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Labhardt's colpoperineocleisis: subjective results of an alternative treatment for genital prolapse in patients who are not sexually active—2-year follow-up

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Abstract
Introduction and hypothesis Genital prolapse affects up to 50 % of multiparous women and has an impact on quality of life (QoL) for many. Vaginal obliterative techniques are relevant in older patients who are not sexually active. We performed Labhardt's colpoperineocleisis in such patients. The objective was the evaluation of subjective outcomes of this technique using PGI-I.
Methods Retrospective cohort analysis of patients. We performed a bivariate, multivariate analysis, and survival curves for subjective improvement.
Results Seventy-four cases were analyzed. Average age of the patients was 72 years, median parity 4, 95.9 % POP-Q stage III or IV, anterior leading edge defect in 61.1 %. Operating time: 54 min, estimated blood loss 70 ml, no intraoperative complications, 12 patients had protocol deviations with changes in the recommended type of suture. Median hospital stay was 2 days and average follow-up 24.9 months. There was 13.5 % anatomical recurrence, 3 of which (30 %) were in patients with protocol deviations. 1.9 % developed clinically significant de novo stress urinary incontinence (SUI). PGI-I: 64 (86 %) reported subjective improvement and 10 did not. In the subjective improvement group, 98.4 % reported being very much or much better. In the non-subjective improvement group 80 % reported that they were the same as before surgery and 20 % were worse. In bivariate analysis anatomical recurrence showed significance and persisted after multivariate analysis with an OR of 8322 for subjective failure.
Conclusion Labhardt's colpoperineocleisis is a safe technique with good subjective results. It has few complications, an acceptable recurrence rate, and a low rate of de novo SUI. It may be important to use the #0 or #1 polydioxanone sutures, as these are associated with better outcomes in this series. Comparative studies with other obliterative techniques are needed.

Keywords Pelvic organ prolapse · Gynecological surgical procedures · Frail elderly · Quality of life · Vaginal prolapse

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Abbreviations

POP	Pelvic organ prolapse
PGI-I	Patient global impression of improvement
SUI	Stress urinary incontinence
OR	Odds ratio
BMI	Body mass index
POP-Q	Pelvic organ prolapse quantification
ISI	Incontinence severity index

Introduction

A woman's risk of being operated on for POP or SUI increases with age, up to 11 % by the age of 80 [1]. In this regard, by 2030 an estimated one fifth of the population of the United States will be over 65 years and the number of women over 84 years will exceed 6 million [2].

Reconstructive techniques that maintain or restore the anatomy and functionality of the pelvic floor [3], are preferred in patients who are sexually active and want to maintain that status; however, these procedures potentially expose patients to an increased risk of recurrence. In sexually inactive women, where preservation of sexual function has no such relevance, the therapeutic goal prioritizes the greater efficiency and durability of the defect repair [4].

For this group of patients, usually older and with a higher surgical risk, an obliterative technique offers great benefit [5]. Among these procedures are the Le Fort colpocleisis (the most commonly used), Conill's colpocleisis, Döderlein's colporrhaphy, and various modifications [6]. The surgical principle that applies to all of them is the total occlusion of the vaginal tube through the apposition of integumentary tissue and mucosa with scant muscular strengthening. Its major disadvantage is the high rate of postoperative SUI [7]. In order to reduce postoperative SUI, changes have been introduced to the technique that include performing a partial colpocleisis, preserving intact the distal third of the anterior vaginal wall. The introduction of such modifications, added to the fact that this technique is usually performed in older women in whom the tissues are often atrophic makes POP recurrence rates very variable—ranging up to 30 % depending on the series [7–10].

Given the historical results pertaining to POP recurrence, our team decided to adopt an older obliterative technique (or colpoperineocleisis) in patients with POP who were not sexually active. This technique is Labhardt's colpoperineocleisis, developed in 1923 by Alfred Labhardt. In this procedure, vaginal occlusion involves the fusion of the lateral walls and the vaginal introitus [11]. Among the advantages described with this technique are a low rate of recurrence and postoperative SUI, a short learning curve, low cost, and short operative time with limited blood loss [12–14]. With respect to anatomical outcomes a previous report from our group noted that this technique achieved a 14.7 % recurrence at 20 months' follow-up [15].

The primary aim of this study was to evaluate the medium term subjective outcome of this technique performed on elderly patients with POP who were not sexually active using the PGI-I as the outcome measure. Secondary aims were to identify risk factors for lack of improvement on PGI-I and report objective results in terms of durability of the correction of the defect and incidence of postoperative SUI.

Materials and methods

We retrospectively identified a consecutive cohort of older sexually inactive women with POP who had undergone Labhardt's colpoperineocleisis. The study protocol was reviewed and approved by our institution's Institutional Review Board.

Inclusion criteria were: patients undergoing Labhardt's colpoperineocleisis technique, who underwent surgery on or after 1 January 2008 (when our database was implemented) and with a minimum of 6 months follow-up. Exclusion criteria were: having undergone another colpocleisis technique, not enough information in the surgical note specifying clearly the surgical technique used, surgery performed before 1 January 2008, and less than 6 months of follow-up.

Briefly, a posterior vaginal mucosa diamond shaped area is demarcated with electrocautery—from 1 cm below the posterior lip of the cervix or vault laterally to the introitus and then medially to a point 2 cm above the anus in the perineal skin. One third of the way back, an incision is made laterally heading to the labia minora (ending about 2 cm below the clitoris) and then caudad to the introitus. No anterior incisions are made. The posterior and lateral vaginal mucosa is then excised exposing "fascial" tissue and muscle in a star or "maple tree leaf" fashion. Closure of the vaginal mucosa at the apex, nearest to the cervix or vault is started, with polyglactin 910 # 3–0 to the point where the lateral resection begins. Following this, a horizontal high midline plication of the puborectalis and the bulbospongiosus muscles with polydioxanone # 0 or # 1 in 3 to 4 separate "figure of 8" stitches is performed. Superficial plication of the muscle to cover the previous suture line is then performed in 3–4 separate stitches with polyglactin 910 # 1. Finally, suturing of the vaginal mucosa and perineal skin with polyglactin 910 # 3–0 completes the closure. See Fig. 1 and accompanying video.

Methods, definitions, and units conform to the standards jointly recommended by the International Urogynecological Association and the International Continence Society, except where specifically noted. Demographic, urinary and prolapse symptoms, BMI, POP-Q [16], and surgical and follow-up variables were included for analysis. Prolapse recurrence was defined as any POP-Q point≥0. Symptomatic recurrence

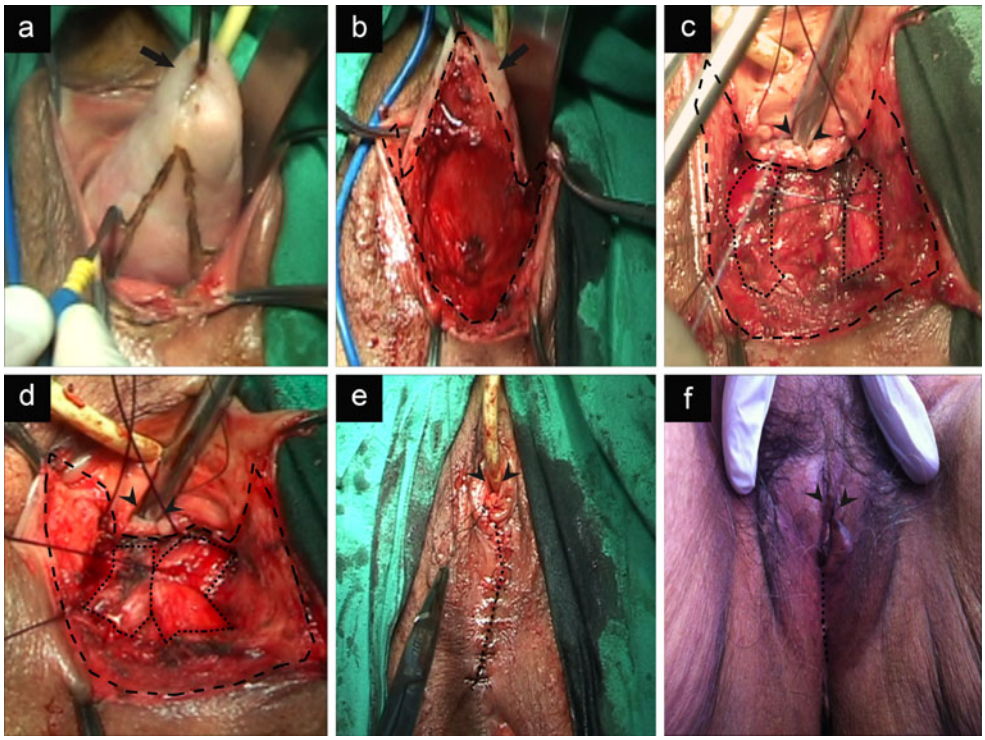

Fig. 1 **a** Posterior vaginal mucosa diamond-shaped area is demarcated with electrocautery. *Arrow* shows the cervix being pulled by a Pozzi clamp. **b** The posterior and lateral vaginal mucosa already excised exposing "fascial" tissue and muscle in a star or "maple tree leaf" fashion (*dashed line*). *Arrow* shows the cervix being pulled by a Pozzi clamp. **c** Vaginal mucosa at the apex closed with polyglactin 910. *Dotted line* shows the visible puborectalis muscles with the polydioxanone suture placed prior to being tying. *Arrowheads* show the neointroitus with the suction inside **d** Same image as **c** after the polydioxanone sutures were tied. *Dotted line* shows the midline plication of the puborectalis muscle. **e** Appearance of the perineum at the conclusion of surgery. *Dotted line* shows the skin suture. **f** Appearance of the perineum after 30 months' follow-up. *Dotted line* shows the skin suture. *Arrowheads* show the neointroitus

was defined as a positive answer to the question "Do you feel any sensation of weight or bulge in the vagina?" At each evaluation the PGI-I survey was utilized (possible answers were: very much better, much better, a little better, no change, a little worse, much worse, very much worse). If anatomical recurrence requiring surgery occurred, the last PGI-I survey response prior to reoperation was used. Then to determine subjective success the patients were divided between those who reported improvement (PGI-I response: very much better, much better, a little better) and those who did not report improvement (PGI-I response: no change, a little worse, much worse, very much worse).

At last follow-up (including after reoperation for those with recurrence), an indicator of patient satisfaction after surgery was included ("Are you satisfied with the surgery that was performed?") as well as a quality of life question ("Do you feel better, worse or the same as before the surgery?").

SPSS for windows version 18 was used for data analysis. Student's t test, Mann–Whitney U, Chi-squared or Fisher's exact tests were used as appropriate. Survival curves were constructed for Subjective Global Improvement (according to Kaplan–Meier analysis) to assess the durability of improvement of this surgical technique on time after surgery. Statistical significance was set at p <0.05. A Bayesian multivariate logistic regression analysis was performed for improvement using WinBugs v 1.4. This analysis included as independent variables the age at surgery, parity, previous vaginal delivery, history of hysterectomy (independent pathway), previous POP surgery, degree of POP, presence of multicompartment POP, senior staff versus residents, de novo SUI, and any variables with p value <0.1 in the bivariate analysis.

Results

Between January 2008 and December 2010 79 underwent a vaginal obliterative repair. As a prerequisite all patients had negative cervical cytology and normal transvaginal ultrasound.

Of the 79 colpocleises, 75 were performed according to the Labhardt technique and 4 were partial Le Fort colpocleises. One patient was excluded because of less than 6 months' follow-up (death unrelated to the surgery). Therefore, 74 patients were included in the analysis.

Demographic characteristics are described in Table 1. In the preoperative evaluation 95.9 % of the patients had stage III or greater prolapse based on POP-Q. In this cohort, the leading edge compartment was apical, anterior, and posterior in 34.7 %, 61.1 %, and 4.2 % respectively. 95.9 % of the patients (71 out of 74) had multi-compartment prolapse. Of these, in 54 cases (76 %) the defect was anterior, apical, and posterior, in 9 (12.6 %) anterior and apical, and in 7 (9.8 %) anterior and posterior. There were no cases of apical and posterior defects without an anterior defect. The mean preoperative POP-Q is described in Table 1.

The analysis of intra-operative variables is summarized in Table 1. There were no intraoperative complications. In 12 patients (16.2 %) there was a protocol deviation—specifically, a smaller caliber or type of absorbable suture (not as long-lasting) was used. These patients were not excluded from analysis despite the fact that for puborectalis muscle plication 2–0 polydioxanone or polyglactin 910 sutures were used instead of #0 or #1 polydioxanone sutures, as per protocol. The median hospital stay after surgery was 2 days (IQR 2–2).

Table 1 Demographic characteristics, Mean preoperative POP-Q and intraoperative variables of patients undergoing Labhardt's colpoperineocleisis between 2008 and2010 in the Hospital Dr. Sotero del Rio. Data presented as mean ± standard deviation (range), number (percentage) or median (IQR 25–75)

Patients	$n=74$
Age (range, years)	72±5.7 (58–84)
Parity, median (IQ 25–75)	4 (2–6)
Forceps delivery	15 (20.3 %)
Newborn maximum weight (range, g)	3668±664 (2000–5500)
History of vaginal or abdominal hysterectomy	10 (13.5 %)
Age at menopause (years)	46.5±5.9
History of POP surgery	6 (8.1 %)
BMI (range, kg/m^2)	27.5±5.3 (19–44.4)
Mean preoperative POP-Q	
Aa	1.6±1.7
Ba	3.7±2.2
C	1.6±4.5
gH	5.3±1.3
pB	3±0.8
TVL	8±1.3
Ap	−0.5±2
Bp	0.2±3
D	−3.3±2.5
Intraoperative variables	
Operative time (range, min)	54±20 (25–120)
Estimated blood loss (range, ml)	70±67 (10–500)
Concomitant vaginal surgeries, *n* (%)	6 (8.1)
Vaginal hysterectomy	4
Suburethral sling	2
Surgery performed by a senior member of staff, *n* (%)	55 (74.3)

Mean follow-up was 24.9±8.2 months (range 11 to 44 months). Ten patients (13.5 %) had anatomical recurrence—all were symptomatic. The median time to recurrence was 2 months. 3 of the 10 patients with recurrence were in the group where the protocol deviation had occurred—different sutures had been used from those specified in the protocol. Overall, 7 out of 64 patients (10.9 %) operated on per protocol failed, while 3 out of 12 patients (25 %) who were protocol deviations failed. From the protocol deviation group, one patient presented with complete procidentia. Seven presented with stage III POP (2 with the same anterior POP, 3 with the same anterior and apical POP, and 2 with the same anterior, but without the apical POP). Two patients presented with stage II POP (both with less severe anterior POP, but with apical defect). In 9 of the 10 anatomical recurrences repeat surgery was necessary—in 8 of them Labhardt's colpoperineocleisis was repeated (with the per protocol sutures) and in 1 patient the correction was performed by Le Fort colpocleisis (a detailed description of the patients with anatomical recurrence is described in Table 2). Fifty-two of the 74 patients (70.2 %) had no preoperative SUI. Of these 52 patients 3 (5.8 %) developed de novo SUI during follow-up. Two noted that the SUI did not affect their quality of life and had an ISI score≤4, while 1 (1.9 %) had clinically significant SUI with an ISI score of 12.

Eleven patients (14.9 %) had vaginal discharge in the first month after surgery. In all of them antibiotic treatment was initiated (without microbiological confirmation of infection). Of this group, 3 (27.2 %) had anatomical recurrence and noted no subjective improvement.

Sixty-four of the 74 (86 %) reported subjective improvement on the PGI-I and 10 (14 %) did not. Of the 64 surgical patients without anatomical recurrence, 3 (4.7 %) reported being very much better, 60 (93.7 %) much better and 1 (1.6 %) a little better. Of the 10 patients who had recurrence, 8 reported that they were same as before surgery, 1 was a little worse and 1 much worse. Nine of these required reoperation. Of these 9, 1 claimed to be very much better and 8 reported being much better at mean follow-up after second surgery of 18 months (range 1–27). This means that overall at the end of follow-up 98.6 % (73 of the 74 enrolled patients) were very much better, better or a little better.

In bivariate analysis of potential risk factors associated with no subjective improvement, both anatomical and symptomatic recurrence showed significance (both p value<0.0001). The detailed analysis of risk factors is summarized in Table 3.

In survival curves for subjective improvement, there was 90.4 %, 85.9 %, 76 %, and 76 % chance of improvement at 12, 24, 36, and 44 months respectively (if there were recurrences requiring surgery, the last PGI-I survey response prior to reoperation was used for analysis; Fig. 2). Regarding the

Table 2 Detailed description of the patients with anatomical recurrence. Age, follow-up to recurrence, preoperative and postoperative POPQ (with an average for the group), management of the recurrence, and follow-up after second surgery is detailed for patients with anatomical recurrence. POP-Q points are measured in centimeters above or below the hymeneal ring

Patient number	Age (years)	Months to recurrence	Aa		Ba		C		gH		pB		TVL	
			Preop	Postop	Preop	Postop	Preop	Postop	Preop	Postop	Preop	Postop	Preop	Postop
1	75	33	4	1	4	3	2	2	7	7	3	3	9	8
2	78	0	−2	2	2	2	−6	−3	4	4	3	2	8	7
3	68	1	2	2	5	2	1	0	5	4	4	3	7	7
4	77	3	3	3	3	5	3	−1	5	5	3	3	9	8
5	69	23	1	2	3	2	4	−4	5	3	4	5	9	8
6	82	1	3	3	9	9	11	10	9	9	3	3	9	9
7	70	1	1	0	2	0	−4	−1	4	3	3	3	8	8
8	72	3	3	0	6	0	7	0	6	4	2	4	8	8
9	60	1	3	2	4	2	−1	−3	5	4	3	5	7	8
10	75	21	2	0	4	3	6	1	9	4	3	5	9	10
Average	72.6	8.7	2	1.5	4.2	2.8	2.3	0.1	5.9	4.7	3.1	3.6	8.3	8.1

Patient number	Ap		Bp		D		Stage		Management	Follow-up after second surgery
	Preop	Postop	Preop	Postop	Preop	Postop	Preop	Postop		
1	1	1	1	1	−3	−4	IV	III	Observation	n/a
2	−2	−3	−2	−3	n/a	n/a	III	III	Repeat Labhardt	23
3	−1	−1	−1	−1	n/a	n/a	III	III	Repeat Labhardt	23
4	−3	−3	−3	−3	−7	−4	III	III	Repeat Labhardt	20
5	−2	−3	−2	−3	−4	−4	III	III	Repeat Labhardt	1
6	3	3	9	9	−1	−1	IV	IV	Repeat Labhardt	15
7	−1	−1	−1	−1	−6	−6	III	II	Le Fort	27
8	3	0	5	0	n/a	n/a	IV	II	Repeat Labhardt	22
9	−2	−2	−2	−2	n/a	n/a	III	III	Repeat Labhardt	24
10	3	−2	5	−2	n/a	n/a	IV	III	Repeat Labhardt	10
Average	−0.1	−1.1	0.9	−0.5	−4.2	−3.8				18.3

anatomical results, all patients in the "non-recurrence" group reported improvement at 12 and 24 months; in contrast, only 32.2 % and 12.9 % reported improvement when anatomical recurrence occurred at 12 and 24 months ($p<0.0001$). No other variables evaluated were statistically significant.

Bayesian multivariable logistic regression analysis was performed for the probability of improvement. The only variable statistical significance was for the absence of anatomical recurrence.

Discussion

Labhardt's colpoperineocleisis is an older technique utilized for sexually inactive patients with symptomatic POP. In our series, we note that in well-selected patients this technique gives very good results in terms of subjective improvement at 1- and 2-year follow-up (90.4 % and 85.9 %) and is associated with a low complication rate. The only statistically significant variables that were related to a lack of subjective improvement were anatomical and symptomatic recurrence. It seems relevant to point out, in this sense, the complete correlation between objective and subjective failure (all patients with anatomical failure reported no improvement in PGI-I). This is markedly different from that reported in the CARE trial [17], where only 44 % of the patients with POP beyond the hymenal ring required a retreatment—in contrast to our cohort where 90 % required retreatment. This scenario suggests that in patients undergoing this surgery there is correlation between anatomical and symptomatic recurrence. This situation could be explained by the severity of the recurrence as shown in Table 2. Eight of the 10 patients had stage III or IV recurrence and the 2 patients with stage II had a C point in 0 or −1. While in our previous report we identified predictive factors of anatomical recurrence, we were unable to so in this study [15]. Not following the standardized protocol for suture use (OR 7.2 IC 95 % 1.1–45) and the presence of vaginal discharge that required antibiotics during the first month after surgery (OR 6.3 IC 95 % 1.2–32) were the variables that remained significant after multivariate COX regression analysis in our previous report. There are

Table 3 Bivariate analysis for no subjective improvement (PGI-I) of patients undergoing Labhardt's colpoperineocleisis between 2008 and 2010 at the Hospital Dr. Sotero del Rio. Data are presented as mean ± standard deviation or number (percentage)

Variable	Improvement $n=64'$	No Improvement $n=10$	p
Demographic characteristics			
Age	72.2 ± 5.7	72.6 ± 6.2	0.76[b]
Total parity	4.8 ± 2.8	4.5 ± 2.3	0.99[c]
Newborn maximum weight	3709 ± 672	3457 ± 438	0.68[b]
Forceps delivery	13 (20.3)	2 (20)	0.98[a]
History of vaginal or abdominal hysterectomy	8 (12.5)	2 (20)	0.51[a]
History of POP surgery	6 (9.4)	0 (0)	0.31[a]
Age at menopause	46.4 ± 6.2	46.8 ± 3.7	0.82[c]
BMI	27.5 ± 5.4	27.4 ± 4.8	0.96[b]
Preoperative POPQ			
Aa	1.5 ± 1.8	2 ± 1.8	0.31[c]
Ba	3.7 ± 2.2	4.2 ± 2.2	0.88[c]
C	1.6 ± 4.4	1.9 ± 5.2	0.86[b]
gH	5.2 ± 1.3	5.6 ± 1.6	0.82[c]
pB	3 ± 0.8	3.1 ± 0.6	0.53[c]
TVL	8 ± 1.2	8.2 ± 0.8	0.78[c]
Ap	−0.5 ± 2	−0.4 ± 2.2	0.89[c]
Bp	0.2 ± 2.9	0.4 ± 4	0.88[c]
D	−3.2 ± 2.5	−4.2 ± 2.4	0.84[b]
Anterior compartment defect	63 (98.4)	10 (100)	1.0[d]
Posterior compartment defect	54 (84.4)	9 (90)	0.64[a]
Apical compartment defect	54 (84.4)	9 (90)	0.64[a]
Multicompartment defect	61 (95.3)	10 (100)	1.0[d]
Intraoperative			
Operative time	55 ± 19	49 ± 27	0.69[b]
Estimated blood loss	75 ± 71	43 ± 23.6	0.08[c]
Surgery performed by senior staff	48 (75)	7 (70)	0.73[a]
Concomitant surgeries	7 (10.9)	1 (10)	0.92[a]
Surgery performed in learning curve	10 (15.6)	3 (30)	0.26[a]
Surgical technique adjusted to standardized protocol	55 (85.9)	7 (70)	0.2[a]
Follow-up			
Follow-up months	24.2 ± 8.3	29.2 ± 6.2	0.035[c] *
De novo SUI	3 (4.7)	0 (0)	1.0[d]
Vaginal discharge	8 (12.5)	3 (30)	0.14[a]
Anatomical recurrence	0 (0)	10 (100)	< 0.001[a]*
Symptomatic recurrence	0 (0)	10 (100)	< 0.001[d]*

*Significant difference

[a] Chi-squared test

[b] Student's t test

[c] Mann–Whitney U test

[d] Fisher's exact test

conflicting reports as to the outcomes of suture type on USLS outcomes [18–20]. Madhuvrata et al. [21] in an RCT with 2 years of follow-up could not find differences in QoL and symptoms with the use of PDS and Vicryl. Notably, none of these studies specifically analyzed obliterative techniques.

The use of the Patient Global Impression of Improvement (PGI-I) was validated previously for subjective evaluation of the outcome of genital prolapse surgery [22]. Van Huisseling [12] reported a Labhardt surgical technique slightly different from ours, a 96 %being much or slightly better (24 out of 25 patients), with follow-up ranging between 6 and 28 months.

By comparing this technique with other obliterative procedures, including the Le Fort colpocleisis, we observed recurrence rates similar or slightly higher than those reported by other groups, ranging between 3 and 10 % [7, 8, 10].

To date, and to our knowledge, no randomized trials have compared different obliterative techniques. Based on the fact that many prior reports have rather incomplete patient follow-up, we believe that a significant proportion of them, the vast majority of which are retrospective, may contain bias that negatively affects the proper recording of recurrences. The advantage of our study is that the patients included are part of a captive population within our public health care system. This is supported based on the fact that the follow-up of patients is almost complete (loss to follow-up<2 %) and 9 of the 10 recurrences were operated on at the same center performing the original surgery. It is our hypothesis that the Labhardt colpoperineocleisis is a potentially superior technique to Le Fort colpocleisis. Although our data do not support that

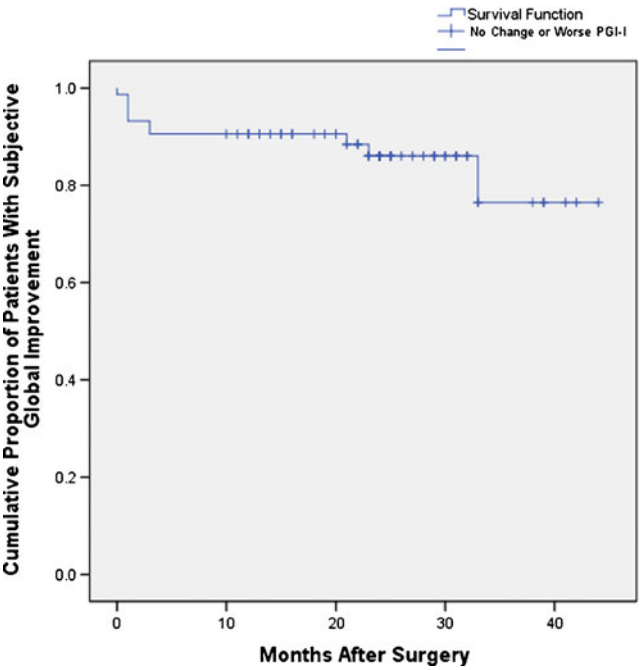

Fig. 2 Survival curve of subjective improvement for the PGI-I survey following Labhardt's colpoperineocleisis. Cumulative proportion of patients who improved at 24 months was 85.9 %

approach, our hypothesis is based on an anatomical concept. Le Fort's repair is based at the "fascial" level, whereas Labhardt surgery repairs the defect using as its main support a large muscular plication with a secondary "fascial" repair. This hypothesis should be tested in the future by a randomized controlled study comparing the two techniques.

It is striking that despite the "definitive" nature of this surgery there is recurrence of over 10 %, higher than that seen in other series. The greater failure rate may be explained by longer follow-up and a high rate of patient retention (98 %). Compared with non-obliterative techniques, our results are promising. Maher [3] reported a 10.7 % subjective failure rate for colposacropexy (9 out of 84) and 21.2 % for vaginal sacrospinous colpopexy (18 out of 85). Our results would approach the so-called "gold standard" rates.

A remarkable finding of our series is the low rate of de novo SUI (5.8 %, 3 out of 52 patients without SUI preoperatively). This is significantly lower than that reported in other studies using the Le Fort technique, where de novo SUI occurs in up to 28 % [7, 23, 24]. The occurrence of de novo SUI with the Le Fort technique is so high that many perform a concomitant suburethral sling [9]. The problem of adding tension-free tape is that it may be associated with higher complication rates and increases the surgical costs. The difference in the development of de novo SUI between these two techniques may be because in Labhardt's surgery there is no change in the bladder neck angle while in the technique of Le Fort there may be. This is another reason to choose the Labhardt technique in patients with POP who are not and will not be sexually active.

The limitations of our study are mainly based on its retrospective non-comparative design. This situation does not allow us to draw conclusions that could change clinical decisions, but only to undertake new, better designed studies comparing the different techniques. Another limitation is that the measurement of subjective outcome was conducted with surveys not validated in the Chilean population.

The main strengths of our study are in the sample size and follow-up. To the best of our knowledge, this is the largest series reported in the last 40 years, more than three times the number of patients in the next largest series. Our average follow-up is more than 2 years for up to 98 % of all the patients included in our cohort.

Labhardt's colpoperineocleisis is a safe procedure with few complications and acceptable recurrence rates. Our results support it as an alternative to reconstructive management in well-selected patients, given its high level of post-surgical improvement and satisfaction, low rate of postoperative de novo SUI, and its positive impact on quality of life.

Consent Written informed consent was obtained from the patient for publication of this video article and any accompanying images.

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Conflict of interest None.

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