

# Minilaparotomy myomectomy: A minimally invasive alternative for the large fibroid uterus

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## KEYWORDS:

Myomectomy;  
Minilaparotomy;  
Minilap;  
Fibroid;  
Myoma;  
Leiomyoma

## Abstract

**STUDY OBJECTIVE:** To assess the efficacy of performing myomectomies through 3- to 6-cm incisions for the removal of myomas up to 14 cm in diameter.

**DESIGN:** A retrospective analysis of 139 myomectomies performed at our center from January 1995 through December 2003 (Canadian Task Force classification II-3).

**SETTING:** A suburban medical center, part of a large prepaid health maintenance organization.

**PATIENTS:** One hundred thirty-nine women.

**INTERVENTIONS:** Myomectomies were performed through 3- to 6-cm suprapubic cruciate incisions using atraumatic elastic retractors with or without laparoscopic assist. Myomas were morcellated with a scalpel before being enucleated. The uterus was repaired in a classic three-layered closure in all cases. All procedures were performed in the ambulatory surgery unit of our hospital, which is part of the main operating room.

**MEASUREMENTS AND MAIN RESULTS:** The median age of the patients in this series was 30.0 years (range 23–56 years). The median weight of the myomas removed was 275.0 g (range of 30–975 g). One hundred thirty-seven (98.5%) of 139 patients were discharged in 23 hours or less, with 24 patients leaving within 4 hours and 61 within 8 hours. The median length of stay was 6.0 hours, with two patients remaining hospitalized for 48 hours. The median operating time was 110 minutes (range 44–260 min). Estimated blood loss ranged from 50 to 2000 mL, with a median of 300 mL. Three hysterectomies were performed: one as an emergency for hemorrhage and two for recurrent myomas. Three patients developed wound seromas, and one developed a wound infection.

**CONCLUSIONS:** Minilaparotomy myomectomy is a safe, effective minimally invasive alternative to laparoscopic myomectomy. Early discharge and return to normal activities is comparable to laparoscopy and is far more cost effective. It affords the ability to palpate the uterus and close the myometrial defect easily with a standard three-layered closure making it particularly suitable for gynecologists with limited laparoscopic suturing skills.

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As more articles debating the prevalence of hysterectomies appear in the lay press and on the Internet, increasing numbers of women are demanding alternative procedures.

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A recent *New York Times* article<sup>1</sup> decrying the prevalence of hysterectomies states that by the age of 60, one in three women in the United States will have had her uterus removed. By comparison, in Italy the figure is 1 in 6 women, while in France, it is 1 in 18. Of the 600 000 hysterectomies performed annually in the United States, one-third are done for leiomyomata.<sup>2</sup> This number rises dramatically for women over the age of 40 and for those in certain ethnic

groups. For African-American women, 61.3% of hysterectomies are done for leiomyomata; and for the 45 to 54 years-of-age group, 53% of all hysterectomies, regardless of race, are done for this indication. It is estimated that more than 25% of women over the age of 36 have one or more leiomyomata with 50% of these being symptomatic.<sup>3</sup> These symptoms include menometrorrhagia, dyspareunia, pelvic pressure, urinary frequency, and the presence of a pelvic mass.<sup>4</sup>

The treatment of symptomatic leiomyomata for women who have completed childbearing has been, in the vast majority of cases, hysterectomy. Perimenopausal women often are given no choice other than hysterectomy, with myomectomy offered in only a small number of cases. Recent advances in the nonsurgical management of leiomyomata including medical management with gonadotropin-releasing hormone (GnRH) analogs or antagonists, mifepristone, raloxifene, and progesterone receptor modifiers as well as uterine artery embolization have shown promising results for these patients, but they are inappropriate for those women wanting to preserve childbearing or for infertile women because none have been shown to enhance fertility.<sup>5</sup>

Certainly, for those women in the reproductive age group wanting to maintain fertility, a myomectomy remains the "gold standard." Abdominal myomectomy, however, is associated with significant morbidity including excessive blood loss, a high rate of blood transfusions, infection, and postoperative adhesions.<sup>6</sup> Recurrence rates have been reported to be between 5% and 30%, with 20% to 25% of patients requiring a subsequent hysterectomy.<sup>7</sup> Laparoscopic myomectomy is an alternative to the abdominal approach with fewer complications, shortened hospital stay, and less disability,<sup>8,9</sup> but it is a difficult and tedious operation. Other disadvantages of the laparoscopic approach are size limitations, increased operating time, inability to palpate the uterus, and the need for advanced technical skills, especially in suturing. Recent reports of uterine rupture following laparoscopic myomectomy<sup>10,11</sup> emphasize the importance of adequate closure of the myometrial defect. Rupture of the uterine wall during pregnancy also has been reported after laparoscopic myomectomy for a pedunculated leiomyoma indicating that inadequate suturing is not the only factor involved in this serious complication.<sup>12</sup>

We have found that the use of a 3- to 6-cm suprapubic minilaparotomy incision significantly reduces operating time by allowing us to suture the myometrial defect using a conventional three-layered closure. It also allows us to palpate the uterus and more rapidly remove large specimens by morcellation. This small, cosmetic incision does not increase hospital stay or subsequent disability.

## Materials and methods

We reviewed the medical records of all patients who underwent myomectomy at the Kaiser Permanente Medical

Center in San Rafael, California, from January 1, 1995 through December 31, 2003. Those patients who underwent laparoscopic myomectomy alone or had a standard open myomectomy (abdominal incision >6 cm) were excluded. Permission was obtained from the local research committee to perform the review, which was done by the author. Uterine weights were obtained from the pathology reports, which are all on an electronic database. Operating times were listed both on an operating room computer database and in the operating room nurses record in the patients' hospital charts. Follow-up data on patients referred from other Kaiser Permanente facilities were obtained from our regional computerized data systems. One hundred thirty-nine patients underwent minilaparotomy myomectomy during the 8-year time period studied. Of those, 66 patients had laparoscopic-assisted minilaparotomy myomectomy during which the laparoscope was used to identify and mark the incision site or to perform adhesiolysis. The vast majority of those procedures were done during our early experience. For the last 4 years, virtually all myomectomies were done without the use of the laparoscope.

Although most of the data followed a normally distributed pattern, as is typical of utilization data such as these, the data were skewed to the right due to a few outlier values. Therefore, we calculated medians, ranges, and the interquartile range using SAS software Version 8 (SAS Institute, Cary, NC).

All patients with leiomyomata complaining of "bulk" symptoms and desiring intervention were offered minilaparotomy myomectomy as one of their treatment options. Those who had completed childbearing also were offered vaginal or minilaparotomy supracervical hysterectomy, uterine artery embolization, or medical therapy if they were perimenopausal. Laparoscopic myolysis also was offered as a treatment option. We performed 102 myolysis procedures from 1994 through 2001, but have not done any in the past 3 years.

All patients underwent pelvic ultrasonography to assess uterine size and individual myoma size, number, and location. Those with equivocal sonography and those with multiple myomata desiring future fertility underwent magnetic resonance imaging studies to "map" the uterus more accurately. Those with abnormal uterine bleeding underwent diagnostic office hysteroscopy and hysteroscopic resection at the time of myomectomy if type 0 or type 1 submucous myomas were present. Type 2 myomas larger than 2 cm were removed trans-myometrially. Those patients not desiring future fertility with more than five measurable myomas on imaging studies were strongly urged to undergo hysterectomy or uterine artery embolization. The "ideal" patient for this procedure is thin with a single large anterior fundal myoma. We have, however, performed this procedure on patients weighing as much as 250 pounds and those with multiple or posterior myomas.

Pretreatment with GnRH analogs was used in all patients in the early part of the study, but this practice has largely

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