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Title (type in CAPITAL LETTERS, leave one blank line before the text)	
<b>LONGTERM FOLLOWUP OF OPEN AND LAPAROSCOPIC COLPOSUSPENSION: A CASE-CONTROL STUDY</b>	

### Aims of Study

Laparoscopic colposuspension (LC) remains a controversial technique almost a decade after its development (1) It is not yet accepted as a first line treatment (2), mainly due to a lack of objective followup data. So far, only two randomised controlled series have been published, both showing LC to be inferior to traditional open colposuspension (OC), (3,4). For this paper we performed a case control study to compare the two procedures

### Methods

50 patients who had undergone laparoscopic colposuspension between 1994 and 1997 were compared to the same number of women seen previously as part of a longterm followup study of open colposuspension. The study design included questionnaire, clinical assessment, flowmetry, pad test and ultrasound imaging for the assessment of bladder neck position and mobility as well as trigonal deformation. Both procedures were performed at the same institutions, resulting in similar suture placement, and all with involvement of the second author (PDW), between 1991 and 1997. Prior to analysis patients were matched for the five most important confounding variables, i.e., age at operation, length of followup, body weight, previous procedures and preop. urodynamic diagnosis (see table 1). This involved substituting OC patients in pairs until body weight was well matched without affecting matching for other variables. All followup assessments were performed by the first author (HPD).

	OC	LC	P
Age at operation	51.3 (12.2)	51 (10.4)	0.699
Length of followup (yrs)	3.4 (1.2)	3.3 (1.2)	0.466
Body weight (kg)	73.6 (11.9)	71.3 (12.4)	0.565
Prev inc./prol. procedures	6/50	4/50	0.505
Preop urodynamics	50 GSI, 1 DI, 1 VD	50 GSI, 3 DI, 1 VD	0.400

**Table 1:** Confounding variables used for matching (n= 50 in both groups)  
(X<sup>2</sup> for qualitative, paired t-test for quantitative data, standard deviation in parentheses).

### Results

Average length of followup was 3.3 years in the laparoscopic and 3.4 years in the open colposuspension group. Table 2 shows subjective symptoms and the proportion of completely asymptomatic patients.

Symptoms	OC	LC	p
Stress Incontinence	13 (26%)	12 (24%)	n.s.
Urge Incontinence	20 (40%)	17 (34%)	n.s.
Frequency	12 (24%)	4 (8%)	0.02
Nocturia	12 (24%)	4 (8%)	0.02
Asymptomatic	15 (30%)	27 (54%)	0.03

**Table 2:** Subjective findings 1.5-5.5 years after laparoscopic and open colposuspension ( $X^2$  test)

Table 3 demonstrates ultrasound findings. Laparoscopic colposuspensions showed significantly more bladder neck descent and less evidence of trigonal distortion.

US parameters	OC	LC	p
Bladder neck position at rest (cm)	2.74 (.30)	2.75 (.39)	n.s.
Bladder neck descent on Vals. (cm)	0.86 (.46)	1.18 (.64)	0.005
Urethral rotation on Valsalva (deg)	18 (11.1)	22 (13.6)	n.s.
Funnelling (n)	7	11	n.s.
Colposuspension ridge (n)	38	27	0.02
Depth of colposuspension ridge (mm)	2.1 (1.6)	2.2 (2.2)	n.s.

**Table 3:** Ultrasound findings 1.5-5.5 years after open and laparoscopic colposuspension ( $X^2$  for qualitative, paired t-test for quantitative data, standard deviation in parentheses).

## Conclusion

This study is limited by the fact that it is not a randomised controlled trial. However, as is evident from the presented data, both groups were well matched for the tested parameters. The results show nonsignificant differences in stress and urge incontinence 1.5- 5.5 years after open and laparoscopic colposuspension, with significantly less frequency and nocturia in the laparoscopic group. Significantly more patients were completely asymptomatic after LC. On ultrasound imaging OC appeared to more commonly result in permanent distortion of the trigone (colposuspension ridge), with significantly less bladder neck descent on Valsalva.

The data presented here is not consistent with the two published randomised controlled trials (Burton, 1999, Su, 1997) in that the success rate of our OC patients was relatively low, resulting in a more balanced comparison with LC. Consequently it appears from our data that, in the population assessed here, laparoscopic colposuspension is a valid alternative to the traditional open procedure. Less obvious elevation and distortion of the trigonal area does not seem to be associated with faster recurrence of stress incontinence at a mean followup of 3.3 years.

## Literature

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