

Sexual Function after Laparoscopic Surgery for Pelvic Organ Prolapse: A Comparison and Non-Inferiority Study between Abdominal Sacropexy and Dubuisson Lateral Uterine Suspension

Andrea Sartore¹, Anna Camillo^{2,*}, Maria Sole Scalia², Marco Cittar³, Francesco Paolo Mangino¹ and Giuseppe Ricci^{1,2}

¹Institute for Maternal and Child Health - IRCCS Burlo Garofolo, Trieste, Italy

²Department of Medicine, Surgery and Health Sciences, University of Trieste, Trieste, Italy

³Cardiology and Cardiothoracic Department, University Hospital Santa Maria della Misericordia ASUFC, Udine, Italy

Corresponding Author: Anna Camillo, Department of Medicine, Surgery and Health Sciences, University of Trieste, Trieste, Italy, Tel.: 3477943540, E-mail: annalaura.camillo@gmail.com

Citation: Andrea Sartore, Anna Camillo, Maria Sole Scalia, Marco Cittar, Francesco Paolo Mangino et al. (2024) Sexual Function after Laparoscopic Surgery for Pelvic Organ Prolapse: A Comparison and Non-Inferiority Study between Abdominal Sacropexy And Dubuisson Lateral Uterine Suspension, Int J Sexual Med. 3: 1-6

Copyright: © 2024 Anna Camillo. This is an open-access article distributed under the terms of Creative Commons Attribution License, which permits unrestricted use, distribution, and reproduction in any medium, provided the original author and source are credited.

Abstract

Aim: To compare the impact of two different surgical interventions on sexual life in patients who underwent abdominal sacral colpopexy or Dubuisson lateral uterine suspension.

Material and Method: Eighty patients with symptomatic genital prolapse were enrolled in the study; 47 underwent abdominal sacral colpopexy (ASC) and 33 underwent Dubuisson abdominal lateral uterine suspension (ALS). The PISQ-IR (Pelvic Organ Prolapse/Urinary Incontinence Sexual Questionnaire, IUGA-Revised), administered before surgery and six months after, was used to see potential differences between the groups.

Results: The mean age of patients in the ASC group was 56,4 (range 34-71), while in the ALS group was 59.1 (range 34 -80). Sexually active patients in the ASC group were 57% (27 out of 47) while 54% in ALS group (18 out of 33). When comparing Dubuisson lateral suspension and abdominal sacral colpopexy in improving sexual function, no statistically significant differences in both questionnaires were found.

Conclusion: Preliminary data show similar results between the procedures, thus it is possible to consider Dubuisson lateral suspension non-inferior to abdominal sacral colpopexy in improving quality of life and sexual function of patients.

Keywords: Pelvic Organ Prolapse; Surgery; Quality Of Life; Dubuisson Lateral Uterine Suspension

Introduction

Sexual dysfunction in women affected by pelvic organ prolapse (POP) is well documented in international literature [1]. Women with pelvic floor disorders have high rates of sexual dysfunction; in case of surgery, the risk of sexual impairment could become higher [2]. Preservation of sexual activity and improvement of sexual function are important goals for pelvic organ prolapse surgery, but, to date, data are controversial on this topic. This fact is due to different surgical approaches in the treatment of POP and different ways to evaluate sexual function. A recent review compared different approaches to pelvic floor repair, but it did not find significant differences among the techniques [3]. Nowadays, laparoscopy is the most common approach to generally treat gynaecologic pathology, included POP. The two surgical interventions usually performed are abdominal sacral colpopexy (ASC) and abdominal lateral suspension (ALS) also called Dubuisson lateral suspension. ASC consists in placing a Y-shaped mesh sutured to the sacrum and to the cervix (or vagina if the patient has already been hysterectomized). This procedure can be associated with long operative time, long learning curve for the surgeon and serious morbidity as vascular, neurologic and ureteric injuries. ALS, instead, is performed with a T-shaped mesh graft placed in the vesico-vaginal place and sutured to the anterior vaginal wall, uterine cervix and isthmus. The lateral arms of the mesh are suspended bilaterally to the abdominal wall, posterior to the anterior superior iliac spine. Through the use of this alternative procedure it is possible to avoid dissection at the sacrum promontory and the consequent risk of injuries. If we consider that lifetime risk of women who undergo prolapse surgical repair ranges from 11% to 19% [4], it is essential to discuss with the patients, during the pre-operative counseling, not only the different possibilities of surgical treatment, but also the impact on quality of life and sexual function. The aim of the study is to examine the impact of laparoscopic surgery in the treatment of symptomatic pelvic organ prolapse and to compare results between the two procedures: abdominal sacral colpopexy (ASC) and lateral suspension (ALS) using a validated questionnaire to explore sexual function before and after surgery. Clinicians can consequentially have the most appropriate pre-operative counselling with the patients in order to provide them the best treatment, considering sexual function as a parameter for the choice of the interventions.

Materials and Methods

80 patients were enrolled at the Department of Obstetrics and Gynecology of our Institute from April 2017 to March 2024. All the patients had a symptomatic genital prolapse ≥ 2 following the POP-Q Classification [5] and gave their informed consent to participate to the study. Exclusion criteria was previous surgery for pelvic organs prolapse and age > 80 years old. This study was previously approved by our local Ethic Committee.

47 patients were treated by laparoscopic abdominal sacral colpopexy (ASC), 33 by Dubuisson lateral uterine suspension (ALS). Surgical procedure was decided by two expert surgeons basing on general characteristics or comorbidities of the patient.

All the patients were asked to fill in the PISQ-IR (Pelvic Organ Prolapse/Urinary Incontinence Sexual Questionnaire, IUGA-Revised), a validated questionnaire which explores sexual function in women with pelvic floor disorders [6]. This questionnaire was administered before surgery and six months after. It contains two sections: part 1 (5 questions) for women not sexually active and part 2 (13 questions) for women sexually active. In part 1 a high score indicates an important impact of pelvic floor dysfunction on sexual activity, whereas a high score in part 2 shows a good sexual function. The questionnaire is considered valid if the patients answer at least to half of all the questions. The summary score is obtained by the sum of the scores of all the valid answers divided by the total number of the valid answers.

In statistical analysis, the variables were described with median and interquartile range (IQR) [25°-75°]. Wilcoxon test was used to evaluate the difference of all the variables expressed in the test before and after surgery, whereas Wilcoxon-Mann-Whitney test was used to evaluate the difference between the different types of surgery. Statistical significance was considered with a P-value set below 0.05. All statistical analysis was performed using IBM SPSS Statistical Package26 (IBM, Armonk, NewYork).

Results

The mean age of patients who underwent ASC was 56,4 (range 34-71) while in the ALS group was 61,8 (range 44-80). There were no significant differences on sexual activity in both groups; sexually active in the ASC group were 57% and 54% in the ALS group. In table 1 we resumed the general characteristics of groups.

Table 1: General characteristics of patients

	ASC	ALS
Age	56,4 (range 34-71)	61,8 (44-80)
Sexually active	27 (57%)	18 (54%)
Non sexually active	20 (43%)	15 (46%)
Total	47	33

The two groups of patients were homogeneous in terms of age, BMI, parity and smoking habit.

The first six questions of PISQ-IR involve women not sexually active before surgical treatment. Data collected showed a significant improvement for all the six items after surgery (table 2).

Table 2: PISQ-IR questionnaire. Difference between pre and post-surgery in non-sexually active women. Continuous variables are expressed as median and (IQR). Wilcoxon test was used to test difference between paired groups.

Total (n=35)	Pre-surgery	Post-surgery	P-value
Laparoscopic surgery Summary Score, n	2,5 (2,2-2,9)	2,3 (1,8-2,7)	< 0,0001

The analysis of questions for sexually active women did not show a significant improvement on sexual activity in the post-operative follow-up, as reported by the summary score (P-value 0.065), (Table 3).

Table 3: PISQ-IR questionnaire. Difference between pre and post-surgery in sexually active women. Continuous variables are expressed as median and (IQR). Wilcoxon test was used to test difference between paired groups.

Total (n=45)	Pre-surgery	Post-surgery	P-value
Laparoscopic surgery Summary Score, n	4,3 (4,3-4,5)	4,3 (4,2-4,5)	0,065

Comparing the results between the two surgical procedures, we found no difference in statistical analysis, as shown by the summary score (P-value) in table 4.

Table 4: PISQ-IR questionnaire. Difference between type of laparoscopic procedure in sexually active women. and post-surgery in sexually active women. Continuous variables are expressed as median and (IQR). Mann-Whitney test was used to test difference between paired groups.

	ASC (n=27)	ALS (n=18)	P-value
Post surgery Summary Score, n	4,3 (4,2-4,5)	4,3 (4,3-4,4)	0,812

Discussion

POP results in physical changes to women's genitalia and can negatively affect women's sense of body image. It can induce negative changes in parameters of sexual function, such as loss of libido or reduced genital sensation [7]. Sexual desire, arousal,

and orgasm are mediated by both subcortical structures (hypothalamus, brainstem, and spinal cord) and cortical brain areas acting as an orchestra to finely adjust this primitive, complex, and versatile behaviour [8]. Women affected by POP experience symptoms that do not necessarily correlate with anatomical level of prolapse [9].

Despite the absence of clear guidelines for postoperative follow-up monitoring, the optimal period for assessment seems to be between 6 months and 1 year after surgery. This period allows sufficient time for resumption of sexual activity, whereas beyond this window, other intercurrent factors (for example, vaginal dryness related to menopausal status and/or ageing, problems within the couple and new medications) could interfere with the assessment [10].

Sexual function usually improves after surgery; this is primarily due to improved body image in response to correction of the POP. Sexual well-being before surgery is the major predictor of a good postoperative sexual function. Preoperative counselling is an important step before surgery. When surgery is indicated, sacropexy remains the gold-standard treatment for POP repair, particularly in selected women <70 years old [11] and for restoration of anatomical outcome.

Laparoscopic sacropexy include laparoscopic sacrohysteropexy, laparoscopic supracervical hysterectomy with concomitant laparoscopic sacrocervicopexy and total laparoscopic hysterectomy with concomitant laparoscopic sacrocolpopexy [12].

The goal of reconstructive surgery is to restore organs to their original position to correct disorders caused by impaired functionality of the complex pelvic system, preserving as much as possible the anatomy and physiological functions (bladder, rectal and sexual). The best surgery depends on the patient's desire, expectations and comorbidities, and the skills of the surgeon.

In our survey we evaluated, before and six months after surgery, 80 patients that underwent a laparoscopic surgical intervention: 43 underwent abdominal sacral colpopexy (ASC) and 33 Dubuisson lateral uterine suspension (ALS). Data collected from non-sexually active women showed a global improvement in sexual function (intended as perception of their own body, genitalia and fear of any sexual intercourse) in the post-surgery. When the two different techniques are compared, Dubuisson lateral suspension showed a major improvement than sacropexy. The analysis of PISQ IR questionnaire on sexually active women did not show a significant global improvement on sexual function; from statistical results appeared that this group of women, compared to the non-sexually active ones, had a quite satisfying sexual function also before surgery, thus the improvement was minimal but not significant (P-Value 0,065). From the comparison between abdominal sacral colpopexy and Dubuisson lateral suspension, data collected did not show any difference in improving sexual function. Results of our survey are particularly important for current clinical practice. From recent literature, abdominal sacropexy represents the gold standard in treatment of pelvic floor dysfunction. This is true if we consider as the only surgical outcome the restoration of vaginal anatomy but, nowadays, quality of life (intended as restoration of urinary, colo-rectal and sexual function) represents a surgical outcome as important as an achieved normal anatomy. Some authors claim that there is no linear relationship between the anatomical evaluation and the symptoms, underlining how the resolution of symptoms leads the patient to consider a surgical success even in the absence of optimal anatomical reconstruction [13]. As we know from the literature, abdominal sacropexy can be a life-threatening operation; it is a complicated technique requiring sophisticated surgical skills and can have significant consequences, most notably sacral dissection. For these reasons, there has been a research and development of other abdominal methods [14]. Among these, Dubuisson lateral suspension is the most common used for the treatment of apical prolapse and has a success rate of greater than 90% in restoring regular vaginal anatomy, comparable to the laparoscopic sacrocolpopexy [15, 16]. Furthermore, Dubuisson lateral suspension allows the patient to preserve her own uterus [17] differently from sacropexy, and this is emotionally and psychologically important for the perception of body image and womanhood. To our knowledge this is the first study that compares Dubuisson lateral suspension to abdominal sacropexy for the evaluation of quality of life and sexual function. From our results, Dubuisson lateral suspension shows similar results compared to sacropexy, thus it is possible to consider non inferior to the current gold standard.

Considering the shorter learning curve for the surgeon, the shorter operative time and the minimally invasive procedure, due to the possibility of preserving the uterus, ALS can be a valid technique to restore the quality of life in patients affected by POP.

With our study, we highlighted the non-inferiority of this recent procedure to the gold standard represented by ASC and the advantage of performing ALS rather than ASC for many gynaecologic departments.

The limit of our survey was the small number of our sample, so further studies are required to confirm our results.

Conclusion

It is very difficult to fully evaluate sexual function. It is made up of physical, but also emotional and psychological factors, as well as depending on the relationship with the partner. If the improvement in urinary and bowel dysfunctions in restoring quality of life represents, albeit with difficulty, a new surgical outcome, the evaluation of sexual function is still a taboo. Further investigation is needed to better understand the importance of this topic and the best approach for each patient.

Author Contributions

Conceptualization, A.S. and A.C.; Data Curation, A.C and M.S.S.; Formal Analysis, M.C. and A.C.; Methodology, A.S. and A.C.; Project administration, A.S., F.P.M and G.R.; Software, M.C.; Supervision, A.S., F.P.M. and G.R.; Validation, A.S.; Writing – original draft, A.C. and A.S.

References

1. Jha S (2019) Maintaining sexual function after pelvic floor surgery. *Climacteric*, 22: 236-41.
2. Pauls RN, Segal JL, Silva WA, Kleeman SD, Karram MM (2006). Sexual function in patients presenting to a urogynecology practice. *Int Urogynecol J Pelvic Floor Dysfunct*, 17: 576–80.
3. Antosh DD, Dieter AA, Balk EM, Kanter G, Kim-Fine S et al (2021) Sexual function after pelvic organ prolapse surgery: a systematic review comparing different approaches to pelvic floor repair. *Am J Obstet Gynecol*, 225: 475.e1-475.e19.
4. Smith FJ, D'Arcy Holman CJ, Moorin RE, Tsokos N (2010) Lifetime risk of undergoing surgery for pelvic organ prolapse. *Obstet Gynecol*, 116: 1096-00.
5. Bump RC, Mattiasson A, Bo K, Brubaker LP, DeLancey JOL et al. (1996) The standardization of terminology of female pelvic organ prolapse and pelvic floor dysfunction. *Am J Obstet Gynecol*, 175: 10-7.
6. Constantine ML, Pauls RN, Rogers RR, Rockwood TH (2017) Validation of a single summary score for the Prolapse/Incontinence Sexual Questionnaire-IUGA revised (PISQ-IR). *Int Urogynecol J*, 28: 1901-7.
7. Verbeek M, Hayward L (2019) Pelvic Floor Dysfunction And Its Effect On Quality Of Sexual Life. *Sex Med Rev*. Oct, 7: 559-564.
8. Calabrò RS, Cacciola A, Bruschetta D, Milardi D, Quattrini F et al. (2019) Neuroanatomy and function of human sexual behavior: A neglected or unknown issue? *Brain Behav*, 9: e01389.
9. Ellerkmann RM, Cundiff GW, Melick CF, Nihira MA, Leffler K, Bent AE (2001) Correlation of symptoms with location and severity of pelvic organ prolapse. *Am J Obstet Gynecol*, 185: 1332-7.
10. Thompson JC, Rogers RG (2016) Surgical Management for Pelvic Organ Prolapse and Its Impact on Sexual Function. *Sex Med Rev*, 4: 213-20.

11. Fatton B, de Tayrac R, Letouzey V, Huberlant S (2020) Pelvic organ prolapse and sexual function. *Nat Rev Urol*, 17: 373-90.
12. Yan L, Lu S, Zhao C, Lei L, Liu L (2022) Comparison of Different Laparoscopic Sacropexy Procedures for Advanced Uterine Prolapse: A Retrospective Analysis. *J Minim Invasive Gynecol*, 20: S1553.
13. Barber MD et al (2009) Defining success after surgery for pelvic organ prolapse. *Obstet. Gynecol.* 114: 600-9.
14. Szymczak P, Grzybowska ME (2019) Wydra, DG Comparison of Laparoscopic Techniques for Apical Organ Prolapse Repair—A Systematic Review of the Literature. *Neurourol. Urodyn* 38: 2031-50.
15. Mereu L, Tateo S, D'Alterio MN, Russo E, Giannini A et al. (2020) Laparoscopic Lateral Suspension with Mesh for Apical and Anterior Pelvic Organ Prolapse: A Prospective Double Center Study. *Eur. J. Obstet. Gynecol. Reprod. Biol*, 244: 16–20.
16. Dubuisson J, Eperon I, Dällenbach P, Dubuisson J-B (2013) Laparoscopic Repair of Vaginal Vault Prolapse by Lateral Suspension with Mesh. *Arch. Gynecol. Obstet*, 287: 307-12.
17. Veit-Rubin N, Dubuisson JB, Lange S, Eperon I, Dubuisson J (2016) Uterus-Preserving Laparoscopic Lateral Suspension with Mesh for Pelvic Organ Prolapse: A Patient-Centred Outcome Report and Video of a Continuous Series of 245 Patients. *Int. Urogynecol J*, 27: 491-3.