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Rare Case Series of Scar Endometriosis

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KEYWORDS	ABSTRACT:		
Scar Endometriosis, Caesarean Section complications, Post	Background: Scar endometriosis is an uncommon form of endometriosis that occurs in surgical scars, primarily following obstetric and gynaecologic procedures. Due to its rarity and non-specific symptoms, scar endometriosis poses significant diagnostic challenges and often leads to delayed diagnosis and treatment.		
Endometriosis,	Objective: To pr diagnostic appro	lometriosis, highlighting clinical features, es.	
Cyclic pelvic pain,	Methods: This ca	ase series includes five patients diagnose	d with scar endometriosis, each presenting
Surgical scar mass,	with cyclical pain and swelling at the site of previous surgical scars. The diagnosis was confirmed		
Ectopic endometrial	through clinical examination, imaging studies, and, in some cases, biopsy. Treatment involved		
tissue	Results:		
	 Case 1: A 30-year-old woman with a history of caesarean section presented with cyclic pain and swelling at the caesarean scar. The diagnosis was confirmed via ultrasound and MRI. Surgical excision resulted in complete symptom resolution with no recurrence at 18 months follow-up. Case 2: A 34-year-old woman with a history of hysterectomy experienced persistent pain at the hysterectomy scar site. Imaging confirmed scar endometriosis and surgical excision led to symptom- free status 15 months post-surgery. 		
	3. Case 3: A 37- episiotomy scar, symptom resolut	-year-old woman with a prior episiotom, which worsened during menstruation ion, with no recurrence at 12 months for	y presented with swelling and pain at the n. Surgical excision provided successful low-up.
	4. Case 4: A 29- cyclical pain at t resulted in comp 5. Case 5: A 4 presented with c scar endometrios	year-old woman with a history of lapar the laparoscopic port site. MRI confirme lete symptom resolution with no recurren 0-year-old woman with multiple abdo yclical pain and a palpable mass at a pr is, and surgical excision led to no recurrent	oscopic surgery for ovarian cysts reported ed endometrial tissue and surgical excision nee at 14 months follow-up. minal surgeries, including myomectomy, evious surgical site. Ultrasound confirmed nee or symptoms during ten month's follow-
	Conclusion: Sca surgical scar sites and surgical man up is recommen recognizing and	r endometriosis should be considered in s, especially those with a history of obstet agement are crucial for effective treatment and to monitor for recurrence. This c appropriately managing this rare condition	a women with cyclic pain and swelling at ric or gynaecologic surgery. Early diagnosis nt and symptom resolution. Regular follow- ase series underscores the importance of on.

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This abstract highlights the case series' key aspects, emphasizing the condition's rarity, clinical presentation, diagnostic strategies, treatment outcomes, and the importance of long-term follow-up.

Introduction

Scar endometriosis is an uncommon form of endometriosis where ectopic endometrial tissue is found in surgical scars. It results from the implantation of endometrial cells into surgical wounds during procedures.⁽¹⁾ These cells can implant and proliferate within the scar tissue, responding to hormonal changes during the menstrual cycle leading to cyclic pain and swelling. This condition is primarily associated with obstetric and gynaecological surgeries such as caesarean sections, hysterectomies, and episiotomies.⁽²⁾ It presents diagnostic challenges due to its rarity and non-specific symptoms, often leading to delayed diagnosis and treatment. Scar endometriosis is estimated to occur in 0.03% to 1.5% of women who undergo abdominal or pelvic surgeries, with caesarean sections being the most commonly associated procedure. Caesarean Sections account for about 80% of reported cases of scar endometriosis.⁽³⁾ Hysterectomies are the second most common, though significantly less frequent than caesarean-associated cases. **Episiotomies** and Laparoscopies are also associated but less common than caesarean sections. The average time from the initial surgery to the diagnosis of scar endometriosis ranges from 3 to 7 years. This delay is often due to the nonspecific symptoms and lack of awareness.

Case Presentation

Case 1:

A 30-year-old woman named Mrs. A visited the OG OPD with a complaint of cyclic pain and swelling in her caesarean scar, which intensified during menstruation. She had undergone a Caesarean section five years ago. During the physical examination, a tender and firm mass was detected in the scar. The ultrasound revealed a hypoechoic mass, but the diagnosis could not be determined. Further investigation through MRI confirmed the presence of endometrial tissue.

Treatment: She underwent complete surgical excision of the mass with a margin of healthy tissue.

Outcome: Mrs. A's recovery was remarkable, and she was instructed to continue with regular follow-ups.

During the 18-month period, she did not experience any recurrence or symptoms.

Case 2:

Mrs. B, a 34-year-old woman, visited the OG OPD with persistent and worsening pain, coupled with the presence of a palpable mass at the hysterectomy scar site. Despite the absence of her uterus, her pain intensity significantly increased during her menstrual cycle. Her medical history included a hysterectomy six years ago due to severe endometriosis. Upon physical examination, a tender nodule was discovered. Diagnostic imaging, such as ultrasound and CT scans, confirmed the presence of scar endometriosis.

Treatment: Wide local excision of the lesion was done for the patient.

Outcome: Mrs. B was released from the hospital after she had fully recovered. She returned for regular checkups and remained symptom-free for 15 months following her surgery, without any signs of recurrence.

Case 3:

Mrs. C, a 37-year-old woman, suffered from increased pain and swelling at her episiotomy incision site, especially during menstruation. Seven years prior, she had given birth to her baby through a vaginal birth that included an episiotomy. The medical examination and ultrasound imaging of Mrs. C revealed the existence of endometriotic tissue within the scar.

Treatment: Surgical excision of the affected tissue was done.

Outcome: Successful symptom resolution and no recurrence noted during 12 months of follow-up.

Case 4:

Mrs. D was a 29-year-old female patient who reported recurring abdominal pain around the laparoscopic port site, with the intensity increasing during menstrual cycles. Four years prior, she had undergone laparoscopic surgery to remove ovarian cysts. Her physical examination and MRI results showed the presence of endometrial tissue at the laparoscopic port site. www.jchr.org

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Treatment: She underwent excision of the endometriotic tissue.

Outcome: Mrs.D had complete resolution of symptoms, was asked to follow-up regularly. No recurrence observed at 14 months follow-up.

Case 5:

Mrs. E, who was 40 years old, experienced cyclical pain and a palpable mass at her previous surgical site. She had a history of several abdominal surgeries, including a myomectomy eight years prior. After conducting a physical examination and an ultrasound, it was determined that there was endometrial tissue present in the scar.

Treatment: The recommended course of action was surgical excision with a margin of healthy tissue.

Outcome: Fortunately, Mrs. E did not experience any recurrence or symptoms during her ten-month follow-up period.

Discussion

Endometriosis at the site of a surgical scar is an uncommon condition that necessitates a high level of suspicion, particularly in women who experience cyclical pain and swelling. This condition is thought to arise from the implantation of endometrial cells during surgical procedures, which then increase in response to hormonal cycles. In 70-90% of cases, cyclical pain is present, often corresponding with the menstrual cycle. The intensity of the pain ranges from mild discomfort to severe, significantly impacting the quality of life. A palpable mass or nodule is present at the scar site in approximately 60-80% of cases, and patients may observe changes in the size of the mass in relation to their menstrual cycle. Swelling and discomfort are frequently reported, with menstruation exacerbating these symptoms.

Diagnosis: Diagnosis typically involves a combination of patient history, physical examination, and imaging studies such as ultrasound, MRI, or CT scans.⁽⁵⁾ Ultrasound is used in 60-80% of cases, often revealing a hypoechoic mass. MRI is used in more complex cases for detailed imaging. Fine-needle aspiration or biopsy can also assist in confirming the diagnosis. It is utilized in 30-50% of cases to confirm the diagnosis, especially when

imaging is inconclusive.⁽⁴⁾ The differential diagnosis for scar endometriosis includes:

- Incisional hernia
- Hematoma
- Abscess
- Lipoma
- Desmoid tumour
- Keloid or hypertrophic scar⁽⁶⁾

Histopathological Confirmation: The diagnosis of scar endometriosis is unequivocally established through histopathological examination, which typically reveals the presence of endometrial glands and stroma within the scar tissue, along with the presence of hemosiderin-laden macrophages. Differentiating scar endometriosis from other histologically similar conditions, such as cutaneous endometriosis or endometrial stromal sarcoma, is crucial.

Treatment: Surgical excision is the primary treatment in 95% of cases, aiming for complete removal with clear margins to prevent recurrence.⁽⁷⁾ Hormonal therapies, such as oral contraceptives, GnRH analogues, or progestins, may be used in cases where surgery is not feasible or to manage symptoms preoperatively. However, hormonal treatment alone is less effective in providing long-term relief compared to surgical excision. Recurrence after surgical excision is reported in approximately 4-8% of cases, emphasizing the importance of complete excision.

Prognosis: The prognosis after surgical excision is generally excellent, with most patients experiencing complete resolution of symptoms. Following surgical treatment, symptom resolution is achieved in over 90% of cases. However, the recurrence rate ranges from 4-8%, highlighting the importance of complete excision.⁽⁸⁾ Regular follow-up is recommended to monitor for recurrence, with most cases being symptom-free during follow-ups extending from 6 months to several years. Follow-up typically involves periodic clinical evaluations and, if necessary, imaging studies.⁽⁹⁾

Prevention Strategies for Scar Endometriosis: Preventive strategies focus on minimizing the risk of endometrial cell implantation during surgical procedures and ensuring meticulous surgical techniques. www.jchr.org

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→ Meticulous Surgical Technique:⁽³⁾

• Wound Closure: Ensure proper closure of the peritoneum and fascial layers to minimize the risk of endometrial cell implantation into subcutaneous tissues.

• Layered Suturing: Use layered suturing techniques to close incisions, which may help prevent the migration of endometrial cells into the wound.

• Separate Instruments: Use separate instruments for handling the endometrial tissue and closing the abdominal wall to prevent contamination.

→ Use of Barriers:⁽¹⁰⁾

• Physical Barriers: Consider using physical barriers, such as adhesion barriers or absorbable mesh, to separate endometrial tissue from the surgical wound during closure.

• Wound Protection: Utilize wound protection devices during surgery to shield the surgical site from contamination by endometrial cells.

→ Surgical Site Management:⁽²⁾

• Thorough Irrigation: Irrigate the surgical site thoroughly before closure to remove any free endometrial cells that may have been dislodged during the procedure.

• Clean Surgical Field: Maintain a clean surgical field, especially when operating in areas with known or suspected endometriosis, to reduce the likelihood of cell implantation.

→ Preoperative and Intraoperative Measures:⁽¹¹⁾

• Hormonal Suppression: Consider preoperative hormonal suppression therapy in patients with known endometriosis to reduce the activity and volume of endometrial tissue.

• Minimal Handling of Endometrial Tissue: Minimize manipulation and handling of endometrial tissue during surgery to reduce the risk of cell dissemination.

\rightarrow **Postoperative Care:**⁽⁴⁾

• Early Mobilization: Encourage early postoperative mobilization to promote healing and

reduce the risk of adhesions that could harbour endometrial cells.

• Patient Monitoring: Monitor patients closely for symptoms of scar endometriosis, especially those with a history of endometriosis or gynaecologic surgeries.

\rightarrow Patient Education and Counselling:

• Informed Consent: Educate patients about the potential risks of scar endometriosis and ensure they are aware of the signs and symptoms to watch for post-surgery.

• Symptom Awareness: Encourage patients to report any unusual or cyclic pain at the surgical site, swelling, or palpable masses promptly.

→ Future Surgical Interventions:⁽⁹⁾

• Careful Surgical Planning: In patients with a history of endometriosis, plan future surgeries carefully to minimize the risk of cell implantation and dissemination.

• Advanced Surgical Techniques: Utilize advanced surgical techniques, such as laparoscopy or robotic-assisted surgery, which may reduce tissue trauma and the risk of endometrial cell spread.

By implementing these prevention strategies, surgeons can reduce the risk of scar endometriosis and improve postoperative outcomes for patients undergoing obstetric and gynaecologic surgeries. Continuous education and awareness among healthcare providers are crucial for the effective prevention and early detection of this condition.

Conclusion

Early recognition and appropriate surgical management are key to effectively treating scar endometriosis.⁽¹²⁾ This case series underscores the importance of considering scar endometriosis in the differential diagnosis for women with cyclic pain and a history of abdominal or pelvic surgery. Long-term follow-up is recommended to monitor for potential recurrence. Exploring minimally invasive surgical techniques and adjunctive therapies could improve patient outcomes and reduce recurrence rates.⁽¹³⁾ Developing guidelines for diagnosing and managing scar endometriosis would also help standardize care and improve patient outcomes.

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