

Compare using sutures versus mesh during laparoscopic Burch colposuspension in patients with stress urinary incontinence

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Abstract

Objectives: to assess the effectiveness of laparoscopic colposuspension with sutures vs mesh in individuals with stress urine incontinence. **Methods:** 50 patients were split into two groups. The 1st group consisted of 25 patients treated with sutures and the 2nd group consisted of 25 patients treated with mesh; both groups were identified with real stress incontinence using history, physical examination, direct observation, and/or cystometry. At this time, the diagnosis was made based on a history of leakage while coughing, laughing, sneezing, or engaging in strenuous exercise. All of the patients had a hypermobile urethra, as shown by the Q-tip test, which we defined as a more than 60-degree shift with Valsalva. Excluding patients with urge incontinence. At 12 months, a nurse (KS) contacted patients by telephone and asked just one subjective question: "Are you dry, better, or not improved?" In this cohort of 50 patients, 25 patients had laparoscopic colposuspension with sutures and 25 patients received laparoscopic colposuspension with mesh. All patients were monitored for a period of one year. In the first group, ages varied from 27 to 68, with a mean of 41. Their average weight was 88 kilogrammes, ranging from 67 to 109 kg. Second group ages varied from 29 to 65, with a mean of 40. They weighed between 70 and 105 kilogrammes, with an average of 83. A nurse (KS) contacted patients by telephone and asked just one subjective question: "Are you dry, better, or not improved?" Twelve months after surgery, all patients were accessible for examination. pertaining to the first group treated by sutures (25 patients) 19 of them were dry (76 percent), 3 were improved (12 percent), and 3 were not improved (12 percent). Regarding the second mesh-treated group (25 patients), 17 (68 percent) were dry, 3 (12 percent) were better, and 5 (20 percent) were not improved. Patients' outcomes with sutures in laparoscopic colposuspension were similar to those with mesh and staples in terms of success rate, surgical time, hospitalisation length, and post-operative problems.

Keywords: laparoscopy, colposuspension, incontinence.

1. Introduction

Burch released an essay in 1961 explaining his treatment strategy for stress urine incontinence [1].

This technique has become the benchmark against which all others are evaluated. In an effort to make this surgery less morbid, numerous techniques and modifications have been developed throughout time. In an effort to reduce hospitalisation and recuperation durations, the laparoscopic method has been used for Burch procedures and several other surgeries during the last decade. There is an abundance of research on new laparoscopic treatments for stress incontinence, but there is a noteworthy lack of consensus about procedures, patient selection, and relative effectiveness. It has been mentioned several times that there are more than one hundred surgeries for stress incontinence but just one for appendicitis. This was true before to the development of laparoscopy, however today the appendix may be removed either conventionally or laparoscopically. A laparoscopic surgery cannot be considered equal to a standard laparotomy unless it delivers the same outcomes [2].

If a surgery suspends the paravesical tissues from Cooper's ligament, it is essentially a Burch colposuspension, regardless of the method. In the last decade, a number of approaches have been developed for this purpose, all of which employ the same underlying concept but different suspending materials [2,3].

Some have urged for laparoscopic sutures to be put in the conventional method, but others have pushed for staple fixation to alleviate the discomfort of laparoscopic suturing [4,5].

The suspension may also be accomplished using prolene hernia mesh and helical hernia staples, which is the approach with which we are concerned with. Ou initially reported this approach in 1993 [6].

Despite the fast evolution of technology, comparable statistics on the outcomes of different procedures are few. This retrospective case series by a single surgeon compares the outcomes of laparoscopic mesh and staple Burch to those of the conventional open surgery.

2. Patients & Methods

Between August 2020 and June 2022, fifty individuals were separated into two groups. The 1st group consisted of 25 patients treated with sutures and the 2nd group consisted of 25 patients treated with mesh; both groups were identified with real stress incontinence using history, physical examination, direct observation, and/or cystometry. At this time, the diagnosis was made based on a history of leakage while coughing, laughing, sneezing, or engaging in strenuous exercise. All of the patients had a hypermobile urethra, as shown by the Q-tip test, which we defined as a more than 60-degree shift with Valsalva. Excluding patients with urge incontinence. We have completed 50 instances, all of which were conducted by the same surgeon at the same institution. The technology, notably the availability of cystometry, and the surgeon's expertise have increased over the years. The operations were performed under endotracheal general anaesthesia. If necessary, a Foley catheter and uterine manipulator are placed. The procedure was performed via three ports, including a 10 mm umbilical port for the laparoscope, a 10 mm port in

the lateral area of the lower left quadrant, and a 5 mm port in the lateral lower right quadrant. About an inch cranial to the pubic bone, the space of Retzius was penetrated by sharp and blunt dissection with scissors, cautery, or a harmonic scalpel. Cooper's ligament was revealed and areolar tissue and fat were removed. The surgeon put his left hand into the vagina and palpated the Foley bulb between his index and second fingers. Thus, the fingers held the neck of the bladder on each side of the catheter bulb and delineated the region to be stapled. The pubovesicocervical fascia was disclosed when the bladder was medially deflected with a grasper. About a rectangle of Prolene mesh was made. It was placed through one of the ports and stapled to the paravaginal tissues and Cooper's ligament. One half was finished before the other was started. There was little to no bleeding seen. The region was lavaged with Ringer's lactate, and the hernia stapler was used to reapproximate the peritoneum. Cystoscopy performed exclude bladder perforation or stapling. If staples were shown to be perforating the bladder, they were extracted using a stiff cystoscopy grasper. If it was believed that removal of a staple might jeopardise the repair, i.e., if the perforating staple was located in the lateral bladder, the space of Retzius was re-entered and the repair was evaluated. The patients were held overnight, and the Foley was withdrawn between 12 and 24 hours afterwards. For the first two voidings, residual urine volumes were measured and self-catheterization was taught if required.

At 12 months, a nurse (KS) contacted patients by telephone and asked just one subjective question: "Are you dry, better, or not improved?"

3. Results

There were 50 patients in this series, of whom 25 patients underwent laparoscopic colposuspension by sutures and 25 patients underwent laparoscopic colposuspension by mesh. All patients were followed up for 12 months. 1st group Ages ranged from 27 to 68 years, average 41. Their weight ranged from 67 to 109 kilogram, average 88.2nd group Ages ranged from 29 to 65 years, average 40. Their weight ranged from 70 to 105 kilogram, average 83.

Follow-up was by telephone call from a nurse (KS) and consisted only of the following subjective question: 'Are you dry, improved or not improved?'

All patients were available for evaluation at 12 months since surgery. Regarding 1st group managed by sutures (25 patients) Of this number, 19 (76%) were dry; 3 (12%) were improved and 3 (12%) were not improved. Regarding 2nd group managed by mesh (25 patients) Of this number, 17 (68%) were dry; 3 (12%) were improved and 5 (20%) were not improved.

4. Discussion

Clearly, the objective of treatment is to dry up the incontinent patient. Age-related genuine stress urine incontinence is a substantial health concern for women. The objective of surgery is to get the best possible result with little morbidity at the lowest possible expense. The

expenses of both open and laparoscopic Burch procedures have been compared in the literature [7]. Clearly, the importance of financial analysis depends on the surgeon's choice for single-use equipment, as well as a dynamic and competitive marketplace, with the surgeon's expertise lowering operating time. If the findings are not compromised, a shorter hospital stay and a quicker time to return to work may be more relevant benchmarks. Although these aspects are not examined in this article, the shorter hospital stay needed by the laparoscopic technique is an evident advantage. However, it is irrelevant unless the success rates of the operations are equal. If a surgery has more problems or a lower success rate, it is doubtful that many surgeons would choose it just because it has a shorter recovery period.

The difficulty in determining the effectiveness of laparoscopic Burch operations is due to the technique's constant evolution and operator expertise. There is considerable heterogeneity in the selection of patients and success evaluation criteria. The goal of this case study series was to examine and contrast the outcomes of different strategies. We believe this will generate further interest in less invasive anti-incontinence techniques.

The success rate of the Burch method has been reported to range between 75% and 90% [7,8,10–12]. 72 percent of patients treated with sutures were dry and 88 percent improved, whereas 68 percent of patients treated with mesh were dry and 80 percent improved; this difference was not statistically significant. In the examined groups, there were no early problems that increased hospitalisation or necessitated an urgent reoperation.

Morbidity rates are low and the majority of problems are mild for both methods, but it is indisputable that open surgery requires a lengthier hospital stay than endoscopic surgery [9]. In the past, it was typical to detain patients in the hospital for 5–7 days after laparotomy and to recommend 4–6 weeks of rest and rehabilitation. Patients undergoing laparoscopy are often released within 48 hours or less in the present context, with minimal evidence indicating patient satisfaction with the reduced inpatient duration. Women who have laparoscopic operations are released within 24 to 36 hours. Because they have less incisional pain, they often return to their routine activities sooner. Obviously, a shorter hospital stay, less discomfort, and a quicker return to regular activities result in cost savings. In this series, patients from both groups had a hospital stay of less than 48 hours and equivalent outcomes and success rates, without a greater incidence of complications or short-term morbidity. These findings suggest that it would be prudent to continue investigating laparoscopic procedures of Burch retropubic colposuspension in bigger series with a more rigorous research design, especially in terms of patient selection, complications, and outcomes.

5. Conclusion

In terms of success rate, operational time, hospitalisation duration, and post-surgical complications, the result of laparoscopic colposuspension with sutures was equivalent to the outcome with mesh and staples.

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