

Abdominal wall endometrioma: Our experience in Vladimir, Russia

Mahir Gachabayov, Roman Horta¹, Dmitriy Afanasyev², Timur Gilyazov³

Departments of Abdominal Surgery and ¹Gynecology, Vladimir City Clinical Hospital of Emergency Medicine, ²Ambulatory Surgery Center, Vladimir City Clinical Hospital No. 5, ³Department of General Surgery, Oblast Clinical Hospital, Vladimir, Russia

ABSTRACT

Background: Endometriosis is defined as an estrogen-dependent, benign inflammatory disease characterized by the presence of ectopic endometrial implants. Abdominal wall endometrioma (AWE) being a rare entity is a benign tumor defined as ectopic functional, endometrial tissue located in the abdominal wall. **Subjects and Methods:** A retrospective study of 23 female patients treated with AWE in four departments of three centers in Vladimir city, Russia, from January 2010 to December 2014 was performed. **Results:** In twenty patients (87%), AWE was symptomatic, and in three patients (13%), AWE was asymptomatic. Esquivel triad presented in 17 patients (74%), and modified Esquivel triad existed in 20 patients (87%). All 23 patients were operated, and AWE excision was performed. Recurrence occurred in 4 cases (17.4%) and was associated with postoperative pain and seroma. **Conclusion:** Postoperative pain for more than 7 days and seroma (on ultrasonography) seem to be associated with recurrence of AWE.

Key words: Abdominal wall endometrioma, endometriosis, recurrence, seroma, surgical excision

Address for correspondence:

Dr. Mahir Gachabayov,
Department of Abdominal Surgery,
Vladimir City Clinical Hospital of
Emergency Medicine, 600022,
Stavrovskaya Street, 6-73,
Vladimir, Russia.
E-mail: gachabayovmahir@gmail.
com

INTRODUCTION

Endometriosis is defined as an estrogen-dependent, benign inflammatory disease characterized by the presence of ectopic endometrial implants.¹ Endometriosis affects 10%–15% of reproductive-aged women.^{2,3} The most common sites of endometriosis, in decreasing order, are the ovaries, anterior/posterior cul-de-sac, broad and uterosacral ligaments, uterus, fallopian tubes, sigmoid colon, and appendix.⁴ Abdominal wall endometrioma (AWE) being a rare entity is a benign tumor defined as ectopic functional, endometrial tissue located in the abdominal wall.

SUBJECTS AND METHODS

A retrospective study of 23 female patients treated with AWE in four departments of three centers in Vladimir city, Russia, from January 2010 to December

2014 was performed. The main inclusion criterion was histologically confirmed definitive diagnosis of AWE after its excision.

Data collected include age, time from previous operation, type of previous operation, size of excised endometrioma, clinical presentation, recurrence, and postoperative course.

Data were collected and analyzed using Statistica 6.0 (StatSoft Inc., Tulsa, OK, USA, 2001). Mean, standard deviation (mean ± standard deviation), and percentage became the descriptive statistics of the presented data.

RESULTS

Twenty-three female patients at the age of 21–42 years with AWE were treated in four departments (three departments

This is an open access article distributed under the terms of the Creative Commons Attribution-NonCommercial-ShareAlike 3.0 License, which allows others to remix, tweak, and build upon the work non-commercially, as long as the author is credited and the new creations are licensed under the identical terms.

For reprints contact: reprints@medknow.com

How to cite this article: Gachabayov M, Horta R, Afanasyev D, Gilyazov T. Abdominal wall endometrioma: Our experience in Vladimir, Russia. Niger Med J 2016;57:329-33.

Access this article online

Quick Response Code:



Website:

www.nigeriamedj.com

DOI:

10.4103/0300-1652.193858

of surgery and a department of gynecology) of three clinics. The mean age of the patients appeared to be 32.1 ± 5.16 years. All patients were previously operated: 18 patients (78.2%) had previously undergone cesarean section and 5 patients (21.7%) – gynecologic procedures. The approach in all patients was Pfannenstiel incision. The mean time from the previous operation to the onset of AWE appeared to be 2.6 ± 1.3 years (from 1 to 6 years). Positive correlation between the age and the time from previous surgery to the onset of AWE was found [Figure 1].

In twenty patients (87%), AWE was symptomatic, and in three patients (13%), AWE was asymptomatic.

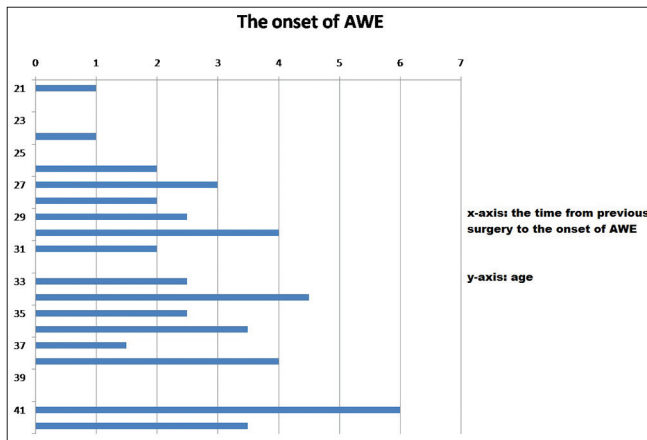


Figure 1: The interval from index surgery to the presentation of symptoms related to age

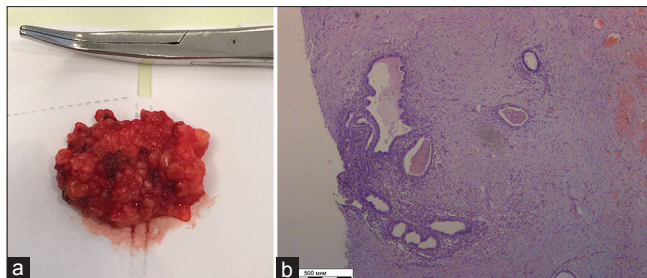


Figure 2: (a) The specimen of small abdominal wall endometrioma. (b) Histology of endometrioma showing endometrial glands and stroma

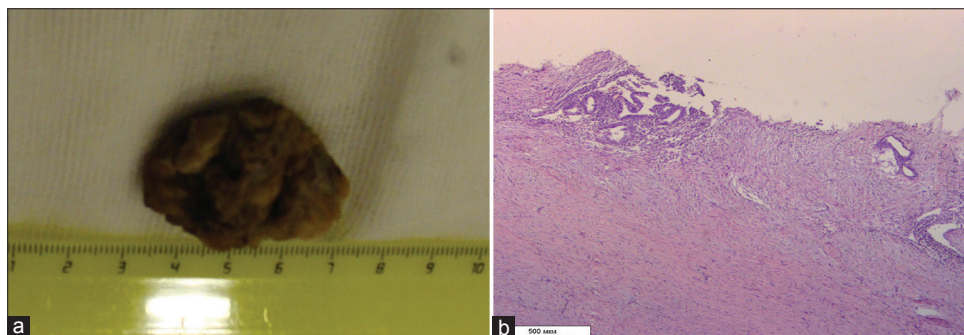


Figure 3: (a) The specimen of medium abdominal wall endometrioma. (b) Histology of abdominal wall endometrioma showing endometrial glands and stroma

Esquivel triad including tumor, periodic pain associated with menses, and cesarean section was considered to be the main clinical symptom complex in our patients.⁵ Esquivel triad presented in 17 patients (74%). Three of the remaining six patients were asymptomatic and three had undergone a gynecologic procedure previously. We modified Esquivel triad adding gynecological procedures to cesarean section. Modified Esquivel triad existed in 20 patients (87%).

All 23 patients were operated, and AWE excision was performed. In twenty patients, the anesthesia was local and the extent of surgery was limited to tumor excision; in three patients, the anesthesia was spinal and the extent of surgery emerged to be abdominal wall autoplasty in one case and alloplasty using polypropylene hernia mesh in two cases after tumor excision. All excised tumors were sent to histology, and the diagnosis of AWE was confirmed in all patients. The size of endometrioma differed from 1.5 to 6 cm. In 17 patients, the size of AWE was small, that is, 0–3 cm [Figure 2]; in 5 patients, medium – 3.1–5 cm [Figure 3]; in one patient, large – 6 cm. Positive correlation between the age, the time from previous surgery to the onset of AWE, and the size of AWE exists as shown in Figure 4. There were no major complications in the postoperative period. Five patients (21.7%) had postoperative pain at the site of surgery for more than 7 days. They experienced the relief of pain with hormonal therapy; however, the pain was waxing with withdrawal of medication. Postoperatively, ultrasonography (USG) was performed to all patients. In seven patients (30.4%), seroma was identified. And, in three of these seven patients, seroma was associated with postoperative pain.

Recurrence

Recurrence occurred in four cases (17.4%). All patients had symptomatic AWE. The demographic and clinical data of the patients with recurrence are shown in Table 1. All patients with recurrent AWE had postoperative pain longer than seven days and three of them had seromas on USG. AWE recurred within the first postoperative 3 months in these patients. Hence, postoperative pain

and seroma could be the result of nonadequate extent of AWE excision.

DISCUSSION

Endometriosis is the presence of functioning endometrial tissue outside the uterine cavity, whereas endometrioma is its well-circumscribed mass.⁶ The incidence of AWE varies from 0.03% to 0.8%.^{7,8} Several theories of endometrioma formation were proposed which include hematogenous, lymphatic, and iatrogenic spread of endometrial cells, metaplastic change of pluripotent cells at any site to endometrial cells, retrograde spread of endometrial cells to the pelvis during menstruation, and immune system dysfunction.^{9,10} Scar endometrioses are believed to be the result of direct inoculation of the abdominal fascia or subcutaneous tissue with endometrial cells during surgical intervention and subsequently stimulated by estrogen to produce endometrioses. This theory is convincingly demonstrated by experiments, in which normal menstrual effluent transplanted to the abdominal wall resulted in subcutaneous endometriosis.^{6,11,12}

The first risk factor is a previous cesarean section which is strongly supported by the theory of iatrogenic spread.¹³ Furthermore, other risk factors include an early hysterotomy in pregnancy, increased menstrual flow, and alcohol consumption. High parity has been shown to be a protecting factor against AWE.^{14,15}

The clinical presentation of AWE is varicolored. The most common symptoms include mass sensation, pain, bleeding,

dysmenorrhea, and dyspareunia.^{16,17} Some patients can be asymptomatic that is painless palpable tumor. In our series, 3 out of 23 patients (13%) were asymptomatic. Palpable mass presents in 96% of patients.¹⁸ The visual appearance also varies depending on the depth of AWE: From nonvisible (only palpable) mass to black nodular swelling.¹⁹ Pain presents in the vast majority of patients with AWE; however, the characteristic of pain can be different. Bektas *et al.* have shown the pain to be cyclic in 40% and noncyclic in 45% of patients.²⁰ However, Zhao *et al.* have reported 87.5% among the reviewed 64 patients to have cyclic pain.²¹ In our series, 20 out of 23 patients (87%) presented with cyclic pain. Esquivel-Estrada *et al.* have described the clinical symptom complex, that is, Esquivel triad, which includes palpable tumor, cyclic pain, and the history of cesarean section.⁵ In our patient series, Esquivel triad presented in 17 patients (74%). However, when we modified Esquivel triad by adding gynecological procedures to cesarean section, the triad became more sensitive. The modified Esquivel triad presented in twenty patients (87%). The mean age of the patients at the time of symptom presentation has been shown to be 31.4 years, and the interval from index surgery to the presentation of AWE has been shown to be 3.6 years.¹⁸ In our patient series, they appeared to be 32.1 and 2.6 years, respectively.

The diagnosis of AWE is mostly clinical when the patients are presented with Esquivel triad. However, cases with asymptomatic palpable tumor or tumor with noncyclic pain can bear a suspicion to various conditions. Therefore, the preoperative diagnosis in these patients can be different: From incisional hernia²² to metastatic cancer.²³ This is also the reason why these patients are frequently presented to the attention of general surgeons. In cases with nonclassic presentation of AWE, radiologic evaluation is beneficial. Although the sensitivity of radiologic modalities is high, they are not able to distinguish among several types of masses of abdominal wall. USG shows AWE as a solid, hypoechoic lesion containing internal vascularity on power Doppler examination. In some cases, these lesions can contain cystic areas.²⁴ Hensen *et al.* have shown the sensitivity of USG to be 92%.⁸ Knowledge of the specific sonographic features of AWE would help differentiate AWE from other abdominal wall masses, such as hernias, hematomas, lymphomas, lipomas, and subcutaneous cysts.²⁵ Computerized tomography (CT) findings may help diagnose, exclude, or suggest the

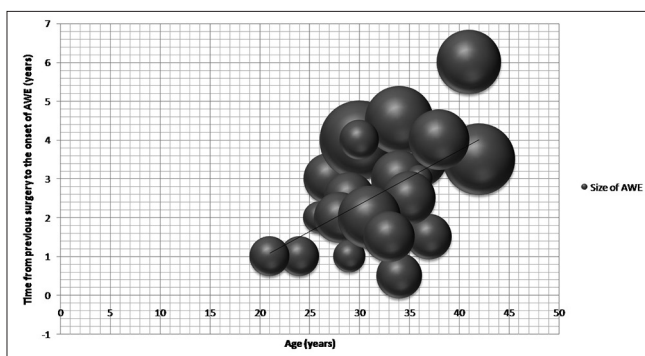


Figure 4: The correlation between the interval from index surgery to the onset of abdominal wall endometrioma, the age, and the size of endometrioma

Table 1: Demographic and clinical data of the patients with recurrence (n=4)

Age	Surgery to AWE onset time (years)	Previous surgery	Clinical presentation	Size of AWE (cm)	Postoperative pain	Seroma
24	1	Cesarean	Symptomatic	0-3	+	+
29	2.5	Cesarean	Symptomatic	0-3	+	-
21	1	Cesarean	Symptomatic	0-3	+	+
29	1	Cesarean	Symptomatic	0-3	+	+

AWE – Abdominal wall endometrioma

presence of a mass and define its extent and nature. AWE may be hyperattenuating compared with muscle, mild to moderate enhancement is seen with contrast.²⁶ Magnetic resonance imaging provides better contrast resolution than CT and USG and is superior to CT for depicting the delineation between muscles and abdominal subcutaneous tissues and infiltration of abdominal and pelvic wall structures. It depicts small lesions and may be used to identify hemorrhage associated with endometriotic lesions.^{26,27} Fine-needle aspiration cytology has been shown to be a fast, accurate, and inexpensive method to make diagnosis before surgery.²⁸ The most specific findings are endometrial-like epithelial cells, stromal cells, and hemosiderin-laden macrophages.²⁹ Because needle tract endometriosis has been reported, it is advisable to include the site of aspiration in the surgical resection field.^{10,29}

Several treatment options have been reported including pharmacological and surgical treatment. Medical treatment with the use of progestogens, oral contraceptive pills, and danazol is not effective and gives only partial relief in symptoms and does not ablate the lesion.⁶ Moreover, due to side effects such as amenorrhea, weight gain, hirsutism, and acne, compliance is unlikely.⁶ Rivlin *et al.* used leuprolide acetate, a gonadotropin agonist, in the treatment of AWE.³⁰ Although it improved the symptoms, it has been shown not to influence the tumor size.³⁰ Bozkurt *et al.* reported a case of successful treatment of intramuscular AWE using ultrasound-guided intralesional ethanol injection, followed by medical treatment using oral contraceptives for 3 months.³¹ The definitive treatment of AWE and the gold standard is wide surgical excision.^{10,21} Moazeni-Bistgani recommends either irrigation of the wound with high-jet saline solution before wound closure or repair of peritoneum at the time of cesarean section as a preventive measure.³²

The rate of recurrence of AWE after surgical excision is various. Ecker *et al.* have reported recurrence in 7.7%,¹⁷ and Bektas *et al.* in 9.1% of cases.²⁰ Horton *et al.* have shown the rate of recurrence to be 4.3% in the review of 455 patients.¹⁸ In our patient series, the rate of recurrence appeared to be high (17.4%). In all patients, the recurrence was associated with postoperative pain more than 7 days and seroma on USG. We believe that these symptoms are the manifestation of the residual endometrial tissue, and in these cases, the recurrence was associated with nonadequate extent of surgery. The most significant complication of AWE is malignant transformation which is likely to occur in 0.3%–1% of cases.^{33,34} The principal risk factors of malignant transformation of endometriosis include advanced age of the patient, if they are postmenopausal, and if the tumor diameter of an endometriotic lesion is >9 cm.^{35,36}

CONCLUSION

Esquivel triad is a clinical symptom complex specific for AWE; however, it requires modification, that is, addition of gynecological procedures to cesarean section. Postoperative pain longer than 7 days and seroma are the results of nonradical excision of AWE and seem to be associated with the recurrence of AWE.

Financial support and sponsorship

Nil.

Conflicts of interest

There are no conflicts of interest.

REFERENCES

- Giudice LC, Kao LC. Endometriosis. *Lancet* 2004;364:1789-99.
- Olive DL, Schwartz LB. Endometriosis. *N Engl J Med* 1993;328:1759-69.
- Olive DL, Pritts EA. Treatment of endometriosis. *N Engl J Med* 2001;345:266-75.
- Macer ML, Taylor HS. Endometriosis and infertility: A review of the pathogenesis and treatment of endometriosis-associated infertility. *Obstet Gynecol Clin North Am* 2012;39:535-49.
- Esquivel-Estrada V, Briones-Garduño JC, Mondragón-Ballesteros R. Endometriosis implant in cesarean section surgical scar. *Cir Cir* 2004;72:113-5.
- Thapa A, Kumar A, Gupta S. Abdominal wall endometriosis: Report of a case and how much we know about it? *Internet J Surg* 2007;9:30.
- Chatterjee SK. Scar endometriosis: A clinicopathologic study of 17 cases. *Obstet Gynecol* 1980;56:81-4.
- Hensen JH, Van Breda Vriesman AC, Puylaert JB. Abdominal wall endometriosis: Clinical presentation and imaging features with emphasis on sonography. *AJR Am J Roentgenol* 2006;186:616-20.
- Javert CT. The spread of benign and malignant endometrium in the lymphatic system with a note on coexisting vascular involvement. *Am J Obstet Gynecol* 1952;64:780-806.
- Blanco RG, Parithivel VS, Shah AK, Gumbs MA, Schein M, Gerst PH. Abdominal wall endometriomas. *Am J Surg* 2003;185:596-8.
- Ridley JH, Edwards IK. Experimental endometriosis in the human. *Am J Obstet Gynecol* 1958;76:783-9.
- Seydel AS, Sickel JZ, Warner ED, Sax HC. Extrapelvic endometriosis: Diagnosis and treatment. *Am J Surg* 1996;171:239.
- Nominato NS, Prates LF, Lauer I, Morais J, Maia L, Geber S. Caesarean section greatly increases risk of scar endometriosis. *Eur J Obstet Gynecol Reprod Biol* 2010;152:83-5.
- Oh EM, Lee WS, Kang JM, Choi ST, Kim KK, Lee WK. A Surgeon's perspective of abdominal wall endometriosis at a caesarean section incision: Nine cases in a single institution. *Surg Res Pract* 2014;2014:765372.
- de Oliveira MA, de Leon AC, Freire EC, de Oliveira HC. Risk factors for abdominal scar endometriosis after obstetric hysterotomies: A case-control study. *Acta Obstet Gynecol Scand* 2007;86:73-80.
- Khamechian T, Alizargar J, Mazoochi T. 5-year data analysis of patients following abdominal wall endometrioma surgery. *BMC Womens Health* 2014;14:151.
- Ecker AM, Donnellan NM, Shepherd JP, Lee TT. Abdominal wall endometriosis: 12 years of experience at a large academic institution. *Am J Obstet Gynecol* 2014;211:363.e1-5.

18. Horton JD, Dezee KJ, Ahnfeldt EP, Wagner M. Abdominal wall endometriosis: A surgeon's perspective and review of 445 cases. *Am J Surg* 2008;196:207-12.
19. Kaushik A, Jaiswal A. Diagnosis of primary abdominal wall endometriosis on cytology: An unusual presentation. *Ann Appl Biosci* 2016;3:C1-3.
20. Bektas H, Bilsel Y, Sari YS, Ersöz F, Koç O, Deniz M, *et al.* Abdominal wall endometrioma; a 10-year experience and brief review of the literature. *J Surg Res* 2010;164:e77-81.
21. Zhao X, Lang J, Leng J, Liu Z, Sun D, Zhu L. Abdominal wall endometriomas. *Int J Gynaecol Obstet* 2005;90:218-22.
22. Rao R, Devalia H, Zaidi A. Post-caesarean incisional hernia or scar endometrioma? *Surgeon* 2006;4:55-6.
23. Khetan N, Torkington J, Watkin A, Jamison MH, Humphreys WV. Endometriosis: Presentation to general surgeons. *Ann R Coll Surg Engl* 1999;81:255-9.
24. Wolf C, Obrist P, Ensinger C. Sonographic features of abdominal wall endometriosis. *AJR Am J Roentgenol* 1997;169:916-7.
25. Savelli L, Manuzzi L, Di Donato N, Salfi N, Trivella G, Ceccaroni M, *et al.* Endometriosis of the abdominal wall: Ultrasonographic and Doppler characteristics. *Ultrasound Obstet Gynecol* 2012;39:336-40.
26. Gidwaney R, Badler RL, Yam BL, Hines JJ, Alexeeva V, Donovan V, *et al.* Endometriosis of abdominal and pelvic wall scars: Multimodality imaging findings, pathologic correlation, and radiologic mimics. *Radiographics* 2012;32:2031-43.
27. Balleyguier C, Chapron C, Chopin N, Hélénon O, Menu Y. Abdominal wall and surgical scar endometriosis: Results of magnetic resonance imaging. *Gynecol Obstet Invest* 2003;55:220-4.
28. Medeiros FD, Cavalcante DI, Medeiros MA, Eleutério J Jr. Fine-needle aspiration cytology of scar endometriosis: Study of seven cases and literature review. *Diagn Cytopathol* 2011;39:18-21.
29. Gupta RK. Fine-needle aspiration cytodiagnosis of endometriosis in cesarean section scar and rectus sheath mass lesions – A study of seven cases. *Diagn Cytopathol* 2008;36:224-6.
30. Rivlin ME, Das SK, Patel RB, Meeks GR. Leuprolide acetate in the management of cesarean scar endometriosis. *Obstet Gynecol* 1995;85(5 Pt 2):838-9.
31. Bozkurt M, Çil AS, Bozkurt DK. Intramuscular abdominal wall endometriosis treated by ultrasound-guided ethanol injection. *Clin Med Res* 2014;12:160-5.
32. Moazeni-Bistgani M. Recommending different treatments as preventive measures against incisional endometrioma. *J Fam Reprod Health* 2013;7:105-8.
33. Matter M, Schneider N, McKee T. Cystadenocarcinoma of the abdominal wall following caesarean section: Case report and review of the literature. *Gynecol Oncol* 2003;91:438-43.
34. Leng J, Lang J, Guo L, Li H, Liu Z. Carcinosarcoma arising from atypical endometriosis in a cesarean section scar. *Int J Gynecol Cancer* 2006;16:432-5.
35. Kobayashi H, Sumimoto K, Moniwa N, Imai M, Takakura K, Kuromaki T, *et al.* Risk of developing ovarian cancer among women with ovarian endometrioma: A cohort study in Shizuoka, Japan. *Int J Gynecol Cancer* 2007;17:37-43.
36. Fargas Fàbregas F, Cusidó Guimferrer M, Tresserra Casas F, Baulies Caballero S, Fàbregas Xauradó R. Malignant transformation of abdominal wall endometriosis with lymph node metastasis: Case report and review of literature. *Gynecol Oncol Case Rep* 2014;8:10-3.

Staying in touch with the journal

1) Table of Contents (TOC) email alert

Receive an email alert containing the TOC when a new complete issue of the journal is made available online. To register for TOC alerts go to www.nigeriamedj.com/signup.asp.

2) RSS feeds

Really Simple Syndication (RSS) helps you to get alerts on new publication right on your desktop without going to the journal's website. You need a software (e.g. RSSReader, Feed Demon, FeedReader, My Yahoo!, NewsGator and NewzCrawler) to get advantage of this tool. RSS feeds can also be read through FireFox or Microsoft Outlook 2007. Once any of these small (and mostly free) software is installed, add www.nigeriamedj.com/rssfeed.asp as one of the feeds.