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Case Report

An unusual case of laparoscopic appendicectomy scar site endometriosis

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ABSTRACT

Scar endometriosis following caesarean section is now becoming a relatively common complication. Endometriosis in the laparoscopic port site following appendicectomy is rare. Metaplasia theory probably explains the reason behind the formation of endometriosis following a non-gynecological procedure. We reported a case of scar endometriosis in the site of laparoscopic appendicectomy scar in a 29-year-old multiparous-women, who presented with pain and swelling in the sub-umbilical area getting aggravated during menstruation. A mass of 4×3×3 cm was found extending from the subcutaneous plane to the rectus muscle in the sub-umbilical region with underlying peritoneal involvement. There was no evidence of pelvic endometriosis. As surgical treatment remains the first line in scar endometriosis with the least recurrence rate, endometrioma excision was performed with one cm margin clearance all around. As complete excision with a wide margin was done, postoperative hormone prophylaxis is not required for her. Six months follow-up did not show any recurrence.

Keywords: Scar endometriosis, Laparoscopic appendicectomy, Excision

INTRODUCTION

The incidence of scar site secondary endometriosis is rising due to an increase in cesarean section rates. It accounts for 0.03% to 1.7% of women undergoing cesarean section or gynecological procedures.[1,2] Though cyclical aggravation of symptoms is typical of scar endometriosis, it is present only in 65% of patients. In the rest of the women, non-cyclical pain is reported, which leads to misdiagnosis and inappropriate management.[3] There is a chance of malignant transformation reported in a case of scar endometriosis in around 0.3 to 1%. Clear cell type of malignant transformation has been reported in the literature.[4] The patient's severe pain and chances of malignant transformation mandate the treatment for scar endometriosis. Though the implantation of endometriosis in scars following gynecological laparoscopic procedure is reported, its occurrence following laparoscopic appendicectomy is very rare.[5] In the absence of meddling of endometrial tissue during surgical procedures like appendicectomy, the chance of occurrence of scar endometriosis could not be explained by implantation theory. Here we reported a case of scar endometriosis in the laparoscopic port site following laparoscopic appendicectomy.

CASE REPORT

A 29-year-old multi-parous woman came to us with excruciating painful swelling in the infra-umbilical region for two years. She reported an increase in pain intensity and size during menstruation, which reduced following menstruation. She had previous two vaginal deliveries. She gave a history of uterine perforation following dilatation evacuation for unwanted pregnancy eight years back, which was repaired through a suprapubic transverse incision. Sterilization was done one year later by the open method through the same suprapubic incision. The patient had a history of laparoscopic appendicectomy done two years ago. Subsequently, she developed symptoms after

three months of surgery in the scar site. Examination revealed a tender swelling of 4×4 cm, firm in consistency, just below the umbilicus with restricted mobility, probably in the plane of the rectus muscle and sheath. The lower end of the swelling was 8 cm above the sterilization scar. A clinical diagnosis of scar endometriosis was made. Differential diagnosis was suture site granuloma and hematoma.

Ultrasound examination revealed a hypoechoic heterogeneous lesion in the intramuscular plane of rectus sheath of size 3.7×2.7×3.6 cm suggestive of scar endometriosis or suture site granuloma. Contrast MRI (Figure 1) showed a moderately defined soft tissue intensity lesion measuring 4.2×2.5×4.1 cm noted in the midline in the infra-umbilical region, 1.3 cm from the umbilicus, extending into the rectus muscle and to the subcutaneous plane with heterogeneous signal intensity on T1 and T2 imaging. There were few T1 and T2 hyperintense foci noted without diffusion restriction. The post-contrast study showed heterogeneous enhancement. The above findings were suggestive of scar endometriosis.

Figure 1: Contrast MRI showed soft tissue lesion measuring 4.2×2.5×4.1 cm noted 1.3 cm from the umbilicus in the rectus muscle and subcutaneous plane with heterogenous signal intensity on T1 and T2 imaging.

Exploration of the mass was performed under anesthesia. A mass of 4×3×3 cm was extending from the subcutaneous plane to the rectus muscle in the sub-umbilical region. There was underlying peritoneal involvement present. There were no adhesions noted with underlying bowel and omentum. Uterus and bilateral tubes and ovaries were normal with no evidence of pelvic endometriosis. Mass was excised with 1 cm clearance all around. As the upper end of mass was 1.3 cm below the umbilicus, the umbilicus was preserved in our case and she did not require umbilical reconstruction. The possibility of rectus sheath defect due to wide excision was kept in mind and the surgeon was called for an opinion regarding mesh. Favorably, there was no tension on suturing the rectus sheath, thereby not needing mesh repair. The postoperative period was uneventful. The histopathological report showed fibro collagenous tissue with scattered endometrial glands lined by secretory epithelium and dense fibrosis in the stroma, indicating endometriosis (Figure 2).

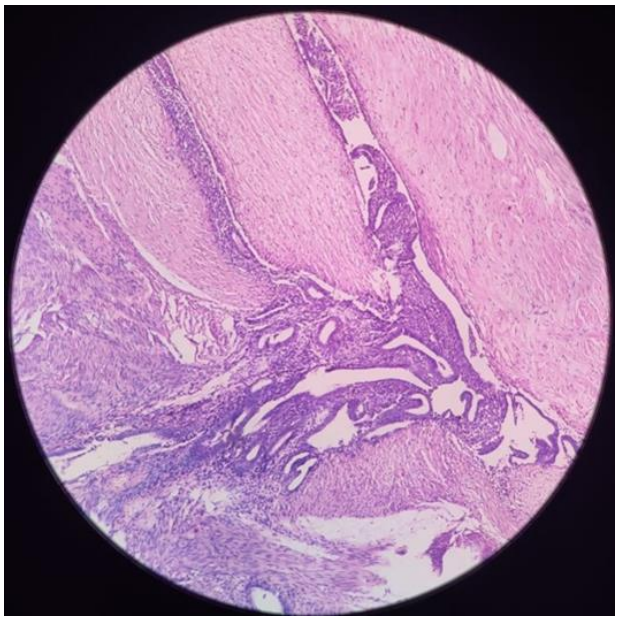

Figure 2: Histopathological image showed fibro collagenous tissue with scattered endometrial glands and dense fibrosis in the stroma, indicating endometriosis.

As wide clearance was given and there was no evidence of endometriosis in other sites, postoperative hormone therapy was not started in this patient. Six months follow-ups of the patient did not show any recurrence.

DISCUSSION

So far only one case of scar endometriosis is reported in the literature in the open appendicectomy scar site.[6] Retrograde implantation theory, coelomic metaplasia theory, and direct implantation theory are discussed in the literature behind endometriosis development.[7] Implantation theory may not fit in our case, as endometrioma developed 6 years after the perforation of the uterus, and scar endometriosis developed in the site of the appendicectomy scar site high up in location. Metaplasia of the appendicectomy scar tissue might be the probable cause here. Metaplasia can occur under influence of inflammatory processes, hormonal changes, or immunological factors.[8] Scar tissue in any site in the body during the healing phase can undergo metaplasia based on this metaplastic theory.

Scar endometriosis is often confused with suture site granuloma or hematoma. Good clinical history and examination help in arriving at the diagnosis. As

gynecologists are well aware of scar endometriosis, usually dilemma occurs with atypical non-cyclical clinical presentation confused with incisional hernias, granuloma, or hematoma.9 Workup of the women with doubtful scar endometriosis includes ultrasound, CT, and MRI. MRI has a sensitivity of 90 to 92% and specificity of 91 to 98%.[10] Confirmatory diagnosis is made only after the histopathology. Fine needle aspiration cytology can confirm preoperatively.[11]

Like pelvic endometriosis, medical and surgical management was done for scar endometriosis. Medical management of scar endometriosis produced only temporary relief of symptoms. Symptoms often recurred with the cessation of medications.[12,13] Surgical resection led to healing in 95% of cases, and recurrence appeared in 4.3% of the cases.[14] Till now, the surgical excision of the mass with a one cm margin was the standard management for scar endometriosis with low recurrence. In case of wide excision of the large lesion, there were chances of creating rectus sheath defect necessitating mesh repair.

The postoperative recurrence was reported to be 1.5-9.1%.[15] Recurrence can happen either due to inadequate surgical excision or the presence of concurrent pelvic endometriosis. Chances of concurrent pelvic endometriosis are reported in 18.8% of cases.[16] So we need to check preoperatively and intraoperatively to provide complete treatment. There is no evidence supporting the need for postoperative hormonal prophylaxis for preventing scar endometriosis recurrence, except there, is incomplete excision or concurrent pelvic endometriosis.

There were many non-surgical management options found to be effective for scar endometriosis. There are reports of using an intralesional ultrasound-guided injection of ethanol.[17] It acts as a sclerotherapy agent and cures the lesion. Some radiological interventions such as Ultrasound-guided high-intensity focused ultrasound therapy (USgHIFU) and cryoablation were investigated and found to be effective with low recurrence.[18,19] Cryoablation therapy has a 14% recurrence rate. Since USgHIFU has less than 8% recurrence, it is better than medical management. HIFU also eliminates the side effects of surgical excision such as blood loss and rectus sheath defect, needing mesh repair.[18,19] But this newer interventional procedure is not available in many places.

Due to the clear-cut rise in scar endometriosis in recent years, we need to work on preventive measures during each gynecological surgery. As implantation theory is the basis for scar endometriosis after gynecological surgeries, measures such as exteriorization of the uterus, peritoneal washings after uterine closure, and using different surgical instruments for the uterus and abdominal wall are some of the precautions suggested by researchers to prevent scar endometriosis following open gynecological surgeries.[14,20] In laparoscopic surgeries, the use of endobag for specimen retrieval will be helpful to reduce scar endometriosis incidence.[21] Unfortunately, these measures may not prevent scar endometriosis from occurring following the metaplasia of scar tissue.

CONCLUSION

Scar endometriosis can happen following any surgical procedure including a non-gynecological procedure. Metaplasia theory explains the reason behind the formation of endometriosis following a non-gynecological procedure. Endometrioma excision with a one cm margin is the standard option, with the lowest recurrence rate. Despite medical management producing good results in pelvic endometriosis, its use in scar endometriosis is found to have a high recurrence rate. There is no evidence supporting the need for postoperative hormonal prophylaxis for preventing scar endometriosis recurrence, except if there is incomplete excision or concurrent pelvic endometriosis.

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