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Case Series

Diagnostic evaluations and management of surgical scar endometriosis: a case series of 13 cases over 9 years

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ABSTRACT

Endometriosis is defined as localization of ectopic functional endometrial gland and stroma. Scar endometriosis is a rare benign gynecological disease affecting women in the reproductive age group. It's incidence in post-caesarean and post-hysterotomy scar tissue is approximately 0.03-0.4% and 1.08-2% respectively. This case series reviews literature of medical data of 13 patients who presented over 9 years with incisional site endometrioma, diagnostic approaches and treatment is discussed. The patients presented in 2nd to 3rd decade of life with complaints of cyclical pain and mass at previous surgery scar. Ultrasonography (USG) detected hypoechoic mass/granuloma and inconclusive in most cases. Magnetic resonance imaging (MRI) though was suggestive of diagnosis in almost all cases. Definitive diagnosis was histopathological examination. Treatment was achieved with surgical excision in all patients, and 3 are preceded by hormonal treatment. Medical treatment can only yield symptomatic relief in pain till the hormone effect lasts. Treatment of choice is wide excision that is excision of 1 cm tissue around the mass. Endometriosis in operative site scar tissue may present as a discrete mass which may be painful and can be confused clinically with a variety of surgical conditions. It is extremely important to recognize the condition so as to avoid potential clinical pitfalls in the diagnosis of this treatable entity.

Keywords: Surgical site cyclical pain, Incisional site endometrioma, Wide excision

INTRODUCTION

Endometriosis is a condition where the functional and morphological endometrial glands and stromal structures are found outside the uterus. It mainly affects women in reproductive ages. Being benign in structure, endometriosis has many features of malignancy: local spread, invasiveness, and an outstanding ability to disseminate.

Scar endometriosis is defined as implantation of endometrial glands and tissues at any previous operation scars, mostly linked with obstetrics and gynecology operations but may also be seen after appendectomy and at hernia repair sites. Patient presenting with cyclical pain during menstruation and mass at or near previous surgery site are pathognomonic, difficult to diagnose as it may mimic surgical site granuloma, seroma, hemangioma, lipoma.[1] Diagnostic modality available are ultrasonography (USG) with Doppler, magnetic resonance imaging (MRI), CA-125 and fine needle aspiration cytology (FNAC).[3] Gold standard investigation being histopathological examination. Treatment of choice is wide excision with a margin of 1 cm.[8]

The present study describes a case series of 13 cases of scar endometriosis and reviews the literature to elucidate signs and symptoms that may help an earlier diagnosis and prompt treatment.

CASE SERIES

This is a case series study on patients with scar endometriosis who had undergone previous surgery. In this study, we have presented clinical presentation, laboratory findings, radiology evaluations and management of 13 consecutive patients with scar endometrioma, who were admitted to our department in south western and central railways hospital between 2015 and 2024 and reviewed the literature. There were 28 patients with incisional hernias and 36 benign abdominal wall tumors like lipomas, seroma, and hemangioma in this period.

Case 1

A 25-year-old female, P2L2, presented with complaints of on and off swelling in perineal region from 2 years. On examination a 2×3 cm cystic mass seen at at the site of previous episiotomy scar.

Past surgical history included 2 normal vaginal deliveries, last delivery 3 years back, and episiotomy was given.

As per the investigations, the patient underwent MRI, showed T1, T2 hypointense lesion, suggestive of endometrioma.

Management included planning for wide excision.

Follow up

Histopathology report suggestive of endometrioma. Case followed up for 8 years postoperation and showed no recurrence.

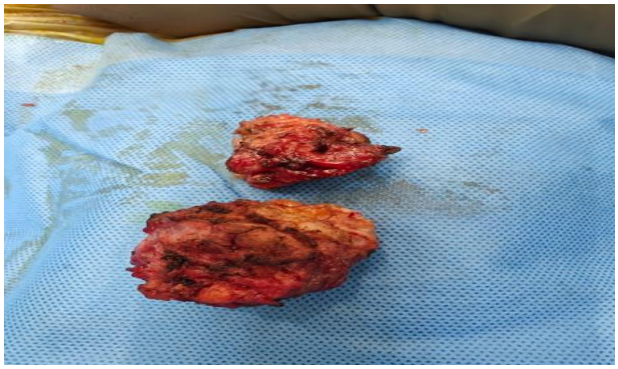

Figure 1: Gross appearance of specimen of case 1.

Case 2

A-25-year female, P1L1, presented with complaints of painful umbilical swelling from 8 months. On examination 1×1 cm bluish cystic mass seen at supraumbilical post site scar.

Past surgical history included laproscopic ovarian cystectomy 1 year ago.

As per the investigations, MRI showed T1 and T2 hypointense lesion suggestive of endometrioma.

For management, the patient was given tab Dinogest for 3 months, only partial symptomatic relief, and underwent wide excision.

Follow up

Histopathology reports showed endometrial glands and stroma. Case followed up for 7 years post surgery and no recurrence was found.

Figure 2: Gross appearance of specimen of case 2.

Case 3

A 39-year-old female, P3L2, presented with complaints of pain and swelling per abdomen from 3 years. On examination non reducible swelling seen at previous LSCS scar.

Past surgical history included previous 1 lower segment caesarean section 5 years back.

As per investigations, hypoechoic lesion was seen on USG. MRI showed T1 and T2 hypointense lesion suggestive of endometrioma.

Management included wide excision.

Follow up

Histopathology report confirmed scar endometriosis. Showed no recurrence in a follow up course of 7 years.

Case 4

A 31-year-old female, P3L2D1, presented with complaints of scar site painful swelling. On examination 1×1 cm, firm swelling at right end of LSCS scar.

Past surgical history included history of previous 2 LSCS, 5 and 1 year back respectively.

As per investigations, USG was misdiagnosed and showed features suggestive of granuloma. MRI showed T1 and T2 hypointense lesion suggestive of endometrioma.

For management, the patient was given progestrone tablets for 5 months. Size of swelling not reduced. Only pain relief catered. Underwent wide excision.

Follow up

Histopathology report suggestive of endometrioma. Case followed up for 7 years postoperation and showed no recurrence.

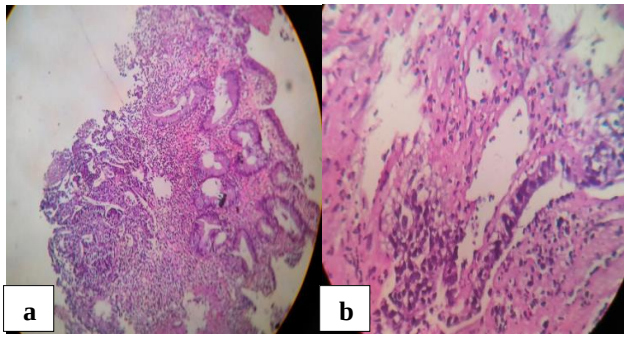

Figure 3 (a and b): Microscopic appearance showing endometrial glands and stroma.

Case 5

A 27-year-old female, nulligravida, presented with complaints of cyclical scar site pain from 1.5 year. On examination scar site induration seen.

Past surgical history included open appendicectomy done 2 years back.

As per investigations, ultrasonography was inconclusive. MRI showed T1 and T2 hypointense lesion suggestive of endometrioma.

For management, the patient underwent wide excision.

Follow up

Histopathology reports showed endometrial glands and stroma. Case followed up for 6 years post surgery and no recurrence was found.

Case 6

A 35-year-old female, P3L3, presented with complaint of scar site pain.On examination 3×2 cm firm tender mass palpated on left edge of scar.

Past surgical history included previous 2 LSCS. Time since last surgery was 4 years.

As per investigations, ultrasonography was inconclusive. MRI showed T1 and T2 hypointense lesion suggestive of endometrioma.

Management included wide excision.

Follow up

Histopathology reports showed endometrial glands and stroma. Case followed up for 6 years post surgery and no recurrence was found.

Case 7

A 28-year-old female, P2L2A3, presented with scar site cyclical pain from 4 years. On examination scar site induration of 4×2 cm present.

Past surgical history included previous 2 LSCS. Time since last surgery was 5 years.

As per investigations, ultrasonography was inconclusive. MRI showed T1 and T2 hypointense lesion suggestive of endometrioma.

Management included wide excision with mesh repair.

Follow up

Histopathology report confirmed scar endometriosis. Showed no recurrence in a follow up course of 5 years.

Figure 4: Gross appearance of specimen of case 7.

Figure 5: Meshplasty done in case 7.

Case 8

A 26-year-old female, P1L1A1, presented with scar site burning and pain from 1.5 years. On examination 1×2 cm tender mass present at LSCS scar.

Past surgical history included previous LSCS. Time since last surgery was 2 years.

As per investigations, ultrasonography was inconclusive. MRI showed T1 and T2 hypointense lesion suggestive of endometrioma.

Management included wide excision.

Follow up

Histopathology report confirmed scar endometriosis. Showed no recurrence in a follow up course of 5 years.

Case 9

A 24-year-old, female, P3L2A2, presented with complaints of painful scar site swelling from 5 years. On examination 2×3 cm swelling adherent to underlying tissue.

Past surgical history included previous 2 LSCS. Time since last surgery was 6 years.

As per investigations, ultrasonography was inconclusive. MRI showed T1 and T2 hypointense lesion suggestive of endometrioma.

Management included wide excision with mesh repair.

Follow up

Histopathology report confirmed scar endometriosis. Showed no recurrence in a follow up course of 4 years.

Figure 6: Gross appearance of specimen of case 11.

Case 10

A 29-year-old female, P1L1A1, came with complaint of pricking scar pain from 2 years. On examination 2×2 cm tender cystic mass at laprotomy scar.

Past surgical history included history of normal vaginal delivery and left mediolateral episiotomy 5 years back. Previous history of laprotomy in view of right tubal ruptured ectopic pregnancy 3 years back.

As per investigations, ultrasonography findings were inconclusive. MRI showed T1 and T2 hypointense lesion suggestive of endometrioma.

Management included wide excision.

Follow up

Histopathology report confirmed scar endometriosis. Showed no recurrence in a follow up course of 4 years.

Case 11

A 32-year-old female, P1L1, presented with cyclical scar site painful swelling from 9 months. Patient also complained of increasing size of swelling over the period. On examination 4×3 cm and 1×1 cm firm cystic mass palpable along the scar.

Past surgical history included history of LSCS 5 years back and hysterectomy in view of uncontrolled bleeding during myomectomy 9 months back.

As per investigations, ultrasound findings were inconclusive. MRI showed T1 and T2 hypointense lesion suggestive of endometrioma.

Management included wide excision with meshplasty.

Follow up

Histopathology report confirmed scar endometriosis. Showed no recurrence in a follow up course of 2 years 6 months.

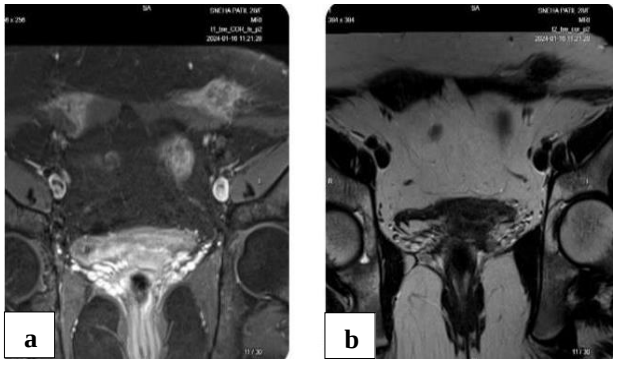

Figure 7 (a and b): MRI report of case 13.

Case 12

A 26-year-old female, P3L3A1, presented with complaints of scar site pain and swelling from 2 years. On examination, 1×1 cm firm tender brownish discolored swelling seen at LSCS scar.

Past surgical history included previous LSCS. Time since last surgery was 4 years.

As per investigations, ultrasonography was inconclusive. MRI showed T1 and T2 hypointense lesion suggestive of endometrioma.

Management included wide excision.

Follow up

Histopathology report confirmed scar endometriosis. Showed no recurrence in a follow up course of 1.5 years.

Figure 8: Demarcating area for excision in case 13.

Case 13

A 29-year-old female P1L1, presented with complaint of pain abdomen for 10 months. Patient also complained of swelling felt at scar, not increasing in size over this period. On examination lump felt at left margin of scar.

Past surgical history included LSCS 1 year back.

As per investigations, USG showed hypoechoic lesion. MRI showed T1 and T2 hypointense lesion. Managed medically with injection leuprolide 3.75 mg per month for 3 months, showed no relief in symptoms or size of swelling. Underwent wide excision with meshplasty.

Follow up

Histopathology report confirmed scar endometriosis. Showed no recurrence in a follow up course of 3 months.

Outcomes

Women with scar endometrioma presented in 2nd–3rd decade of life. Mean age of presentation in our study was 28.9 years. Women developed symptoms within 9 months to 6 years post last surgery. In our series the earliest presentation post-surgery was 9 months.

Figure 9: Excised tissue containing scar endometrium (case 13).

Figure 10: Defect in rectus sheath post excision (case 13).

USG was inconclusive in many cases and incorrectly showed features suggestive of granuloma in 1 case. MRI showed hypointense T1 and T2 lesions in all cases and thus able to diagnose and demarcate endometrioma correctly. Confirmatory test being histopathological examination.

A total of 3 patients were given preoperative medical management but showed no improvement.

Treatment was achieved with complete surgical excision in all 13 patients. Mean duration of surgery in our series was 52 minutes. Meshplasty was done in 4 cases. In our case series we did not come across any recurrence.

Table 1: Tabular summary of case presentation.

S. no.	Age (years)	No. and type of surgery	Time since last surgery (years)	Symptom	Sign	USG	MRI	CA 125U/ml	HPE	Medicati-on	Surgery	Follow-up (years)
1	25	2 episiotomies	3	Episiotomy site swelling on and off	2×3 cm cystic mass	-	T1, T2 hypointense lesion suggestive of endometrioma	-	Gold standard	-	Wide excisio n	8
2	25	Laparoscopy	1	Painful umbilical swelling	1×1 cm bluish cystic mass	-	-	14	-	Dinogest	Wide excision	7 years 2 months
3	39	1 LSCS	5	Painful scar site swelling	Non reducible swelling	Hypoech oic lesion	-	13	-	-	Wide excision	7
4	31	2 LSCS	1	Scar site painful swelling	1×1 cm firm swelling	Granulo ma	-	-	-	Progeste-rone	Wide excision	7
5	27	Appendectomy	2	Cyclical scar site swelling	Scar site induration	Incon-clusive	-	-	-	-	Wide excision	6
6	35	2 LSCS	4	Scar site pain	3×2 cm firm tender mass	-	-	11.4	-	-	Wide excision	6
7	28	2 LSCS vertical scar	5	Scar site cyclical pain	Scar site induration 4×2 cm	-	-	26.6	-	-	Wide excision with meshplasty	5
8	26	1 LSCS, 1 abortion	2	Scar site burning and pain	1×2 cm tender mass	-	-	9	-	-	Wide excision	5
9	24	2 LSCS, 2 abortions	6	Painful scar site swelling	2×3 cm swelling adherent to underlying tissue	-	-	15.9	-	-	Wide excision with mesh repair	4 years and 2 months

Continued.

S. no.	Age (years)	No. and type of surgery	Time since last surgery (years)	Symptom	Sign	USG	MRI	CA 125U/ml	HPE	Medicati-on	Surgery	Follow-up (years)
10	29	1 laparotomy	3	Pricking scar site pain	2×2 cm tender cystic mass	-	-	20	-	-	Wide excision	4
11	32	1 LSCS, 1 hysterectomy	9 months	Cyclical scar site painful swelling increasing in size	4×3 cm, 1×1 cm firm cystic masses along scar	-	-	45	-	-	Wide excision with mesh plasty	2 years and 6 months
12	26	1 LSCS 1 abortion	4	Scar site pain and swelling	1×1cm firm tender brownish discoloured swelling	-	-	21.7	-	-	Wide excision	1.5
13	29	1 LSCS	1 years	Pain for 10 months	Lump at left margin of scar	Hypoechoic lesion	-	-	-	Injection leuprolide	Wide excision+ mesh repair	3 months

Note: LSCS- Lower (uterine) segment caesarean section.

DISCUSSION

Surgical site endometriosis is rare palpable mass in any previous incision site. Cyclic pain, non-cyclic or constant pain are pathognomonic clinical features. One has to have a strong clinical suspicion of endometriosis when a patient present with pain and mass at or near any surgical scar. Scar endometriosis is difficult to diagnose and often confused with surgical site granuloma.[3] USG being the initial investigation is inconclusive in many cases. USG when judiciously used with Doppler may lead to a diagnosis of endometriosis.[3] MRI can be more helpful when the lesion is small because of its high spatial resolution. Furthermore, it performs better than CT scan in detecting the planes between muscles and abdominal subcutaneous tissue.[5] This case series used MRI to diagnose and demarcate scar endometriosis. FNAC was avoided due to invasiveness of procedure and contemporary studies has shown cutaneous endometriosis and metastatic cancers as diagnostic pitfalls of procedure.[6]

Case 2 and 4 were treated medically with long term progestrone, showed relief of pain as long as medications were given with no effect on size of mass. Case 13 treated with Inj Leuprolide 3.75 mg monthly, showed only mild symptomatic relief in pain. Recently there has been reporting of gonadotropin agonist use but only with the prompt improvement in symptoms with no change in the lesion size.[7]

Scar endometriosis is best tackled by complete excision of the lesion with wide margins of about 1 cm around the mass. We should consider abdominal wall reconstruction with mesh besides wide local excision in larger lesions involving the rectus sheath or muscle that leave a wide post-excisional defect.[8] A diligent dissection and excision prevents local recurrence.

Recurrence rate was nil in present case study. To prevent the recurrences, surgical excision remains the preferable method. Local recurrence is avoided by good surgical technique.

CONCLUSION

Scar endometriosis is a rare clinical entity and often mimics a variety of clinical conditions and hence present a diagnostic dilemma. High index of suspicion in women of reproductive age group having localized cyclical symptoms and mass at or near a scar, following a previous obstetric or gynecological procedure helps in diagnosing this condition. Good surgical technique and due precautions should be exercised during surgery to avoid endometrial re-implantation at surgical sites, which otherwise may lead to scar endometriosis recurrence and its associated morbidity.

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