Original Article

Colposuspension Success and Failure: A Long-term Objective Follow-up Study

H. P. Dietz and P. D. Wilson
Dunedin School of Medicine, University of Otago, Dunedin, New Zealand

Abstract: The Burch colposuspension is regarded as one of the most successful procedures for the operative treatment of genuine stress incontinence. In this study the authors have attempted to define long-term subjective and objective success rates. Of 121 patients operated on between 1985 and 1995, 83 were fully assessed: 77% (64/83) had no stress leakage, but 41% (34/83) were suffering from urge incontinence. On clinical assessment 6 cases of uterine prolapse or vault descent, 21 cystoceles (25%) and 47 rectoceles or rectoenteroceles (57%) were detected, all but 8 being asymptomatic. On ultrasound 64/83 patients (77%) had a normal result. Ten patients demonstrated bladder neck hypermobility and in 9 there was urethral funneling without hypermobility. Survival analysis showed that the likelihood of all types of failure and of abnormal ultrasound findings increased over time. It is proposed that long-term results after incontinence surgery be presented as survival analysis.

Keywords: Colposuspension; Failure; Long-term results; Perineal ultrasound; Ultrasound

Introduction

The Burch colposuspension is currently regarded as one of the most successful procedures for the operative treatment of genuine stress incontinence (GSI) [1]. Long-term success rates between 50% and 80% after 5–20 years have been claimed [2–7]. However, the available follow-up data are often lacking in objective information [1]. Recently transperineal ultrasound has been shown to be a useful non-invasive assessment method in urogynecology. Advantages claimed are better patient compliance and more detailed anatomical information than with videocystourethrography [8,9]. The aim of this study was to carry out a long-term follow-up of women who underwent Burch colposuspension between 1985 and 1995, including questionnaire, home pad test, urinary diary and an anatomical assessment by transperineal ultrasound.

Patients and Methods

The study included 121 women who had undergone a Burch colposuspension performed by one of the authors between January 1985 and March 1995, and whose records allowed unequivocal identification. All patients had been diagnosed as suffering from GSI on videourodynamic testing; 1 had also shown evidence of mild detrusor instability. The study protocol was approved by the Southern Regional Health Authority Ethics Committee (96/06/063). The procedure had been carried out by suturing the paravaginal fascia to the iliopubic ligaments with two to three non-absorbable sutures (Ethibond) on each side, to effect bladder neck elevation to the extent that the space between the proximal urethra and the pubic arch admitted one finger.

Assessment was carried out by a structured questionnaire, 5-day urinary diary, home pad test, clinical examination and transperineal ultrasound using an Aloka SSD 500 portable scanner with 3.5 MHz curvilinear probe. Ultrasound was performed <30 min after bladder emptying and in the supine position. Bladder neck descent (BND), rotation of the proximal urethra and opening of the proximal urethra on Valsalva maneuver were recorded [9].

Correspondence and offprint requests to: Dr H. P. Dietz, Fellow in Urogynaecology, 1/68 Brook St, Coogee 2034 NSW, Australia.
Anatomical failures (i.e. of elevation) were defined as bladder neck hypermobility (BND ≥ 1.5 cm). Functional failures were defined as opening of the proximal urethra without hypermobility in patients with symptoms of stress incontinence. Typical ultrasound findings after successful colposuspension are shown in Fig. 1. Figure 2 demonstrates an anatomical failure, i.e. recurrent hypermobility and funneling after colposuspension. Ultrasound was performed on all 83 patients, but only 63 home pad tests and 53 urinary diaries were returned and were available for analysis.

All terminology conforms to that used by the International Continence Society unless stated otherwise. Descriptive statistics were carried out on a microcomputer using Microsoft Excel. The $\chi^2$ test was used for qualitative variables. Univariate analysis was carried out to test correlations between data, as multivariate logistic regression models could not be fitted owing to inadequate data. Kaplan–Meier analyses were used to relate symptoms and ultrasound signs to length of follow-up after colposuspension.

Results

Of the 121 patients operated on between January 1985 and March 1995, 119 were still alive: 83 (70%) were fully assessed in the setting of a research clinic after an average of 6.1 years (range 2–12.2). The average weight was 75 kg (range 50–108). Average height was 162 cm (range 147–180). The body mass index (BMI) could be calculated for 75 women: the average was 29 (range 20–41). Fifteen women were of normal body weight, 31 were mildly obese (BMI 25–30), 28 were moderately obese (BMI 30–40) and 1 was severely obese (BMI>40). Body weight correlated positively with symptoms of stress incontinence (paired t-test, $P = 0.004$). Prior to their colposuspension 10 patients had undergone an anterior vaginal repair and 1 had had a previous colposuspension. After the index operation 2 patients had had further surgery, both periurethral injections with macroplastique. In both cases the procedure had been unsuccessful.

On questioning 36 patients were completely dry; 6 leaked only rarely, at most once a month; 41/83 patients (49%) experienced leakage more frequently (Table 1); 23% (19/83) had symptoms of stress leakage on questioning, and 41% (34/83) were suffering from urge incontinence. Two patients had symptoms of voiding difficulty, 17 complained of frequency (>8 voids/day), and 8 of nocturia (>2/night) (Table 2).

Seventy-six percent (47/62) of the women had negative home pad tests. Of the 15 with positive pad tests (>2 g) average loss was 32.8 g (range 3–102). The results of urinary diaries ($n = 53$) are given in Table 3.

Fig. 1. Successful colposuspension on translabial imaging. Image on left is at rest, on right is on Valsalva maneuver. Symphysis pubis is on right of each image.