

# Microlaparoscopy and a GnRH Agonist: a Combined Minimally Invasive Approach for the Diagnosis and Treatment of Occlusive Salpingitis Isthmica Nodosa Associated With Endometriosis

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## ABSTRACT

**Objective:** To evaluate whether occlusive salpingitis isthmica nodosa associated with endometriosis can be diagnosed by microlaparoscopy and managed with medical therapy using leuprolide acetate.

**Methods:** This was a prospective, nonrandomized study conducted at a university hospital and a private community hospital. It included women with occlusive salpingitis isthmica nodosa associated with endometriosis. Diagnosis of salpingitis isthmica nodosa was made via microlaparoscopy with chromotubation. Patients with occlusive salpingitis isthmica nodosa were treated with leuprolide acetate 3.75 mg administered monthly for 6 months.

**Results:** Tubal patency in occlusive salpingitis isthmica nodosa following medical therapy with leuprolide acetate was evaluated. Thirteen of 16 (81.3%) women with bilateral salpingitis isthmica nodosa achieved patency of both fallopian tubes following treatment with leuprolide acetate; 3 of 16 (18.8%) developed patency in one of the fallopian tubes. All 5 women with unilateral SIN demonstrated bilateral patency following medical therapy.

**Conclusion:** Diagnosis of occlusive salpingitis isthmica nodosa can be made by microlaparoscopy. These preliminary results suggest that medical therapy with leuprolide acetate may be the first-line treatment modality for women with occlusive salpingitis isthmica nodosa associated with endometriosis, possibly avoiding a more invasive surgical procedure.

**Key Words:** Microlaparoscopy, Endometriosis, Salpingitis isthmica nodosa, Infertility, GnRH agonist, Leuprolide acetate.

## INTRODUCTION

Salpingitis isthmica nodosa (SIN) is associated with infertility and the occurrence of tubal pregnancy.<sup>1-5</sup> Tubal involvement with endometriosis has been observed in approximately 28% of SIN.<sup>6</sup> Moderate or large numbers of endometrial-like stromal cells accompany the diverticula in more than half of the patients.<sup>7</sup> Intramucosal endometriosis has been found in 14.3% of excised tubal segments from women with uterotubal junction obstruction.<sup>8</sup> Similar to adenomyosis of the uterus, glands appear to stimulate muscular growth, with subsequent mural thickening.<sup>3,7,9</sup> The diagnosis of SIN is usually made by hysterosalpingography (HSG).

However, an isthmical nodule noted during laparoscopy is characteristic of SIN.<sup>10</sup> Recent refinements in surgical technique and instrumentation have focused attention on minimally invasive microlaparoscopic surgery.<sup>11-13</sup> Since Chiari<sup>14</sup> first described SIN in 1887, a myriad of treatment modalities have been described. Surgical management is generally undertaken when the condition is bilateral and associated with infertility. More recently, tubocornual resection and anastomosis (TCA) by microsurgery for occlusion due to SIN has been advocated.<sup>10</sup> Some have suggested bypassing microsurgery, and proceeding directly to IVF.<sup>15</sup>

The objectives of this study were twofold: The first was to perform a minimally invasive microlaparoscopic procedure in women with chronic pelvic pain, and if endometriosis was found, to evaluate for the presence of occlusive SIN. The second aim of this study was to measure the efficacy of leuprolide acetate for achieving tubal patency in patients with occlusive SIN associated with endometriosis.

## METHODS

A prospective, nonrandomized study was performed between January 1998 and October 2003 with 87 consecutive women who underwent microlaparoscopic evaluation for chronic pelvic pain in the ambulatory surgery center of a university-affiliated hospital and a private community hospital. All patients had a history of pelvic pain of 6-months' duration or longer, and failed conservative

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medical therapy with oral contraceptives and nonsteroidal anti-inflammatory (NSAIDS) medications. Twenty-one women (median age 27.9 years, range 21 to 41; median weight 147.5 lbs, range 100.9 to 229.1; median parity 0.43, range 0 to 2) noted to have occlusive salpingitis isthmica nodosa were included in the study. Occlusive SIN was diagnosed under microlaparoscopic visualization when an isthmic nodule with extravasation of methylene blue to the serosa without spillage was noted (**Figure 1**). Women diagnosed with SIN received medical therapy with leuprolide acetate 3.75 mg, administered intramuscularly at monthly intervals for 6 months.

Following completion of medical therapy, all patients underwent a hysterosalpingogram to evaluate for tubal patency.

## RESULTS

All 21 women with occlusive SIN were included in the analysis. Treatment with leuprolide acetate resulted in increased tubal patency. Thirteen of 16 (81.3%) women with bilateral SIN achieved bilateral tubal patency following treatment with leuprolide acetate; 3 of 16 (18.8%) achieved unilateral tubal patency. The 5 women with unilateral SIN demonstrated bilateral tubal patency following medical therapy. The mean number of unblocked tubes as a result of medical therapy per patient was 1.62



**Figure 1.** Uterine cornua seen at microlaparoscopy with salpingitis isthmica nodosa nodule revealing serosal extravasation of methylene blue.

(95% CI, range, 1.41 to 1.83). Staging of endometriosis with associated SIN is summarized in **Table 1**.

## DISCUSSION

Salpingitis isthmica nodosa is an acquired lesion analogous to adenomyosis of the uterus. In the present study population, 21 of the 87 women with endometriosis were noted to have occlusive SIN (76% bilateral, 24% unilateral). The incidence of SIN in the general population has been reported to be between 0.6% and 11%.<sup>3,16</sup> The incidence of SIN in this study was 24.1%. The increased incidence of SIN in this patient population is perhaps due to the fact that all 87 women had endometriosis. Although the diagnosis of SIN is readily made by hysterosalpingography, laparoscopic observation of a proximal tubal nodule is likewise characteristic. An evaluation of the pelvis with microlaparoscopy through a 2-mm port affords an excellent minimally invasive view of the pelvis, providing additional information not available with a hysterosalpingogram alone. Microlaparoscopy provides better cosmesis than does traditional laparoscopy,<sup>17</sup> while providing comparable efficacy for diagnosing endometriosis. Leuprolide acetate is a long-acting GnRH analog that decreases secretion of gonadal steroids. Tissues dependent on gonadal steroids such as endometriosis become quiescent following treatment with a GnRH analog. The women in this study had an excellent response for achieving tubal patency following treatment with leuprolide acetate. Although several pregnancies occurred following achievement of patency from occlusive SIN, some patients did not desire pregnancy immediately and therefore pregnancies were not included in the analysis. Until now, the most common treatment modality for occlusive SIN has been microsurgical resection of the lesion or canalization of the tube. The results of this preliminary study suggest that patients with occlusive SIN associated with endometriosis may benefit from medical therapy using a GnRH analog to achieve tubal patency, perhaps avoiding the more invasive microsurgical resection and tubocornual anastomosis.

Stage	Number of Patients	SIN Unilateral	Bilateral
I	2	1	1
II	12	3	9
III	7	1	6
IV	0	0	0

Although the number of patients in this study is small, the significant restoration of tubal patency noted following medical therapy is encouraging.

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