously use the information provided was obtained in the questionnaire from the respondents. The questionnaire represented an Italian readjusted version of a previously published questionnaire developed by Jha and Moran for a 2006 UK survey.<sup>17</sup> Once the questionnaire was developed it was subjected to a pilot group. The first draft was revised to identify items that might be confusing or misinterpreted, and the final version was developed. The final document was a four-page questionnaire that contained questions on four case scenarios, which examined contentious areas of contemporary prolapse management ([Supplementary Material 1](#)). Clinical scenarios assessed the management of anterior vaginal wall prolapse (Scenario 1), uterine prolapse in conjunction with anterior vaginal wall prolapse (Scenario 2), posterior wall prolapse (Scenario 3), and vaginal vault prolapse (Scenario 4). In Scenario 2, a particular focus was given to the role of uterine preservation in patients receiving surgery for uterine prolapse. The survey also assessed practitioner profile, including professional role, type of center, and mesh usage. Center types were defined as follows: more than 80 prolapse operations per year as high-volume; less than 80 prolapse operations per year as medium/low-volume (grouped together due to the low number of responders working in low-volume centers, originally defined as less than 40 prolapse operation per year). The questionnaire was emailed with permission by the Italian Association of Urological Gynecology and Pelvic Floor (AIUG) to their gynecologist members in Italy in 2023. A cover letter describing the objectives of the study accompanied the questionnaire. After 1 month, a further Email was sent to non-respondents. Moreover, an invitation to participate at the survey with QR code was projected multiple times during the yearly national society meeting to increase participation. Data were collected anonymously to improve participation and appropriateness of answers. All fields were compulsive, meaning that responders were not allowed to leave missing data.

Statistical analysis was performed using JMP software version 9.0 (SAS, Cary, NC, USA). The analysis was performed by looking at the overall percentage response to each question. The responses between high-, medium/low-volume center practitioners and between different scenarios (eg first surgery versus recurrence) were compared using the chi-square test, and P-values were calculated to determine if the difference in the response was statistically significant. A  $p < 0.05$  was set as statistically significant.

## Results

### Responders Profile

Of the 416 questionnaires that were mailed to active members, a total of 104 complete responses were received, resulting in a 25% response rate. Forty-seven (45.2%) practitioners worked in high-volume centers, while 57 (55.8%) in medium/low-volume centers.

### Scenario I - Anterior Vaginal Wall Prolapse

A 45-year-old woman presented with an isolated cystocele (Aa 0, Ba 0) and no substantial support defects of the apical and posterior compartments. She had a silent general clinical history and had completed childbirth. She has bulging symptoms and conservative management has previously failed. The procedures of choice are presented in [Table 1](#). The

**Table 1** Scenario 1: Procedures of Choice in Case of Primary and Recurrent Anterior Compartment Prolapse

|                           | <b>Primary Anterior Prolapse</b> | <b>Recurrent Anterior Prolapse</b> |
|---------------------------|----------------------------------|------------------------------------|
| Anterior repair           | 79 (76%)                         | 34 (32.7%)                         |
| Paravaginal repair        | 5 (4.8%)                         | 5 (4.8%)                           |
| Synthetic mesh            | 5 (4.8%)                         | 31 (29.8%)                         |
| Biologic mesh             | 2 (1.9%)                         | 6 (5.8%)                           |
| Sacropexy                 | 4 (3.8%)                         | 7 (6.7%)                           |
| Lateral suspension        | 2 (1.9%)                         | 1 (1.0%)                           |
| Other                     | 7 (6.7%)                         | 4 (3.8%)                           |
| Send to a referral center | –                                | 16 (15.4%)                         |

majority of practitioners (76%) would perform a native-tissue anterior repair, while transvaginal implants would be preferred by 6.7% of clinicians for primary repair. However, in the case of recurrent anterior prolapse, the use of transvaginal implants significantly increased from 6.7% to 35.6% ( $p<0.001$ ), while native-tissue approaches decreased from 80.8% to 37.5% ( $p<0.001$ ). Moreover, 15.4% of practitioners would refer the patient to a tertiary center.

In case the patient complained of pure stress urinary incontinence - confirmed by urodynamic assessment - The majority of practitioners (60.6%) would avoid adding a concomitant anti-incontinence procedure, while 36.5% of clinicians would have performed, and the remaining 2.9% were uncertain. If the woman was aged 30 years, requested surgery, and wished to retain her fertility, 64.4% of gynecologists would advise family completion before surgery, and an additional 12.5% of practitioners defined themselves as uncertain about proposing surgery.

No differences were found between high- and medium/low-volume center practitioners in terms of preferred procedures for primary repair, and approach to concomitant stress incontinence patients and young patients wishing to retain fertility. However, medium/low-volume center practitioners were more likely to use transvaginal mesh ( $p=0.018$ ) and less likely to use transabdominal mesh ( $p=0.003$ ) compared to high-volume center clinicians.

## Scenario 2 - Uterine Prolapse

A 65-year-old woman presented with a cystocele (Aa 0; Ba +1) and uterine descent (C +1; D-3), with no significant posterior compartment prolapse. Normal cervical aspect and negative smear test. She has bulging symptoms but no substantial urinary dysfunctions. conservative management has previously failed.

The procedures of choice are shown in [Table 2](#). The majority of practitioners (68.3%) would perform a vaginal hysterectomy plus native-tissue repair, while transabdominal implants (either sacropexy or lateral suspension) would be preferred by 24% of clinicians for primary repair, and only 1.9% would use transvaginal mesh.

If the woman was aged 35 years, wished to retain her fertility, and conservative measures had failed, 33.6% of practitioners would advise family completion before surgery or define themselves as uncertain about proposing surgery. On the contrary, 33.6% of practitioners would offer native-tissue hysteropexy (mostly by vaginal route), while 27.9% would propose either lateral suspension or sacrohysteropexy.

When asked about their perception of uterine sparing surgery for uterine prolapse, most of the practitioners (69.2%) answered that they do not consider these techniques as routinary. Specifically, only 18.3% of clinicians would consider uterine preservation for menopausal women, while 43.3% of practitioners would offer hysteropexy to premenopausal women with no more childbearing desire and 69.2% to patients looking for pregnancy. No differences were found between high- and medium/low-volume center practitioners in terms of preferred procedures for uterine prolapse management or perception about uterine-sparing surgical options.

**Table 2** Scenario 2: Procedures of Choice, in Case of Primary Uterine Prolapse in a Postmenopausal Woman

|   | <b>Primary Uterine Prolapse</b> |
|---|---------------------------------|
| Vaginal hysterectomy plus native tissue repair      | 71 (68.3%)                      |
| Laparoscopic hysterectomy plus native tissue repair | 3 (2.9%)                        |
| Transvaginal native tissue hysteropexy              | 1 (1.0%)                        |
| Subtotal hysterectomy plus sacropexy                | 15 (14.4%)                      |
| Hysterosacropexy                                    | 4 (3.8%)                        |
| Laparoscopic lateral suspension                     | 6 (5.7%)                        |
| Transvaginal mesh                                   | 2 (1.9%)                        |
| Other   | 2 (1.9%)                        |

### Scenario 3 - Posterior Vaginal Wall Prolapse

A 48-year-old woman presented with an isolated rectocele (Ap 0; Bp 0), bulging symptoms but no bowel or sexual dysfunction. She had a silent general clinical history and had completed childbirth. Conservative management has previously failed.

The procedures of choice are presented in [Table 3](#). The majority of practitioners (94.2%) would perform a native-tissue posterior repair, while 1.9% would perform transvaginal implants. However, in the case of recurrent posterior prolapse, the use of transvaginal implants significantly increased from 1.9% to 16.3% ( $p < 0.001$ ), while native-tissue approaches decreased from 94.2% to 47.1% ( $p < 0.001$ ). Moreover, 24.0% of practitioners would refer the patient to a tertiary center. Interestingly, only 26.0% of responders considered sexual activity as a critical factor in defining the surgical approach. No differences were found between high- and medium/low-volume center practitioners in terms of preferred procedures for primary or recurrent repair.

### Scenario 4 - Vaginal Vault Prolapse

A 56-year-old woman presented with symptomatic post-hysterectomy prolapse (Ba, C, Ap =0). Hysterectomy was performed for fibroids (no previous prolapse). No urinary or bowel symptoms. She had a silent general clinical history. Conservative management has previously failed. The procedures of choice are presented in [Table 4](#). The majority of

**Table 3** Scenario 3: Procedures of Choice in Case of Primary and Recurrent Posterior Compartment Prolapse

|                                 | <b>Primary Anterior Prolapse</b> | <b>Recurrent Anterior Prolapse</b> |
|---------------------------------|----------------------------------|------------------------------------|
| Posterior repair                | 86 (82.7%)                       | 49 (47.1%)                         |
| Levator ani myorrhaphy          | 12 (11.5%)                       | 0                                  |
| Synthetic mesh                  | 1 (1.0%)                         | 14 (13.5%)                         |
| Biologic mesh                   | 1 (1.0%)                         | 3 (2.9%)                           |
| Sacropexy                       | 0                                | 3 (2.9%)                           |
| Laparoscopic lateral suspension | 0                                | 1 (1.0%)                           |
| Other                           | 4 (3.8%)                         | 9 (8.7%)                           |
| Send to a referral center       | –                                | 25 (24.0%)                         |

**Table 4** Scenario 4: Procedures of Choice in Case of Vaginal Vault Prolapse After Hysterectomy for Fibroids or Prolapse Indication

|                                   | Previous Hysterectomy for Fibroids | Previous Hysterectomy for Prolapse |
|-----------------------------------|------------------------------------|------------------------------------|
| Transvaginal native tissue repair | 55 (52.9%)                         | 25 (24.0%)                         |
| Synthetic mesh                    | 2 (1.9%)                           | 4 (3.8%)                           |
| Biologic mesh                     | 0                                  | 1 (1.0%)                           |
| Sacropexy                         | 35 (33.7%)                         | 60 (57.7%)                         |
| Laparoscopic lateral suspension   | 7 (6.7%)                           | 9 (8.7%)                           |
| Other                             | 1 (1.0%)                           | 5 (4.8%)                           |
| Send to a referral center         | 4 (3.8%)                           | 0                                  |

practitioners (52.9%) would perform a vaginal native-tissue repair, while 40.4% would perform transabdominal implants (either sacropexy or lateral suspension), and 1.9% would use transvaginal mesh. However, if hysterectomy was previously performed for prolapse repair native tissue repair would drop from 52.9% to 28.8% ( $p<0.001$ ), transabdominal implants would rise from 40.4% to 66.3% ( $p<0.001$ ), and 4.8% would use transvaginal mesh. No differences were found between high- and medium/low-volume center practitioners in terms of preferred procedures for vault repair. However, medium/low-volume center practitioners were more likely to use a transabdominal mesh ( $p=0.031$ ) compared to high-volume center clinicians in case of previous prolapse surgery.

## Discussion

This is the first national Italian survey of practice looking at differences in the surgical management of prolapse amongst practicing consultants. It is also the first survey to compare practice among gynecologists performing POP surgery with different levels of expertise. This study provided precious insight into surgical procedures currently used to treat pelvic organ prolapse in Italy. This is particularly relevant considering that in every field of medicine, the current practice is a constantly changing entity according to new evidence, recommendations, and guidelines. The relatively poor response rate is consistent with previous similar surveys.<sup>17–20</sup> This could be explained by the fact that the questionnaire was sent to all AIUG gynecologists, including those not performing pelvic floor surgery. In addition, respondents may have been deterred by the length and complex design of the questionnaire. However, we chose not to simplify the questionnaire to maintain a valuable look into the complexity of the surgical clinical practice. Moreover, since 104 completed responses were received, we do think this survey is still likely to give a good picture of the surgical trends amongst those performing pelvic floor surgery. Another limitation that we must account involves the modifications - even if minimal - to the original version of the questionnaire. This was a hard choice, but we decided to adapt the original questionnaire from 2006 to the actual and local clinical practice. Still, we believe that due to the maintained structure of the four scenarios (anterior vaginal wall prolapse, uterine prolapse in conjunction with anterior vaginal wall prolapse, posterior wall prolapse, and vaginal vault prolapse), comparisons in clinical practice with reference papers from other countries are possible.

According to the results of this survey, surgical management of prolapse amongst Italian gynecologists with a special interest in pelvic floor medicine shows substantial variability and appears based on individual preferences rather than the center's characteristics. Talking about variation in elective surgery, according to Weenberg's study, individual preferences may relate to surgical training and background of surgeons or they may relate to patients' preferences, for example how and where to be treated. Wennberg stated that variation needs to be reduced when driven by surgeons' attitudes and beliefs or resource allocation, as they conflict with the increasingly emerging patient-centred medical approach while should be maintained when depending on patient preferences.<sup>21</sup> For this purpose, a recent Italian survey-study aimed to

identify determinants influencing women's choice when asked whether they prefer surgical or conservative POP management. The presence of a trusted physician during hospitalisation, surgery with low complication rates, uterine-sparing surgery, no postoperative abdominal scars and nearby hospital, significantly increasing the chance of choosing surgery. So, authors concluded that these findings, providing new evidence to better understand women's decision-making, could be useful to health professionals during patients' counselling.<sup>22</sup>

Overall surgical practices in the management of POP amongst gynaecologists working in high-volume centers varied minimally compared to clinicians working in medium- or low-volume centers and differences were limited to the use of mesh for the management of anterior and vault vaginal prolapse.

However, according to the results of the survey, we were able to define some trends in our national surgical practice. Native-tissue repair represents the preferred option in most scenarios. In particular, native tissue repair was proposed by 76%, 68.3%, 94.2%, and 52.9% of practitioners in the case of primary anterior, uterovaginal, posterior, and vault prolapse respectively. These findings are consistent with ones from similar surveys about surgical practice in the UK, Australia, and New Zealand.<sup>18,20</sup> Notably, the use of vaginal mesh in these scenarios is very limited, ranging from 1.9% to 6.7%. This means that at least most practitioners have received FDA warnings about the risk and impact on quality of life of mesh-related complications and modified their clinical practice accordingly. However, practitioners tend to lose confidence in mesh-free procedures in case of prolapse recurrence and repeated treatments. Specifically, native tissue repairs in case of recurrent anterior, posterior, or apical recurrent prolapse would be performed only by 37.5%, 47.1%, and 28% of surgeons respectively. On the converse in these cases, the use of mesh - by vaginal and abdominal route - increased significantly. In particular, for a relevant rate of responders, the use of transvaginal implants is still considered the main option for any compartment recurrent prolapse repair.

Another controversy among pelvic floor surgeons regards the opportunity to perform a concomitant anti-incontinence procedure at the time of anterior prolapse repair in case of pure stress urinary incontinence - confirmed by urodynamic assessment. Possible approaches involve considering preoperative urodynamics and concomitant sling at the time of prolapse repair or instead opting for a staged approach and performing anti-incontinence surgery only if bothersome SUI develops postoperatively. According to our survey, in Italy, most practitioners would avoid a concomitant anti-incontinence procedure. This may reflect a cautious approach aimed to reduce complications and overtreatment. This topic is still very debated in the urogynecological community. A 2014 systematic review and meta-analysis showed that concomitant sling reduced postoperative SUI, but increased the risk of adverse effects and short-term voiding difficulty.<sup>23</sup> A validated risk calculator has previously been proposed to predict the likelihood of developing postoperative SUI, to provide an individualized estimate of the risk with or without concomitant midurethral sling at the time of a prolapse repair surgery.<sup>24</sup> However, the use of the calculator does not seem to affect patients' postoperative satisfaction with the decision regarding concomitant sling. This confirms the pivotal role of preoperative counseling - irrespective of the calculator tool - in clarifying surgical options, possible outcomes, and patients' perceptions and expectations.<sup>25</sup>

According to our survey, uterine preservation remains an issue among pelvic floor surgeons, with most of the practitioners (69.2%) answering that they do not consider these techniques as routinary. Recently, uterine-sparing surgical options have gained back popularity among patients and clinicians. These procedures are usually associated with shorter operative time, less blood loss, and faster return to activities compared with techniques that involve hysterectomy.<sup>26</sup> In the Italian survey-study analyzing determinants in women's decision-making, all those factors seems to influence women's choice when asked whether they prefer surgery or conservative treatments. Among those, a relevant determinant factor is also uterine sparing surgery's proposal.<sup>22</sup> Moreover, most of these procedures offer anatomical and subjective outcomes comparable with those of hysterectomy-based procedures, and contraindications are limited, such as increased risk of gynecological cancers, uterine abnormalities, post-menopausal bleeding, and inability to comply with routine gynecological surveillance.<sup>27</sup> Lastly, uterine preservation should be offered to women wishing to preserve fertility and may also be attractive for women concerned about the change in their body image and sexuality after hysterectomy despite the lack of evidence about any positive impact on female sexual function.

The latter piece of evidence brought by this survey regards exactly sexual function. Specifically, only 26.0% of responders considered sexual activity as a critical factor in defining the surgical approach. The relationship between pelvic floor disorders and sexual dysfunction is nowadays well-established, and we know that surgery may both involve



improvement or worsening / de novo onset of sexual dysfunction.<sup>5,28–30</sup> Still, there is a lack of adequate attention by healthcare professionals on this topic, considering that diagnosis and evaluation of sexual health are complex and often incomplete.<sup>31</sup> An increasing effort should be made by clinicians to improve the assessment and evidence-based management of these conditions, and the use of validated questionnaires (such as FSFI-19 and PISQ-12) should be encouraged to evaluate all domains of sexual well-being before and after prolapse treatment.<sup>32,33</sup>

To the best of our knowledge, this is the first study analyzing pelvic floor surgeons' practice in Italy. The main strength involves the division into four main scenarios (anterior vaginal wall prolapse; uterine prolapse in conjunction with anterior vaginal wall prolapse; posterior wall prolapse; and vaginal vault prolapse) that allowed a valuable look into the complexity of the surgical clinical practice. Moreover, we were able to evaluate some hot topics in the pelvic floor surgeons community, such as the impact of the volume of surgery, the management of concomitant SUI, and the perception of uterus-sparing procedures. Limitations involve the relatively poor response rate - which is however consistent with previous similar surveys - and the modifications to the original version of the questionnaire to adapt it to the local clinical practice. Moreover, being the questionnaire anonymous, we were not able to verify if participation of questionnaire was transversal in all the Country. It would be also interesting to monitor the evolution of surgical preferences during time with specific reference to new technologies such as robotic surgery or vaginal natural orifice transluminal endoscopic surgery (vNOTES) in which technology diffusion, supply of specialists, local training frameworks, financial incentives, and regulatory factors, might play a pivotal role.<sup>34</sup>

## Conclusion

Although we have observed a paradigm shift in the way we perform prolapse surgery in recent years, this survey showed that in Italy surgical management of genital prolapse is very heterogeneous. Still, in most scenarios, native-tissue repair remains the preferred option. However, practitioners tend to lose confidence in mesh-free procedures in case of prolapse recurrence. Notably, despite mesh kits recalls and recommendations, the use of transvaginal implants is still considered an option for prolapse repair. This is remarkable considering also the very recent European UroGynecological Association statement opinion on native-tissue repair.<sup>35</sup> Lastly, uterine-sparing procedures are not yet widespread, even in the case of young women with childbearing desires.

## Data Sharing Statement

The data that support the findings of this study are available from the corresponding author upon reasonable request.

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## Author Contributions

All authors made a significant contribution to the work reported, whether that is in the conception, study design, execution, acquisition of data, analysis and interpretation, or in all these areas; took part in drafting, revising or critically reviewing the article; gave final approval of the version to be published; have agreed on the journal to which the article has been submitted; and agree to be accountable for all aspects of the work.

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## References

- D'Alessandro G, Palmieri S, Cola A, Barba M, Manodoro S, Frigerio M. Correlation between urinary symptoms and urodynamic findings: is the bladder an unreliable witness? *Eur J Obstet Gynecol Reprod Biol.* 2022;272:130–133. doi:10.1016/j.ejogrb.2022.03.023
- Mant J, Painter R, Vessey M. Epidemiology of genital prolapse: observations from the Oxford family planning association study. *Br J Obstet Gynaecol.* 1997;104:579–585. doi:10.1111/j.1471-0528.1997.tb11536.x
- Manodoro S, Spelzini F, Cesana MC, et al. Histologic and metabolic assessment in a cohort of patients with genital prolapse: preoperative stage and recurrence investigations. *Minerva Ginecol.* 2017;69(3):233–238. doi:10.23736/S0026-4784.16.03977-0
- Deo G, Bernasconi DP, Cola A, et al. Long-term outcomes and five-year recurrence-free survival curves after native-tissue prolapse repair. *Int J Gynaecol Obstet.* 2019;147(2):238–245. doi:10.1002/ijgo.12938
- Milani R, Frigerio M, Cola A, Beretta C, Spelzini F, Manodoro S. Outcomes of transvaginal high uterosacral ligaments suspension: over 500-patient single-center study. *Female Pelvic Med Reconstr Surg.* 2018;24(1):39–42. doi:10.1097/SPV.0000000000000403
- Palmieri S, Cola A, Milani R, Manodoro S, Frigerio M. Quality of life in women with advanced pelvic organ prolapse treated with Gellhorn pessary. *Minerva Ginecol.* 2018;70(4):490–492. doi:10.23736/S0026-4784.18.04199-0
- Morciano A, Ercoli A, Caliendo D, et al. Laparoscopic posterior vaginal plication plus sacral colpopexy for severe posterior vaginal prolapse: a randomized clinical trial. *Neurourol Urodyn.* 2023;42(1):98–105. doi:10.1002/nau.25052
- Morciano A, Marzo G, Caliendo D, et al. Laparoscopic sacral colpopexy and a new approach to mesh fixation: a randomized clinical trial. *Arch Gynecol Obstet.* 2018;298(5):939–944. doi:10.1007/s00404-018-4916-0
- Ferrari A, Giannini A, Seghieri C, et al. Regional practice variation in pelvic organ prolapse surgery in Tuscany, Italy: a retrospective cohort study on administrative health data. *BMJ Open.* 2023;13(3):e068145. doi:10.1136/bmjopen-2022-068145
- Fleischer K, Thiagamoorthy G. Pelvic organ prolapse management. *Post Reprod Health.* 2020;26(2):79–85. doi:10.1177/2053369120937594
- Manodoro S, Braga A, Barba M, Caccia G, Serati M, Frigerio M. Update in fertility-sparing native-tissue procedures for pelvic organ prolapse. *Int Urogynecol J.* 2020;31(11):2225–2231. doi:10.1007/s00192-020-04474-3
- Cheon C, Maher C. Economics of pelvic organ prolapse surgery. *Int Urogynecol J.* 2013;24(11):1873–1876. doi:10.1007/s00192-013-2178-8
- Milani R, Frigerio M, Manodoro S. Transvaginal sacrospinous ligament fixation for posthysterectomy vaginal vault prolapse repair. *Int Urogynecol J.* 2017;28(7):1103–1105. doi:10.1007/s00192-016-3255-6
- Milani R, Frigerio M, Spelzini F, Manodoro S. Transvaginal iliococcygeus fixation for posthysterectomy vaginal vault prolapse repair. *Int Urogynecol J.* 2017;28(10):1599–1601. doi:10.1007/s00192-017-3315-6
- Milani R, Manodoro S, Cola A, Palmieri S, Frigerio M. Transvaginal levator myorrhaphy for posthysterectomy vaginal vault prolapse repair. *Int Urogynecol J.* 2018;29(6):913–915. doi:10.1007/s00192-017-3526-x
- Milani R, Frigerio M, Spelzini F, Manodoro S. Transvaginal uterosacral ligament suspension for posthysterectomy vaginal vault prolapse repair. *Int Urogynecol J.* 2017;28(9):1421–1423. doi:10.1007/s00192-017-3277-8
- Jha S, Moran PA. National survey on the management of prolapse in the UK. *Neurourol Urodyn.* 2007;26(3):325–331. doi:10.1002/nau.20331
- Vanspauwen R, Seman E, Dwyer P. Survey of current management of prolapse in Australia and New Zealand. *Aust N Z J Obstet Gynaecol.* 2010;50(3):262–267. doi:10.1111/j.1479-828X.2010.01145.x
- Jha S, Moran P. The UK national prolapse survey: 5 years on. *Int Urogynecol J.* 2011;22(5):517–528. doi:10.1007/s00192-011-1379-2
- Jha S, Cutner A, Moran P. The UK national prolapse survey: 10 years on. *Int Urogynecol J.* 2018;29(6):795–801. doi:10.1007/s00192-017-3476-3
- Wennberg JE. Time to tackle unwarranted variations in practice. *BMJ.* 2011;342(mar17 3):d1513. doi:10.1136/bmj.d1513
- Ferrari A, Bellè N, Giannini A, et al. Determinants of women's preferences for surgical versus conservative management for pelvic organ prolapse: a survey-based study from Italy. *BMJ Open.* 2024;14(7):e084034. doi:10.1136/bmjopen-2024-084034
- van der Ploeg JM, van der Steen A, Oude Rengerink K, et al. Prolapse surgery with or without stress incontinence surgery for pelvic organ prolapse: a systematic review and meta-analysis of randomised trials. *BJOG.* 2014;121(5):537–547. doi:10.1111/1471-0528.12509
- Jelovsek JE, Chagin K, Brubaker L, et al. Pelvic floor disorders network. A model for predicting the risk of de novo stress urinary incontinence in women undergoing pelvic organ prolapse surgery. *Obstet Gynecol.* 2014;123(2 Pt 1):279–287. doi:10.1097/AOG.0000000000000094
- Miranne JM, Gutman RE, Sokol AJ, Iglesia CB. Effect of a new risk calculator on patient satisfaction with the decision for concomitant midurethral sling during prolapse surgery: a randomized controlled trial. *Female Pelvic Med Reconstr Surg.* 2017;23(1):17–22. doi:10.1097/SPV.0000000000000339
- Ridgeway BM. Does prolapse equal hysterectomy? The role of uterine conservation in women with uterovaginal prolapse. *Am J Obstet Gynecol.* 2015;213(6):802–809. doi:10.1016/j.ajog.2015.07.035
- Barba M, Schivardi G, Manodoro S, Frigerio M. Obstetric outcomes after uterus-sparing surgery for uterine prolapse: a systematic review and meta-analysis. *Eur J Obstet Gynecol Reprod Biol.* 2021;256:333–338. doi:10.1016/j.ejogrb.2020.11.054
- Frigerio M, Barba M, Cola A, et al. Quality of life, psychological wellbeing, and sexuality in women with urinary incontinence—where are we now: a narrative review. *Medicina.* 2022;58(4):525. doi:10.3390/medicina58040525
- Frigerio M, Barba M, Palmieri S, et al. On the behalf of the urogynecology-pelvic floor working group (GLUP). prevalence and severity of sexual disorders in the third trimester of pregnancy. *Minerva Obstet Gynecol.* 2022.
- Serati M, Braga A, Scancarello C, et al. Does the polydimethylsiloxane urethral injection (Macroplastique®) improve sexual function in women, in fertile age, affected by stress urinary incontinence? *Medicina.* 2023;59(3):580. doi:10.3390/medicina59030580
- Mosca L, Riemma G, Braga A, et al. Female sexual dysfunctions and urogynecological complaints: a narrative review. *Medicina.* 2022;58(8):981. doi:10.3390/medicina58080981
- Volonte' S, Barba M, Cola A, Marino G, Frigerio M. Italian validation of the short form of the pelvic organ prolapse/urinary incontinence sexual questionnaire (PISQ-12). *Int Urogynecol J.* 2022;33(11):3171–3175. doi:10.1007/s00192-022-05235-0
- Filocamo MT, Serati M, Li Marzi V, et al. The Female Sexual Function Index (FSFI): linguistic validation of the Italian version. *J Sex Med.* 2014;11(2):447–453. doi:10.1111/jsm.12389
- Birkmeyer JD, Reames BN, McCulloch P, Carr AJ, Campbell WB, Wennberg JE. Understanding of regional variation in the use of surgery. *Lancet.* 2013;382(9898):1121–1129. PMID: 24075052; PMCID: PMC4211114. doi:10.1016/S0140-6736(13)61215-5
- Padoa A, Braga A, Fligelman T, et al. European urogynaecological association position statement: pelvic organ prolapse surgery. *Urogynecology.* 2023;29(8):703–716. PMID: 37490710. doi:10.1097/SPV.0000000000001396



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