

Amanda J. O’Leary · Sanjay K. Vyas

Le Fort’s partial colpocleisis: a review of one surgeon’s experience

Published online: 13 February 2004
© Springer-Verlag Berlin / Heidelberg 2004

Abstract Objective: To evaluate the success of Le Fort’s colpocleisis. **Design:** Retrospective review. **Setting:** Southmead Hospital, Bristol, UK. **Methods:** All women who had undergone a colpocleisis procedure from 1995–2002 at Southmead Hospital, Bristol were retrospectively reviewed. **Main outcome measures:** Satisfaction with operation, recurrence of prolapse, development of urinary incontinence. **Results:** Twenty-seven women underwent Le Fort’s colpocleisis during the 7 years. The median length of time of the operation was 35 min; in two of the cohort the operation was performed under local anaesthesia. The procedure was successful in 89% of the women. There was 100% satisfaction in this remaining group. There were no new cases of urinary incontinence. **Conclusion:** Le Fort’s colpocleisis is a useful procedure in the management of genital tract prolapse in elderly or medically unfit women. Patient selection is of crucial importance, but this caveat applies to all therapeutic interventions.

Keywords Le Fort’s partial colpocleisis · Genital tract prolapse · Medically unfit · Patient satisfaction

Introduction

The condition of women with uterovaginal prolapse is managed expectantly, surgically or with pessaries. Expectant management is appropriate in the presence of small and asymptomatic prolapses, whereas pessaries are useful in women with concurrent disease that may

preclude surgery. Additionally, some women may choose to avoid surgery, even in the absence of significant concurrent disease, and pessaries are useful in such women to control any symptoms of prolapse.

Large and symptomatic pelvic prolapse may be managed with pessaries or surgically. The choice is dependant on the type and degree of prolapse, the woman’s general health, need for coital or reproductive function and the presence or absence of urinary symptoms. In general, woman who are elderly, have no desire for sexual intercourse, or who are medically unfit, have their prolapse symptoms controlled with a pessary. However, these are not universally successful and may not be acceptable to some women.

The choice for surgical management of procidentia (where the cervix and body of the uterus lie outside the introitus) or post-hysterectomy vault prolapse (total eversion of the vagina) lies between procedures that obliterate the vagina (colpocleisis), or elevate the vagina, performed vaginally (sacrospinous fixation), or abdominally, either open or laparoscopically (sacrocolpopexy).

Sacrospinous fixation was popularized by Randall and Nichols in the 1970s and has a reported success rate of 8–97% [1, 2, 3]. The procedure is performed vaginally, resulting in early mobilisation and recovery. The vagina remains patent, and coitus is possible. The fixation is usually only to the right sacrospinous ligament, leading to possible vaginal deviation. However, the less commonly performed bilateral sacrospinous fixation avoids this side-effect [4]. There are a number of complications associated with this procedure, and one series assessed the intra-operative and postoperative complications in 200 women who had undergone unilateral sacrospinous fixation, with a mean patient age of 61.7 years [5]. Complications reported were failures (6%), transient buttock pain (6.1%), chronic buttock pain (1.5%), dyspareunia (3.2%), stress urinary incontinence (3.1%), faecal incontinence (5.6%), pelvic haematoma (one case) and foot drop (one case). In women over the age of 80 years, Nieminen and Heinonen’s study [6] reported a 36% incidence of major intra-operative or postoperative com-

A. J. O’Leary (✉)
The Chilterns, Department of Women’s Health,
Southmead Hospital,
Westbury-on-Trym, Bristol, BS10 5NB, UK
e-mail: amandajoleary@hotmail.com
Tel.: +44-7779115737

S. K. Vyas
Department of Obstetrics and Gynaecology,
Southmead Hospital,
Bristol, UK

plications; 30% of the women required a blood transfusion, 16% had cardiovascular complications and one woman in the series (of 25) died of a pulmonary embolus.

Sacrocolpopexy has been demonstrated in many studies to be superior to the vaginal route of repair as it has a higher success rate of 67–100% [7, 8, 9]. It is also associated with a greater certainty of preservation of coital function, as there is no vaginal deviation. Valaitis and Stanton's series [8] of 41 consecutive sacrocolpopexies reported a cure rate of 88%. In this series, the reported complications were: haemorrhage (2%), stress incontinence (12%), urinary tract infections (19%), dyspareunia (10%) and persistent vaginal discharge (12%).

Colpocleisis involves closure of the vagina and seems to have fallen out of fashion. In addition, recent reports have questioned the use of Le Fort's procedure and feel that it has no place in modern gynaecological practice [10, 11]. The advantage of this technique over sacrospinous fixation and sacrocolpopexy lies in the fact that damage to adjacent organs, major vessels or nerves is unlikely, as the planes of dissection are superficial. The procedure is also quick to perform, with a short recovery time, and can be carried out under local anaesthesia if necessary [12].

We now report a retrospective review of one surgeon's experience with this procedure.

Methods

All women who had had a colpocleisis performed in the past 7 years were identified from the operating diary and hospital computer database. The hospital notes were retrieved, and all cases were included in this review. Information about the women's age, indication for surgery, co-existing morbidity, previous treatment, medical history, urinary symptoms, urodynamic investigations and satisfaction level at 3-month follow-up were recorded. All women were then re-contacted and were given a telephone consultation that assessed their long-term satisfaction and were asked to complete a 10-point visual analogue scale (1 = poor, 10 = excellent) to assess their personal satisfaction with their operation result. As this was a retrospective review, and the procedure had resulted in loss of coital function, we used a visual analogue score to assess personal satisfaction rather than the quality of life prolapse questionnaires that are currently available.

If the women had any problems relating to their operation they were offered a hospital appointment for their problem to be assessed. Because of the age of this group of women and the difficulties involved in travel, sometimes from rural locations, we deliberately did not ask them to attend for a formal clinical examination.

Procedure

Le Fort's obliterative colpocleisis was first described by Neugebauer, and then Le Fort of Paris in 1877 [13], and was used for the treatment of procidentia. The procedure, today, has been modified so that there is partial rather than complete closure of the vagina.

For the surgery, the patient is placed in the lithotomy position, and the vaginal tissues are infiltrated with a local anaesthetic agent containing adrenaline (lidocaine 1% with adrenaline 1 in 200,000) under the usual theatre aseptic procedures. Rectangular strips of vaginal epithelium are then excised from the anterior and posterior vaginal walls. Small-vessel bleeding is controlled with the judi-

cious use of monopolar diathermy. The anterior and posterior strips are then approximated with interrupted 1-vicryl sutures, at the start of the vault or cervical end. The surgeon takes care to approximate the sides of the two surfaces in turn, to produce a symmetrical reduction in the prolapse, with the surfaces at the introitus being approximated last. This produces partial closure of the vagina, with narrow lateral channels left on each side to allow drainage of secretions. Medication for the procedure is covered by a single intravenous dose of antibiotics (cefuroxime 750 µg and metronidazole 500 mg), and a urethral catheter is inserted at the end of the procedure and removed the following morning.

Two of the cohort underwent their procedures under local anaesthesia; one had a vault prolapse, and the other had a procidentia. In these cases, medication for the prolapse was covered by 2.5% lidocaine and 2.5% prilocaine cream (Emla), 1 h pre-operatively. Sedation was not used in these cases, and the surgical procedure was the same as that used under general anaesthesia, except for the suturing. As a time-saving measure, the vaginal skin edges were approximated with runs of continuous suturing, each of four or five bites, rather than with interrupted sutures.

Results

We identified 27 consecutive women who had undergone colpocleisis since 1 January 1995, retrieved all their notes and contacted them all by telephone. The median age at the time of operation was 79 years (range 59–92 years), 25 out of 27 of the women had had pre-existing morbidity; the majority was on medication, and 21 women were on two or more medications (Table 1). Six women had had surgery for prolapse in the past.

Twenty-one of the women were widowed and not sexually active. Of the remaining six women only one was sexually active at the time of operation, but as her husband had a chronic illness, she preferred a Le Fort's procedure for a shorter hospital stay and post-operative recovery period. All the women were specifically asked about sexual activity, and if not sexually active at that time they were all asked about the affect of loss of coital function in the future, in case their situation changed. All the women were accepting of loss of coital function and did not feel that this would be troublesome in the future, even if their situation changed.

Twenty-one of the 27 cases were for failed pessary treatment, 16 cases with a procidentia and five cases with a vault prolapse. Of the remaining six, four cases were for procidentia and two were for vault prolapse where the women had no wish for a pessary.

Although some authors suggest that pre-operative urodynamic investigations are mandatory [14], we performed these investigations only if the symptoms were troublesome and the patient required treatment for it. Six women complained of urinary incontinence pre-operatively, but only four of them had urodynamic investigations prior to surgery, as the other two did not find their symptoms troublesome and had no wish for any treatment for it. Urodynamic stress incontinence was confirmed in three of the women, and detrusor over-activity was found in the fourth. One of the women with urodynamic stress incontinence had a tension-free vaginal tape procedure

Table 1 Details of patients undergoing Le Fort's colpocleisis (*HT* hypertension, *IHD* ischaemic heart disease, *USI* urodynamic stress incontinence, *TAH* total abdominal hysterectomy, *BSO* bilateral salpingoophorectomy, *PFR* pelvic floor repair, *DI* detrusor instability, *NIDDM* non-insulin dependent diabetes mellitus, *DVT* deep vein thrombosis, *Vag hyst* vaginal hysterectomy, *CCF* congestive cardiac failure, *Poly rheum* polymyalgia rheumatica, *PVD* peripheral vascular disease, *URTI* upper respiratory tract infection, *TIA* transient ischaemic attack, *COPD* chronic obstructive pulmonary disease, *TB* tuberculosis, *TVT* tension-free tape)

Patient	Age (years)	Type of prolapse	Pessary treatment	Previous gynaecology surgery	Pre-operative morbidity	Medication (number of drugs)	Urinary symptoms pre/post operatively	Length of stay (days)	Operating complication
MC	70	Procidentia	Failed	Nil	Hip fracture, osteoporosis	1	Nil	2	Nil
PG	67	Procidentia	Failed	Manchester repair	Nil	Nil	Nil	2	Nil
VS	84	Procidentia	Failed	Nil	HT, IHD	3	USI urodynamics	2	Nil
JG	80	Vault	Declined	TAH & BSO, PFR	HT, IHD	4	Nil	4	Nil
BB	79	Procidentia	Declined	Nil	HT	1	Nil	3	Nil
LK	82	Procidentia	Failed	Nil	HT	2	DI urodynamics	4	Bleeding
MW	92	Vault	Failed	TAH	IHD, HT, NIDDM, hypothyroid	3	Nil	3	Nil
JE	73	Procidentia	Failed	Nil	HT	4	Nil	2	Nil
MJ	75	Procidentia	Failed	Nil	DVT, breast cancer	4	Nil	2	Nil
JJ	85	Vault	Failed	Vag hyst	CCF, pulmonary HT	3	Nil	3	Nil
PS	74	Procidentia	Failed	Nil	Thyroid, poly rheum	3	Nil	4	Nil
GD	88	Procidentia	Failed	Nil	HT, PVD, CCF	5	Nil	8	URTI
BA	77	Vault	Declined	Vag hyst, PFR	Breast cancer, Parkinson's	2	Nil	4	Failed
VB	87	Procidentia	Failed	BSO	TIA, CCF, COPD	4	Nil	5	CCF
PW	68	Procidentia	Failed	Nil	HT, NIDDM, CCF, PVD	6	Nil	4	Nil
GC	74	Procidentia	Failed	Nil	HT, IHD, DVT	3	Occasional urgency	2	Nil
EB	72	Procidentia	Failed	Nil	HT	1	Occasional urgency	5	Nil
NS	74	Procidentia	Failed	Nil	HT, TIA, IHD, TB, bowel cancer	5	Nil	2	Nil
EY	87	Procidentia	Failed	Nil	COPD, CCF	5	Catheter	4	Nil
EB	84	Procidentia	Failed	Nil	HT, IHD	2	Nil	2	Nil
HS	83	Procidentia	Declined	Nil	HT	1	Nil	3	Nil
IC	74	Procidentia	Failed	Nil	HT, hiatus hernia	4	USI urodynamics	4	Nil
MB	67	Procidentia	Declined	Nil	HT, CCF	3	Nil	2	Nil
FE	84	Procidentia	Declined	Nil	HT, IHD, CCF	5	Nil	2	Failed
DG	81	Vault + TVT	Failed	Vag hyst	HT, NIDDM, CCF	3	USI urodynamics	2	Failed
DH	59	Vault	Failed	TAH	Nil	Nil	Nil	2	Nil
ES	80	Vault	Failed	Vag hyst, PFR	HT, IHD, CCF	Nil	Nil	2	Nil

performed at the same time as the colpocleisis, and the woman with detrusor over-activity was started on medication. The remaining two women with urodynamic stress incontinence had mild symptoms, and a joint decision was taken with them not to perform a continence procedure. One woman in the cohort had a long-term indwelling urethral catheter at the time of presentation. She was slightly confused, had poor mobility and lived in

a nursing home, and the catheter had been inserted for urinary incontinence.

The duration of surgery was available from the anaesthetic records in 20 cases. The median length of time of the operation was 35 min (range 30–60 min). One woman in the cohort had a vaginal hysterectomy for postmenopausal bleeding secondary to an endometrial polyp as well as a colpocleisis, and this combined procedure took 60 min to be performed.

There was one immediate post-operative complication in the cohort, and that was of vaginal bleeding 2 h post-operatively. This woman was taken back to theatre, and the sutures were taken down to reveal small-vessel bleeding from the bare strip of skin on the posterior vagina. This was controlled with monopolar diathermy, and the sutures were replaced as described above. This woman was on aspirin therapy for cardiovascular disease, which had not been discontinued pre-operatively.

The median day of discharge was 3 days (range 2–8 days). One woman developed heart failure post-operatively and required a hospital stay of 5 days, and another developed a postoperative chest infection and required an 8-day stay.

Three-month follow-up

At 3-month follow-up 25 patients were happy with the operation results and had had no recurrence of their prolapse or any new urinary incontinence. Two women had developed recurrence of their prolapse. One of these was the woman who had had the tension-free tape procedure performed concurrently, and she reported that her incontinence was unchanged since the operation. The other failure was one of the two women who had had the procedure performed under local anaesthesia.

The other five women who had had urinary incontinence pre-operatively (but only three of these had undergone urodynamic studies) reported that their incontinence had not worsened since the operation. There were also no new cases of urinary incontinence.

Long-term follow-up

At the time of the telephone survey the median time of follow-up since the initial operation was 30 months (range 6–84 months). This survey revealed that of the remaining 25 women, 24 were still happy with their operation and had not developed any recurrence of their prolapse. All 25 women were specifically asked about the occurrence of stress urinary incontinence since the operation. There were no new cases, and five women who had been noted to have had urinary incontinence prior to their operation were no worse than they had been prior to surgery.

One woman, who had previously undergone a vaginal hysterectomy and pelvic floor repair, had developed recurrence of her prolapse and had had a sacrospinous fixation performed that had failed after a month, and she had then undergone a sacrocolpopexy, which was successful.

During the telephone survey, the remaining 24 women were also asked about loss of coital function, and none of them reported that this was a problem.

The median visual analogue scale score for personal satisfaction with the operative results was 9 (range 6–10) in 23 of the women. Sadly, one of the cohort died in the

time between the telephone consultation and the visual analogue assessment.

Discussion

The management of vaginal eversion is difficult. If left untreated, there is a risk of decubitous ulceration. Pessaries are often useful, especially if one bears in mind the usually advanced age of this group of patients. However, the surgical management of patients whose pessaries have either fallen out, are causing pain, or are unacceptable, is not clear.

Our experience shows that Le Fort's obliterative colpocleisis is relatively quick to be performed and necessitates a short postoperative hospital stay. In comparison, sacrocolpopexy has an average operating time of 1 h and 29 min, and the patient requires a postoperative stay of 5.4 days. Sacrospinous fixation has an operating time of 25 min and a mean hospital stay of 5.2 days, but serious intra-operative and postoperative complications, although infrequent, have been reported.

In this series, we had one immediate postoperative complication (4%). This occurred in a woman who was on aspirin and whose medication had not been stopped at the time of surgery. None of this series of patients developed postoperative urinary tract infections, perhaps attributable to the routine use of antibiotic prophylaxis. One patient developed cardiac failure, and another developed a chest infection. Both of these complications demonstrate the risks associated with operations under general anaesthetic in patients of relatively advanced age, who often have concurrent medical problems.

Stress urinary incontinence can be unmasked by colpocleisis as the urethra is straightened, but there were no new cases in our series. All the women were asked about urinary incontinence and investigated as appropriate, prior to surgery. In particular, we made sure that, of those women who had had pessaries, none had complained of stress urinary incontinence for the short duration of time that the pessary was in place. We did not subject women to urodynamic studies routinely, as they were elderly, sometimes lived at a distance from our hospital, and because the availability of this specialised investigation is limited.

The operation failed in three out of 27 patients. Two failures occurred within the first 3 months after surgery, and the other at 1 year. Our failure rate of 11% is in keeping with that of 2.4–27% for sacrospinous fixation [1, 2, 3] and 1.3–16% for sacrocolpopexy [7, 8, 9]. Another study looking at follow up of colpocleisis had no treatment failures and a mean follow-up of 24 months in 38 women [15]. However, this procedure varied from ours and was more extensive, as anterior and posterior repairs were performed at the time of colpocleisis.

Pyometra following Le Fort colpocleisis has also been reported [16], but the case occurred after a repeat colpocleisis, where the alteral channels were narrow.

We have not performed a repeat colpocleisis, either in the cohort we are reporting, or subsequently. The risk of pyometra following primary surgery would theoretically be reduced if it were ensured that adequate lateral channels are created to allow drainage of postoperative secretions as occurred in all our procedures. Our routine use of prophylactic antibiotics may also help reduce the incidence of this complication.

The most significant disadvantage of the procedure is the loss of coital function. However, 26 of the 27 women were not sexually active prior to the procedure, and at the 3 month and long-term follow-ups this loss of coital function was not regretted by any of the patients. The high degree of satisfaction that we found reflects the fact that it is possible for one to select women appropriate for this type of surgery. In our series, the discussion regarding coital function took place with a consultant at the time of first assessment in the out-patient clinic and formed part of the decision with the patient, on various different surgical procedures. Women who wished to retain coital function were also identified at this stage, and their surgical management was tailored to take this wish into account.

Colpocleisis can also be performed under local anaesthesia. As already mentioned, two of our cohort had significant postoperative morbidity, one due to cardiac failure and the other due to a chest infection. The technique of a local anaesthetic procedure is attractive, as it avoids the cardio-pulmonary risks of general anaesthesia and allows earlier mobilisation. Our two cases of local anaesthetic colpocleisis were later in the cohort, and one of them subsequently failed. The technique used for suturing involved short runs of continuous sutures, and we suspect that this, rather than the anaesthetic technique, resulted in this failure. We are modifying our technique to account for this possibility.

The investigation of postmenopausal bleeding can be problematic in women who have had a colpocleisis. Clearly, this problem has not arisen in the 20 women in this series who still have a uterus. Speculum examination, blind endometrial biopsy or hysteroscopy may well not be possible, as the lateral channels are very narrow. However, trans-abdominal ultrasound scans or magnetic resonance imaging may be useful.

In our experiences, Le Forte's colpocleisis is a useful procedure. Clearly, patient selection is of crucial importance, but this caveat applies to all therapeutic interventions.

References

1. Randall CL, Nicholas DH (1971) Surgical treatment of vaginal eversion. *Obstet Gynecol* 38:327–332
2. Meschia M, Bruschi F, Amicarelli F, Pifarotti P, et al (1999) The sacrospinous vaginal vault suspension: critical analysis outcomes. *Int Urogynecol J Pelvic Floor Dysfunct* 10:155–159
3. Maher CF, Cary MP, Slack MC, et al (2001) Uterine preservation or hysterectomy at sacrospinous colpopexy for utero-vaginal prolapse? *Int Urogynecol J Pelvic Floor Dysfunct* 12:381–384
4. Pohl JF, Frattarelli JL (1997) Bilateral transvaginal sacrospinous colpopexy: preliminary experience. *Am J Obstet Gynecol* 177:1356–1361
5. Lovatsis D, Drutz HP (2002) Safety and efficacy of sacrospinous vault suspension. *Int Urogynecol J Pelvic Floor Dysfunct* 13:308–313
6. Nieminen K, Heinonen PK (2001) Sacrospinous ligament fixation for massive genital prolapse in women aged over 80 years. *BJOG* 108:817–821
7. Benson JT, Lucente V, McClellan E (1996) Vaginal versus abdominal reconstructive surgery for the treatment of pelvic support defects: a prospective randomized study with long-term outcome evaluation. *Am J Obstet Gynecol* 175:1418–1421
8. Valaitis SR, Stanton SL (1994) Sacrocolpopexy: a retrospective study of a clinician's experience. *BJOG* 101:518–522
9. Carey Marcus P, Dwyer Peter L (2001) Genital prolapse: vaginal versus abdominal route of repair. *Curr Opin Obstet Gynecol* 13:499–505
10. Toozs-Hobson P, Boos K, Cardozo L (1998) Management of vaginal vault prolapse. *Br J Obstet Gynaecol* 105: 13–17
11. Rust JA, Botte JM, Howlett RJ (1976) Prolapse of the vaginal vault. Improved techniques for the management of the abdominal approach or vaginal approach. *Am J Obstet Gynecol* 125:768–776
12. Denehy TR, Choe JY, Gregori CA, et al (1995) Modified Le Fort partial colpocleisis with Kelly urethral placcation and posterior colpoperineoplasty in the medically compromised elderly: a comparison with vaginal hysterectomy, anterior colporrhaphy, and posterior colpoperineoplasty. *Am J Obstet Gynecol* 173:1697–1701
13. Berlin F (1881) Three cases of complete prolapsus uteri operated upon according to the method of Leon Le Fort. *Am J Obstet Gynecol* 14:866–870
14. Barrington JW, Edwards G (200) Post hysterectomy vault prolapse. *Int Urogynecol J Pelvic Floor Dysfunct* 11:241–245
15. Cespedes RD, Winters JC, Ferguson KH (2001) Colpocleisis for the treatment of vaginal vault prolapse. *Tech Urol* 7:152–160
16. Kohli N, Sze E, Karram M (1996) Pyometra following Le Fort colpocleisis. *Int Urogynecol J Pelvic Floor Dysfunct* 7:264–266