Skin endometriosis between the breasts of a young girl: A case study and literature review

Mohammad Reza Taghavi1,2, Samaneh Mollazadeh3*, Mohammad Bagheri Mansoori4,5 and Mehdi Asadi6

Abstract

Objective: Endometriosis is defined as the presence of functional endometrial glands and stroma outside the uterine cavity. Skin involvement is a rare presentation of this common complication. The purpose of this study is to introduce a markedly atypical case of the skin endometriosis with periodic pains located between the breasts of the 24-year-old girl.

Care report: In this case, the patient with unknown periodic discharges and painful lesion presented in different consulting diagnostics centers for her complaint. After various diagnostic procedures and treatments, she underwent an excision biopsy to evaluate endometriosis. The history of periodic fluid findings of this case aid to indicate endometriosis. This case also emphasizes the significance of suspecting not only the atypical locations of endometriosis but also presentations of endometriosis. Follow-up tests indicated that she was risk-free of endometriosis relapsing status.

Conclusion: The atypical endometriosis sites can present with varied ranges of symptoms, especially ones occurred periodically with menses in young females.

Keywords
Endometriosis, skin, diagnosis

Date received: 2 July 2019; accepted: 29 October 2019

Introduction

The uterine cavity is lined by endometrial cells, which are affected by female hormones.1 Endometriosis is the growth of endometrial-like cells (glands and stroma) outside the uterus, which causes scar tissues, inflammatory reactions, and adhesions. Women with endometriosis primarily complain of dysmenorrhea, dyspareunia, and pelvic pains. The related symptoms affect the patient’s quality of life.2 Clinically, endometriosis is a ubiquitous disease and may cause both intra- and extra-genital symptoms. It is typically seen in 5%–10% of women in the reproductive age. Also, this benign condition typically can be seen in surgical scars.3 Cases have been reported in women with a history of gynecologic surgery, which may explain the migration of endometrial cells.4 It is estimated that this gynecologic condition is high in infertile women and infertility can be found in 30%–50% of cases with endometriosis.5

Typical endometriotic lesions demonstrate histological structures similar to the endometrium, which respond to hormonal stimulations. This disorder is staged as minimal (I), mild (II), moderate (III), or severe (IV), based on location, number, and depth of implants as well as adhesion density.6

Endometriosis typically appears as powder-burn or gunshot lesions which are black, dark-brown, or blue containing old hemorrhage surrounded by fibrosis.

1Faculty of Medicine, North Khorasan University of Medical Sciences, Bojnurd, Iran
2Neyshabur University of Medical Sciences, Neyshabur, Iran
3Natural Products and Medicinal Plants Research Center, North Khorasan University of Medical Sciences, Bojnurd, Iran
4Laboratory of Treata Hospital, Tehran, Iran
5Laboratory of Sohrevardi Neurology Specialist Clinic, Tehran, Iran
6Surgical Oncology Research Center, Mashhad University of Medical Sciences, Mashhad, Iran

*Corresponding author:
Samaneh Mollazadeh, Natural Products and Medicinal Plants Research Center, North Khorasan University of Medical Sciences, Shahrivar Street, Bojnurd, Iran.
Email: samanehmollazadeh@yahoo.com
Telefax: +985831513016
Atypical lesions include red implants and serous or clear nodules. Other appearances consist of white vesicles and yellowish-brown or non-pigmented cysts. Multiple atypical endometriosis sites (thorax, brain, skin, etc.) have been reported, which can develop symptoms periodically with menses in young women. Nevertheless, the diagnosis of this condition is frequently overlooked or delayed by clinicians. The purpose of the present case study is to report endometriosis of the skin between the breasts of the young woman, which indicates a particularly rare endometriosis episode.

Case presentation

A 24-year-old girl presented a recurrent painful mass between the breasts. This swollen mass periodically became painful for 2 years (Figure 1). She had no prior history of gynecologic surgeries, skin injuries, or infections. However, she began growing out mushroom as a home business. Two years after her business being developed, a postulate abscess associated with a periodical drainage appeared between her breasts.

An excisional biopsy was initially done, which confirmed the granulation tissue. A few months later an abscess appeared again on the skin between the breasts. Sample culture was done with the possibility of infection due to actinomycosis, and she was treated with antibiotics for about 1 year. Acute symptoms partially subsided, but periodic discharges continued for 4 years.

She consulted with another medical center where she was evaluated for skin carcinoma and cutaneous tuberculosis, but the results were negative. In the final consultation in our medical center, the patient underwent an excisional biopsy to evaluate endometriosis due to the clinical observation of periodic discharges with menstrual periods. The histopathological result was positive for endometriosis (Figure 2). Based on the clinical and pathological findings, the 24-year-old female was diagnosed with a rare endometriosis between her breasts that periodically became painful. The patient was evaluated for other sites of the endometriosis and nothing was found. Follow-up tests confirmed that she was risk-free from endometriosis relapsing status.

Discussion

Endometriosis has a complex and multifactorial etiology, where several theories have been proposed to explain its pathogenesis. Endometriosis in the locations outside the pelvis is explained by the dissemination of endometriallike cells or tissue through lymphatic and blood vessels. Other possible cellular and molecular mechanisms associate with hormonal, genetic, immune, and environmental components.

Extra-genital endometriosis which occurs outside the pelvis is classified to four different classes as follows: class I containing the intestinal tract; class U containing the urinary system; class L containing the lung as well as thoracic cavity; and class O containing the other sites such as nervous and skin tissue. The most common sites of endometriosis are the ovaries, posterior cul-de-sac, posterior broad ligaments, uterosacral ligaments, uterus, fallopian tubes, sigmoid colon, appendix, and round ligaments. Other less common sites include the vagina, cervix, rectovaginal septum, cecum, ileum, inguinal canals, abdominal or perineal scars, ureters, urinary bladder, as well as the umbilicus. Exceptional cases of endometriosis have been reported in the breast, pancreas, liver, gallbladder, kidney, urethra, extremities, vertebrae, bone, peripheral nerves, lung, diaphragm, and central nervous system. In the most patients, endometriosis is revealed in multiple areas. Endometriosis at extra-pelvic locations frequently causes unusual symptoms. Sometimes, typical catamenial pains also occur with cyclical symptoms in 50% of patients,
such as menstrual variability in size and tenderness of the mass.\textsuperscript{2} The active endometriosis produces inflammatory mediators that cause lesion survival and modulation of reproductive cyclicity. Endometrial cells respond to hormonal changes, which is the way they behave during a menstrual cycle in the lining of the uterus.\textsuperscript{13}

Ectopic endometrial tissues need further evaluations using histological analysis and immunostaining of suspicious tissue. However, extra-pelvic endometriosis probably has been difficult to diagnose because of the absence of typical cyclic pain.\textsuperscript{14}

**Conclusion**

To our knowledge, this is the first case report describing skin endometriosis between the breast of the young woman, which along with other atypical examples displays not only the endometriosis complexity but also the rare atypical endometriosis presentation. It is noteworthy that physicians would be more aware of atypical endometriosis in the extra-pelvic locations, especially in the female subjects without particular etiology. Moreover, the endometriosis should be considered as a possible diagnosis in the cases with unknown lesions that bleed concurrent with menstrual periods.

**Acknowledgements**

The authors are thankful to the Clinical Research Development Unit of North Khorasan University of Medical Science for their helpful cooperation.

**Author contributions**

M.R.T., M.B.M., and M.A. participated in clinical and pathologi- cal researches. S.M. studied related articles and drafted the manu- script. All authors read and approved the final manuscript.

**Declaration of conflicting interests**

The author(s) declared no potential conflicts of interest with respect to the research, authorship, and/or publication of this article.

**Ethical approval**

All procedures performed in the study involving human particip- ants were in accordance with the ethical standards of the institu- tional and/or national research committee and with the 1964 Helsinki declaration and its later amendments or comparable ethical standards.

**Funding**

The author(s) disclosed receipt of the following financial support for the research, authorship, and/or publication of this article: This study was partly supported by a grant from North Khorasan University of Medical Science.

**Informed consent to participate**

Informed consent was obtained from the patient included in the study.

**Informed consent to publish**

The informed consent was obtained from the patient to publish her case.

**ORCID iD**

Samaneh Mollazadeh https://orcid.org/0000-0001-6582-4500

**References**
