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Relief of Pain in Scar Endometriosis - Medical Vs Surgical Treatment

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Abstract: ***Background: Scar endometriosis is a rare form of extra pelvic endometriosis characterized by the ectopic implantation of endometrial tissue in surgical scars, typically following obstetric or gynaecological procedures such as caesarean section or hysterectomy. This tissue remains hormonally responsive, leading to cyclical pain, swelling, or bleeding at the scar site. The most widely accepted pathogenesis is iatrogenic transplantation during surgery. Endometriosis affects 5–10% of women of reproductive age worldwide and is often associated with chronic pain and infertility. Scar endometriosis, though uncommon and difficult to diagnose, may clinically mimic conditions such as hernia, lipoma, or hematoma. Common symptoms include a palpable mass and cyclical pain at the scar site. Other sites of extrapelvic endometriosis include the bladder, bowel, omentum, lungs, umbilicus, and abdominal wall. Results: The mean age of the patients was 32.41 ± 4.71 years, with an age range of 25 to 39 years. The most common presenting symptoms were a palpable mass and cyclical abdominal pain. All 12 cases were confirmed as scar endometriosis through histopathological examination. Among the participants, 58.3% underwent surgical excision of the lesion, while 41.7% received medical therapy with various hormonal agents. Post-treatment analysis revealed a significant reduction in pain scores, with the mean VAS score decreasing from 7.42 ± 1.08 to 3.00 ± 0.85 (p = 0.000). However, no statistically significant difference in pain reduction was found between the surgical and medical treatment groups (p = 0.613). The average duration of hospital stay was 2.53 ± 1.2 days. Additionally, there was no significant correlation between the size of the lesion and either patient age or the number of previous cesarean sections. Conclusion: Scar endometriosis, though uncommon, is a notable cause of chronic cyclical abdominal pain in women with a history of pelvic or abdominal surgeries. In this study, the most frequently observed clinical features included a palpable abdominal mass, cyclical pain, and dysmenorrhea. All cases were confirmed by histopathological examination, highlighting the critical role of tissue diagnosis in establishing a definitive diagnosis and guiding appropriate management. Both surgical and medical treatments proved effective in alleviating pain, with a statistically significant reduction in mean VAS pain scores observed following intervention.***

Keywords: Scar Endometriosis, Pain Management, Surgical Excision, Hormonal Therapy, Visual Analogue Scale (VAS)

1. Introduction

Scar endometriosis is a rare form of extrapelvic endometriosis wherein endometrial tissue is ectopically implanted in surgical scars, most commonly following obstetric or gynecological procedures such as cesarean sections or hysterectomies[1]. This ectopic endometrial tissue responds cyclically to hormonal changes, leading to localized pain, swelling, and often cyclical bleeding at the scar site[2]. Though the exact pathogenesis is not fully understood, the most accepted theory is iatrogenic transplantation of endometrial cells during surgery[3].

The clinical presentation of scar endometriosis is often delayed and may mimic other differential diagnoses such as hernias, abscesses, or lipomas, leading to misdiagnosis or delayed treatment[4]. The mainstay of therapy has traditionally been surgical excision, which offers definitive symptom relief[5]. However, medical management using hormonal suppression (e.g., oral contraceptives, progestins, or GnRH analogs) has also shown some benefit in alleviating symptoms[6]. There remains ongoing debate about the most effective and sustainable treatment modality, especially with regard to recurrence, cost, patient preference, and quality of life outcomes[7].

2. Need for the Study

Given the increasing incidence of cesarean deliveries and other abdominal surgeries, the prevalence of scar endometriosis may be rising, although it remains underreported due to diagnostic challenges[8]. There is limited high-quality comparative evidence evaluating the effectiveness of medical versus surgical treatment for scar endometriosis in terms of long-term pain relief and recurrence[9]. Furthermore, current literature largely comprises case reports or small retrospective series, highlighting the need for prospective studies and direct comparisons[10].

This study aims to evaluate and compare the outcomes of medical versus surgical treatment specifically in patients presenting with painful scar endometriosis, with the goal of

guiding evidence-based clinical decision-making and improving patient care.
Cases

3. Case Description of Selected Cases

Case 1
A 33-year-old woman, P2L2, with a history of lower segment cesarean section (LSCS), presented with complaints of right-sided abdominal pain over the scar site during menstrual cycles for the past 4–5 months. Ultrasonography revealed an irregular, heterogeneously hypoechoic area measuring 10 × 20 × 15 mm located in the subcutaneous plane superior to the right rectus abdominis muscle, with loss of intervening fat planes and internal vascularity on color Doppler, suggestive of scar endometriosis. The patient was managed medically with oral **dienogest 2 mg** daily. On follow-up, she reported symptomatic relief.

Case 2
A 28-year-old woman, P2L2, with two previous LSCS, presented with cyclical pain over the scar site for the past 6 months. Ultrasonography revealed a well-defined hypoechoic lesion with mixed echogenicity and cystic areas measuring 3.6 × 3.0 × 1.5 cm in the muscular plane of the LSCS scar. The lesion showed increased vascularity and abutted the anterior myometrium; its posterior extent could not be clearly delineated. Findings were suggestive of scar endometriosis. She was initially treated with **regesterone 10 mg** and later underwent **hernioplasty with mesh repair and excision** of the lesion.

Histopathological examination showed fibrocollagenous and fibroadipose tissue infiltrated with endometrial glands of varying sizes, some cystically dilated with luminal secretion, and surrounded by endometrial stroma. Hemosiderin-laden macrophages were present. No atypia or malignancy was observed. The features confirmed a diagnosis of scar endometriosis. On follow-up, the patient reported symptomatic improvement.

Case 3
A 25-year-old woman, P2L2A2, with a history of two LSCS, presented with complaints of cyclical pain at the operative site for the past 3 years. Ultrasonography showed an irregular, heterogeneously hypoechoic lesion measuring 17.4 × 8.6 × 11.2 mm in the subcutaneous plane superior to the right rectus abdominis muscle with associated loss of fat planes and internal vascularity, indicative of scar endometriosis. The patient was treated with **injection DMPA 150 mg intramuscularly every 12 weeks for 4 cycles**, followed by **surgical wide excision** of the lesion.

Histopathology revealed fibrocollagenous and fibroadipose tissue containing endometrial glands surrounded by endometrial stroma. The glands were tubular, some pseudostratified, and few were cystically dilated with secretions. The stroma exhibited edema and myxoid changes with hemorrhage and lymphocytic infiltration. No evidence of malignancy or atypia was found. Histopathological findings were consistent with scar endometriosis. The patient showed significant clinical improvement on follow-up.

Case 4
A 31-year-old woman, P2L2, with two prior LSCS, presented with complaints of cyclical abdominal pain and heavy menstrual bleeding for one year. Ultrasonography revealed a small, irregular heterogeneously hypoechoic lesion measuring 0.9 × 1.2 × 1.2 mm located in the subcutaneous plane superior to the right rectus abdominis muscle overlying the LSCS scar, with loss of fat planes and internal vascularity noted on color Doppler, suggestive of scar endometriosis. She was managed medically with **Tab Delsy**, and showed symptomatic improvement during follow-up.

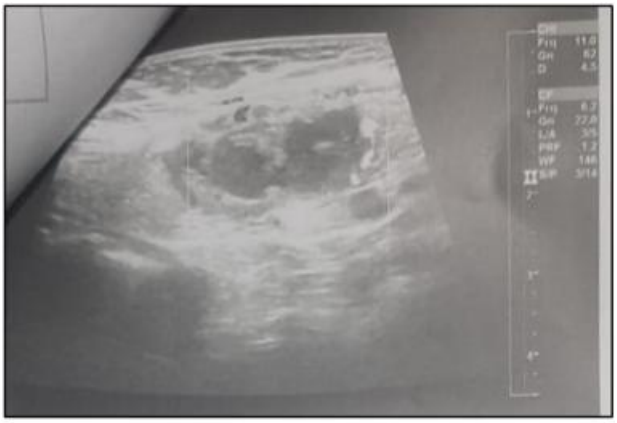

Figure 1

The ultrasound image demonstrates an **ill-defined, heterogeneously hypoechoic lesion** located in the **subcutaneous plane**, consistent with the typical sonographic appearance of **scar endometriosis**. The lesion appears to disrupt the normal fat planes and is situated over the **anterior abdominal wall**, likely corresponding to a previous **LSCS (lower segment cesarean section) scar** site.

There is evidence of **internal vascularity** (as seen on Doppler mode), which further supports the diagnosis, as endometriotic tissue is hormonally active and often displays **vascular proliferation**. The echotexture is mixed, possibly reflecting **fibrosis, hemorrhagic areas**, or **cystic degeneration**—hallmarks of ectopic endometrial implants.

This imaging finding is **highly suggestive of scar endometriosis**, particularly in a patient presenting with cyclical pain at the surgical scar site.

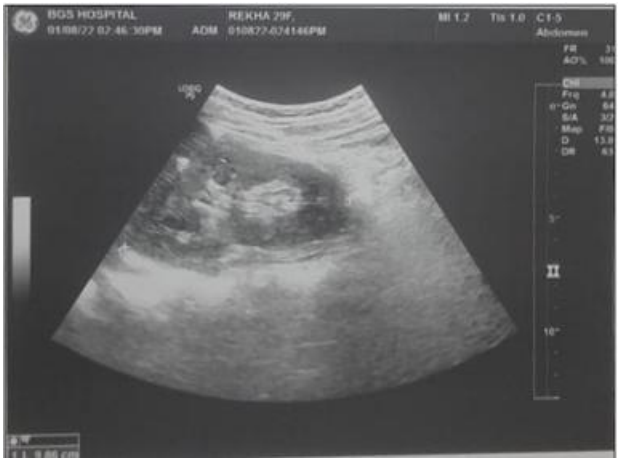

Figure 2

Figure 2: Ultrasound Image Depicting Abdominal Wall Lesion Suggestive of Scar Endometriosis

This ultrasound image shows a **well-circumscribed, heterogeneously hypoechoic lesion** located in the **anterior abdominal wall**, in close proximity to the **rectus muscle**, consistent with the typical features of **scar endometriosis**. The lesion appears embedded within the muscular or submuscular plane, showing **mixed internal echogenicity**, likely representing **fibrotic tissue, cystic changes**, or **hemorrhagic components**.

Given the patient history and the location of the lesion near a likely cesarean section scar, this sonographic appearance—along with clinical correlation of **cyclical pain and swelling at the scar site**—is strongly indicative of **scar endometriosis**.

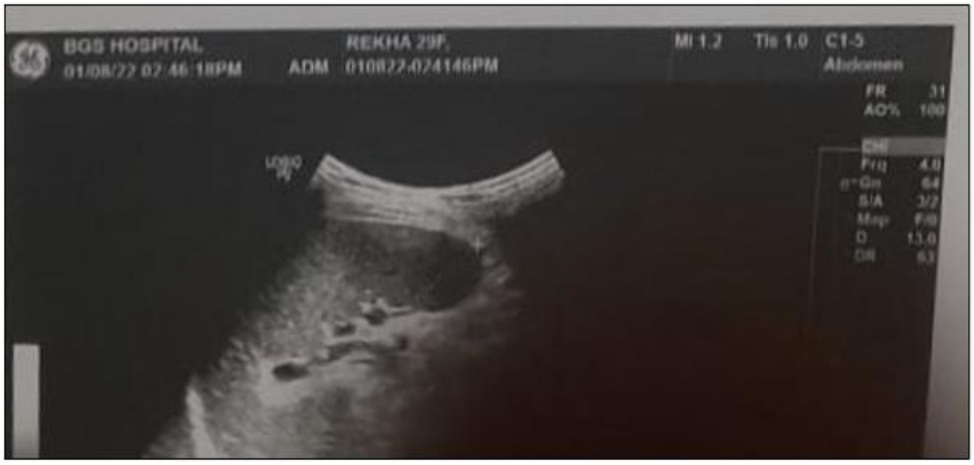

Figure 3

Figure 3: Ultrasound Image Showing Abdominal Wall Lesion Consistent with Scar Endometriosis

This grayscale ultrasound image demonstrates a **well-defined hypoechoic lesion** located in the **anterior abdominal wall**, superficial to the rectus sheath, in the region of a previous **cesarean section scar**. The lesion appears rounded with a relatively homogeneous hypoechoic center and peripheral acoustic shadowing. Its location and morphology are consistent with **scar endometriosis**.

The sonographic findings are supported by the clinical context (patient history of LSCS and cyclical scar pain), and the lesion's appearance is characteristic of **ectopic endometrial tissue with possible internal hemorrhagic or cystic components**.

Table 1: Clinical Profile of Patients with Scar Endometriosis Cases Based on Treatment Modality

Case	Age (Years)	Chief Complaint	Obstetric/Surgical History	Medication	Management Type
1	33	Pain at scar site during menses (4–5 months)	P2L2, previous 2 LSCS	Tab Dienogest 2 mg	Medical
2	39	Brownish discharge at scar site (4 months)	P2L2, post-laparotomy for tubo-ovarian mass	Tab Danazol 200 mg	Medical
3	38	Pain at operated site during menses (3 years)	P2L2, laparoscopic hernia repair with scar endometriosis	Tab Dienogest 2 mg	Surgical (Wide excision)
4	31	Pain abdomen and heavy bleeding during menses (1 year)	P2L2, previous 2 LSCS	Tab Delsy	Medical
5	28	Pain and mass at scar site during menses (6 months)	P2L2, laparoscopy for ectopic pregnancy	–	Surgical (Excision)
6	35	Pain at scar site during menses (3 years)	P2L2A2, previous 2 LSCS	Inj. DMPA 150 mg ×4	Surgical (Wide excision)
7	30	Brownish discharge from scar during menses (2 months)	P3L2, laparotomy for ovarian cyst	–	Surgical (Wide excision)
8	25	Painful menstrual cycles (3 months)	P1L1, previous LSCS	Tab Danazol 200 mg	Medical
9	36	Painful mass at scar site during menses (4 months)	P3L2, post-laparotomy for myomectomy	Inj. DMPA 150 mg ×4	Medical
10	34	Heavy bleeding and painful cycles (8 months)	P2L2, post-laparoscopic appendicectomy	–	Surgical (Wide excision)
11	32	Pain abdomen during menses (4 months)	P3L3, post-laparotomy for ovarian cyst	–	Surgical (Wide excision)
12	28	Pain at scar site during menses (6 months)	P2L2, previous 2 LSCS	Tab Regesterone 10 mg	Surgical (Hernioplasty with excision)

Table 2: Outcome Summary

Management Type	No. of Patients	Symptomatically Improved	% Improved
Medical Only	5 (excluding Case 12)	5	100%
Surgical (± Medical)	7 (including Case 12)	7	100%

4. Results

The **mean age** of the patients was **32.41 ± 4.71 years**, with an age range of **25 to 39 years**. The **most common presenting complaints** included **palpable mass**, **cyclical abdominal pain**, and **painful menstrual cycles**.

Regarding **surgical history**, **5 patients (41.7%)** had undergone **previous lower segment cesarean section (LSCS)**. Additionally, **1 patient each (8.3%)** had a history of **laparotomy for tubo-ovarian mass**, **ovarian cyst**, and **myomectomy**, while another **1 patient each (8.3%)** had undergone **laparoscopy for hernia repair with scar endometriosis**, **laparoscopy for ectopic pregnancy**, and **laparoscopic appendicectomy**.

Histopathological confirmation of scar endometriosis was achieved in **all 12 cases (100%)**, with microscopy revealing the presence of **endometrial glands and stroma** (refer to Figure 1).

Treatment distribution showed that **7 patients (58.3%)** underwent **surgical excision** of the endometriotic lesion along with a margin of approximately **1 cm of surrounding tissue**. The remaining **5 patients (41.7%)** were managed **medically** with hormonal therapy.

The **mean hospitalization duration** was **2.53 ± 1.2 days**, ranging from **2 to 5 days**.

Postoperative evaluation of excised lesions revealed a **mean endometrioma size** of **21.53 ± 5.93 mm**, with sizes ranging between **10 mm and 34 mm**.

Follow-up medical therapy included:
- Injection DMPA 150 mg every 12 weeks for 2 patients
- Tablet Danazol 200 mg for 2 patients
- Tablet Dienogest 2 mg for 2 patients
- Tablet Regesterone 10 mg for 1 patient
- Tablet Delsy for 1 patient

Statistical analysis revealed **no significant correlation** between the **size of the lesion** and **patient age** or the **number of previous LSCS procedures** (**P > 0.05**).

Table 2: Comparison of pain score between pre-treatment (Surgery or medical management) with post-treatment

Treatment	Number of patients	VAS pain score	Paired t-test value and p-value
		Mean ± SD	
Pre-Treatment (Surgical or medical management)	12	7.42 ± 1.08	t = 22.885, P = 0.000, HS
Post-Treatment (Surgical or medical management)	12	3.00 ± 0.85	
Un-paired t-test and P-Value	t = 0.712, P = 0.613, NS		

Table 2 presents the comparison of pain scores before and after treatment, encompassing both surgical and medical management modalities. A statistically significant reduction in pain was observed following treatment. The mean Visual Analogue Scale (VAS) pain score decreased substantially from **7.42 ± 1.08** in the pre-treatment phase to **3.00 ± 0.85** post-treatment among the 12 patients evaluated. This reduction was highly significant, as indicated by a **paired t-test value of 22.885** and a **p-value of 0.000**, confirming the effectiveness of the interventions in pain alleviation.

Additionally, the comparison between the two treatment groups using the **unpaired t-test** yielded a **t-value of 0.712** and a **p-value of 0.613**, which was not statistically significant. This suggests that there was no meaningful difference in pain reduction between patients managed surgically and those managed medically. These results collectively highlight the clinical efficacy of both treatment modalities in significantly reducing pain, reinforcing their roles in the management strategy for the condition under investigation.

5. Discussion

Endometriosis occurring within a postoperative scar is a rare clinical entity. Most reported cases have been identified in or adjacent to surgical scars, particularly following **caesarean sections**, **hysterectomy**, and **hysterotomy**. Less commonly, scar endometriosis has also been documented after procedures involving the **fallopian tubes**, **appendectomy**, **amniocentesis**, and even **episiotomy.**[11]

The incidence of endometriosis developing within a surgical scar varies depending on the indication for the original procedure. It has been reported to be approximately **1.08% following mid-trimester abortions**, compared to **0.03–0.4% after caesarean sections** .[11-12] The higher incidence associated with mid-trimester abortions may be attributed to the **pluripotent nature of early decidual tissue**, which possesses greater potential for **cellular replication**, thereby increasing the likelihood of endometrioma formation.

A large review by **Horton et al.** [4], analyzing **445 cases** of abdominal wall endometriosis, found that **57%** occurred in **caesarean section scars**, **11%** in **hysterectomy scars**, and **12%** in **scars from other surgical procedures**. Interestingly, **20%** of cases were located outside surgical scars, such as in the **umbilicus** and **groin** regions.

The pathogenesis of scar endometriosis remains a topic of investigation, with two main theories proposed. The most widely accepted is the **metastatic theory**, which suggests that **endometrial cells are transplanted to ectopic locations** through **direct surgical manipulation**, or via **hematogenous** or **lymphatic spread**. Alternatively, the **metaplastic theory** posits that **primitive pluripotent mesenchymal cells** undergo **differentiation into endometrial tissue**, possibly

triggered by hormonal or environmental stimuli .[13]

Endometriosis is a chronic gynecological condition characterized by the presence of endometrial-like tissue outside the uterine cavity, often resulting in significant pelvic pain, infertility, and a decreased quality of life. Its management generally includes either medical therapy—primarily hormonal suppression—or surgical excision, with each modality offering specific benefits and limitations depending on the clinical scenario.

Scar endometriosis, a rare form of extrapelvic endometriosis, occurs when endometrial tissue is implanted in surgical scars, typically following obstetric or gynecological procedures. It commonly presents as a painful, palpable mass at the site of a previous incision and is often cyclic in nature. Due to its rarity and diagnostic challenges, treatment strategies vary, with both medical and surgical options being employed.

The present study was undertaken to compare the effectiveness of surgical and medical management in reducing pain and improving clinical outcomes in a cohort of 12 women diagnosed with scar endometriosis.

Demographic and Clinical Characteristics:
Our study population consisted of women with scar endometriosis, with a mean age of 32.41 ± 4.71 years, ranging from 25 to 39 years. These demographics align with the typical presentation of scar endometriosis in women of reproductive age. The most common presenting complaints in our study were palpable mass, cyclical abdominal pain, and painful menstrual cycles, which are consistent with previously documented symptoms. Notably, a significant proportion (41.7%) of our patients had a history of lower segment cesarean section (LSCS), reinforcing the established association between obstetric surgeries, particularly Cesarean section, and the development of scar endometriosis. Other reported surgical histories, such as laparotomy, ovarian cyst removal, myomectomy, hernia repair, ectopic pregnancy, and appendicectomy, while less frequent, are also recognized as potential contributing factors. Histopathological confirmation of scar endometriosis was achieved in all cases (100%), confirming the presence of endometrial glands and stroma, which is the definitive diagnostic method.

Treatment Approaches and Outcomes:
Our study observed a distribution of treatment strategies, with 58.3% of patients undergoing surgical excision and 41.7% receiving medical management with hormonal therapy. Surgical excision, which involves removing the endometriotic lesion along with a margin of surrounding tissue, is widely considered the definitive treatment for scar endometriosis. This is because medical therapies, while offering symptomatic relief, often provide only temporary alleviation of symptoms, with recurrence frequently occurring after treatment cessation. In line with this, surgical excision aims to achieve complete removal of the endometrial tissue, thus minimizing the risk of recurrence.

Comparison with Published Literature:
Our findings regarding the effectiveness of surgical versus medical management for scar endometriosis align with several published studies.

In a study done by Malutan AM et al [14] the demographic and clinical characteristics of the study population. The median age of the patients was **34 years**, with a range spanning from **26 to 55 years** and a standard deviation of **±6.50 years**. The average parity among the patients was **1.5**, ranging from **1 to 3**.

All patients (**100%**) had a history of previous abdominal surgery. Among them, **11 patients (78.57%)** had undergone a cesarean section (CS), indicating a strong association between prior obstetric surgery and the condition under investigation.

Similarly, in a study conducted by Sultana N et al. [15], the baseline characteristics of 76 participants—divided equally into surgical (n=38) and medical (n=38) treatment groups—were reported to be comparable. The mean age in the surgical group was 32.4 years (SD ±6.1), while it was 31.8 years (SD ±5.9) in the medical group, with no statistically significant difference (p=0.625). Body mass index (BMI) was also similar between the groups, with averages of 24.6 kg/m² (SD ±3.4) in the surgical group and 24.9 kg/m² (SD ±3.2) in the medical group (p=0.712). Additionally, no significant differences were observed in the duration of symptoms (p=0.762), severity of pain as measured by the Visual Analog Scale (VAS) (p=0.553), history of infertility (p=0.640), or prior treatments undertaken by the participants (p=0.646). These findings underscore the homogeneity of the study population at baseline, thereby strengthening the internal validity of the comparative outcomes reported.

Our study demonstrated a significant reduction in pain scores following treatment, which included both surgical and medical management modalities. The mean Visual Analogue Scale (VAS) pain score decreased substantially from 7.42 ± 1.08 in the pre-treatment phase to 3.00 ± 0.85 post-treatment among the 12 patients evaluated. This improvement was statistically significant, as evidenced by a paired t-test value of 22.885 and a p-value of 0.000, thereby confirming the effectiveness of both interventions in alleviating pain.

In comparison, another study evaluated long-term pain relief outcomes at 6 and 12 months among patients undergoing surgical or medical treatment. At the 6-month follow-up, the mean VAS pain score in the surgical group was 3.2 ± 1.5, significantly lower than the 4.6 ± 1.8 recorded in the medical group ($p = 0.004$). This trend persisted at 12 months, where the surgical group showed a further reduction in the mean VAS score to 2.8 ± 1.4, compared to 5.2 ± 2.0 in the medical group, with the difference remaining highly significant ($p < 0.001$).

The same study also assessed the proportion of patients achieving clinically meaningful pain relief, defined as a ≥50% reduction in VAS score at 12 months. A significantly higher percentage of patients in the surgical group (78.9%) experienced substantial pain relief, in contrast to 47.4% in the medical group ($p = 0.003$).

Furthermore, the study reported differences in recurrence rates and treatment-related side effects. Pain recurrence was

significantly lower in the surgical group (21.1%) compared to the medical group (52.6%, p = 0.003). Surgical complications were observed in 7.9% of patients in the surgical group, while no surgical complications were applicable to the medical group. Conversely, hormonal side effects were reported in 36.8% of participants receiving medical treatment, a factor not relevant in the surgical group.

The study also examined fertility outcomes in patients desiring conception. Pregnancy was achieved in 50.0% of patients in the surgical group and 31.3% in the medical group; however, this difference did not reach statistical significance (p = 0.262). The mean time to conception was slightly shorter in the surgical group (9.2 ± 3.1 months) compared to the medical group (11.4 ± 3.6 months), though the difference was also not statistically significant (p = 0.127).[15]

Pain relief is a primary treatment goal for endometriosis. In this study, the surgical group exhibited significantly greater pain reduction compared to the medical group. At 12 months, 78.9% of patients in the surgical group reported a significant reduction in pain (≥50% reduction in VAS score) versus 47.4% in the medical group (p=0.003). These findings align with prior research, which generally supports the superiority of surgical management for sustained pain relief. A systematic review by Abbott et al.,[16] demonstrated that laparoscopic excision of endometriotic lesions resulted in a 65% reduction in pain at 6 months, and 50% at 12 months, compared to a 33% reduction in the hormonal therapy group.21Similarly, Sutton et al., [17]reported that 65% of women undergoing laparoscopic excision experienced significant pain relief at 12 months compared to 42% in the medical group. This suggests that while medical therapy, such as GnRH agonists, is effective during treatment, pain recurrence is common after cessation, unlike in surgical treatment where pain relief tends to be more durable.

The recurrence of pain remains a significant challenge in the long-term management of endometriosis. In the present study, the recurrence rate was notably lower in the surgical group (**21.1%**) compared to the medical group (**52.6%**), and this difference was statistically significant (**p = 0.003**). Elevated recurrence rates associated with medical therapy have been consistently reported in the literature. For example, Vercellini et al. observed pain recurrence in **45%** of patients receiving medical treatment within 12 months, as opposed to only **15%** in those who underwent surgical intervention .[18] This disparity is largely attributed to the temporary symptom suppression provided by medical therapy, which reduces endometriotic activity but does not eliminate the underlying lesions.

Similarly, the ENZIAN study (2020) reported a recurrence rate of **30%** in patients treated surgically, compared to **60%** in those managed medically .[19] These findings reinforce the advantage of surgical intervention in providing more sustained pain relief, likely due to the direct excision of endometriotic tissue—an outcome that medical therapy alone cannot achieve. Consequently, surgical management may be more favorable for patients requiring long-term symptom control and recurrence prevention.

Although surgical treatment offers substantial benefits in terms of symptom relief and reduced recurrence, it is not without risk. In the present study, **7.9%** of patients in the surgical group experienced complications, including infections and bleeding. These findings are consistent with those reported by Chapron et al.,[20] who documented a complication rate of **6–8%** for laparoscopic excision, with **bowel injury** and **intraoperative bleeding** being among the most common adverse events. These risks highlight the necessity of expert surgical technique and thoughtful patient selection to minimize procedural complications.

On the other hand, while medical management circumvents surgical risks, it is often associated with significant systemic side effects. In this study, **36.8%** of patients receiving medical therapy reported adverse effects such as **weight gain** and **mood disturbances**. Surrey and Hornstein et al. similarly reported that **35–40%** of women treated with **GnRH agonists** experienced notable side effects, particularly **bone mineral density loss**, which is a major concern with prolonged use .[21] These limitations restrict the long-term applicability of hormonal therapy and may lead to treatment discontinuation, recurrence of symptoms, or a shift toward surgical options when side effects become intolerable.

While our study, like many others, suggests surgical excision as the primary treatment for scar endometriosis, it's important to acknowledge that some individuals may experience limited or intermittent benefits from treatment, regardless of the approach. This could be due to various factors, including the severity and extent of the disease at the time of treatment, the completeness of lesion removal, and the presence of underlying or associated endometriosis. Furthermore, the lack of standardized classification systems and inconsistencies in reporting outcomes across studies make direct comparisons challenging.

6. Conclusion

Scar endometriosis, although rare, remains a significant cause of chronic cyclical abdominal pain in women with a history of pelvic or abdominal surgeries. In this study, the most common clinical features were a palpable abdominal mass, cyclical pain, and dysmenorrhea. Histopathological confirmation was achieved in all cases, underscoring the importance of tissue diagnosis in guiding treatment.

Both surgical and medical treatments were found to be effective in relieving pain. The mean VAS pain score showed a statistically significant reduction post-treatment, regardless of the modality used. While surgical excision led to a slightly greater reduction in pain, the difference between surgical and medical groups was not statistically significant. This suggests that both approaches can be considered viable options, with treatment individualized based on patient preference, clinical presentation, reproductive goals, and tolerance to hormonal therapy.

7. Limitation

The study has several limitations. The small sample size (n = 12) limits the generalizability of the findings, and larger multicentric studies are needed to validate these results. The short follow-up duration prevented the assessment of long-

term recurrence and the sustainability of pain relief. The non-randomized design, where patients were not randomly assigned to treatment groups, introduces potential selection bias. The subjective measurement of pain using the VAS score may not fully capture the multidimensional impact of pain and its effect on quality of life. Additionally, the heterogeneous medical therapy, with patients receiving different hormonal agents, may have influenced individual outcomes and reduced comparability.

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