

Review Article

Endometriosis: A Real Issue during Adolescence

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- Endometriosis
- Endometriosis in adolescence
- Achromatic Endometriosis
- Chronic pelvic pain
- Dysmenorrhea

Abstract

Background: Although endometriosis is a common pathology among women, only few know its clinical presentation on adolescents. More than half the patients with diagnosed endometriosis presented symptoms before the age of 20, chronic abdominal pain being the most frequent.

Objectives: To review the published literature and to evaluate, rank and synthesize the most relevant facts of Endometriosis in the adolescence, including diagnosis, treatment and complications.

Method: A previous research was performed during 2016 and early 2017, including the database in English and Spanish on Medline, Cochrane Library, EBSCO host, Pubmed. We have used the Scottish Intercollegiate Guidelines Network for ranking and selection of our material.

Results: The actual prevalence of endometriosis in adolescents with chronic pain is relatively high. Despite the proposal of several theories, the etiology yet remains unclear. The optimal management path starts with an exhaustive anamnesis to allow for its detection. Although the final diagnosis is based on laparoscopic findings, medical treatment may be started right away, with a combination of analgesics and hormonal manipulation, if no improvement is observed after 3 months, surgical intervention may be warranted.

Conclusions: Due to incorrect diagnosis and the lack of conscience on early gynecological consult of young women, the pathology may go unnoticed for years. Delayed diagnosis and treatment can have severe social and reproductive repercussion.

ABBREVIATIONS

NSAIDs: Non-Steroidal Anti-Inflammatory Drugs

INTRODUCTION**Background**

Endometriosis is defined as the presence of normal endometrial glands and stroma outside the uterine cavity. It is a benign estrogen-dependent condition, which induces a chronic inflammatory reaction, with progressive change in the morphology of the pelvic cavity [1]. This chronic disease is commonly associated with chronic pain and infertility, but some cases may undergo asymptomatic for years, because of this the real incidence in teenagers is unknown, however several studies reported a prevalence of 25-38% amongst adolescents with chronic pelvic pain and 19 to 73% on those who were subjected to laparoscopy [2]. The Endometriosis Association determinates that 60% of adult woman report pelvic pain before the age of 20 of whom 47% have consulted 5 times or more a specialist to get

accurate diagnosis of endometriosis. On average, there are 9.28 years between the onset symptoms and diagnosis [3].

Methodology

A systematic review was conducted from 2016 to 2017, which included articles and books in English and Spanish, of different databases like: Medline, The Cochrane Library, EBSCO host, Pubmed. The following keywords were used: Endometriosis, Endometriosis in Adolescence, Diagnosis, Treatment, Complications, Achromatic Endometriosis, Chronic Pelvic Pain, Dysmenorrhea and Preservation of Fertility in Adolescents.

We used the levels of evidence and degrees of recommendation of the Scottish intercollegiate guidelines for selecting our material, discarding publications with evidence level 2, 3 and 4 and degree of recommendation D.

Etiology

Several theories have been proposed over the years, trying to explain the etiology of this illness. These theories mention

several factors as retrograde menstruation, coelomic metaplasia, lymphatic and hematologic dissemination, biochemical induction and immunological factors. But since the pathogenesis of this disease is multi factorial and the presentation of this illness is inconstant, none of this theory can explain all cases. J.A Sampson proposed one of the most accepted theory's regarding retrograde menstruation, however, the presence of endometriosis prior to menstruation, challenges this theory.

Studies have shown genetic predisposition in the development of this pathology. Sampson and cols reported that the first degree relatives of the affected patients were significantly more likely to have been diagnosed with endometriosis (7%).

Achromatic endometriosis

The concept of achromatic endometriosis emerges in 1986, when Jansen RPS and Russel P. Describes for the first time this type of non-pigmented lesions, with a more atypical, subtle white image on the peritoneum, with or without thickening, bright red lesions and glandular above the peritoneal surface, and loose adhesions between the ovary, peritoneum or ovarian fossa.

The biopsy on this type of lesions shows presence of endometrial glands and stroma, and they are considered the first stage of endometriosis. The progression of color, from white, red to black, is related to the time of evolution and age of the patients. Where light lesions will be seen in young patients and dark lesions in elderly patients [4]

The recognition of these atypical lesions will allow for a prompt diagnosis of this disease, and thus start treatment on time to avoid complications in adult life.

The first research in Mexico about achromatic endometriosis was conducted by Dr. Kalby and cols, in the Perinatology National Institute including 11 patients with symptoms suggestive of endometriosis. After laparoscopy 7 patients were found with atypical lesions (non-pigmented), 2 presented typical lesions, and the other 2 did not present any type of lesion. The biopsy showed that the difference between the typical lesions and the atypical was the presence of hemosiderin, being absent in the atypical lesions. We may observe from this study how 64% of the patients included, had achromatic endometriosis, highlighting the importance of intentionally looking for these types of lesions in young patients who have symptoms of endometriosis [5] (Figures 1-6).

Clinical and anatomical manifestation

There are a few differences on the clinical presentation of the disease between young patients and adults, although younger patients may seek help because pain, while older patients may complain of infertility. One of the most common symptoms is progressive dysmenorrhea which is found in 64 and 94% of cases. Other symptoms are chronic abdominal pain, gastrointestinal disturbances and sleep disorders, this last one may lead to a decrease in performance and increases the risk of work or school absenteeism. In young women with early sex life, dyspareunia is also reported [6,7]. Studies have shown that the stage of the disease has no relation to the severity of the pain, because of this endometriosis should be ruled out in any young woman who presents continuous pelvic pain, despite treatment

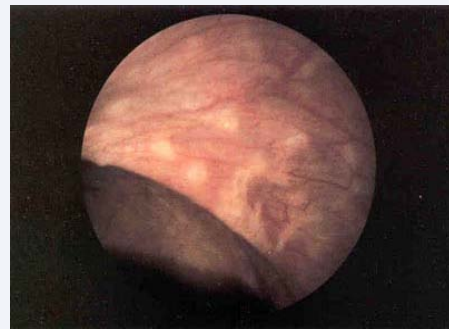


Figure 1 White endometrial implant.

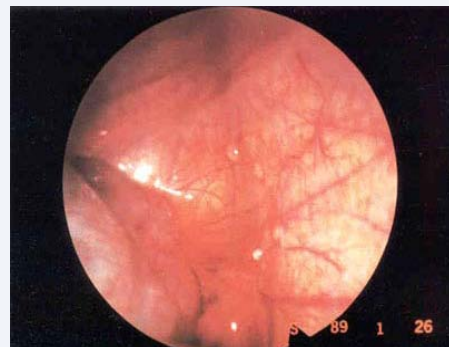


Figure 2 Light-colored endometrial implant.



Figure 3 Red-pink endometrial implant.

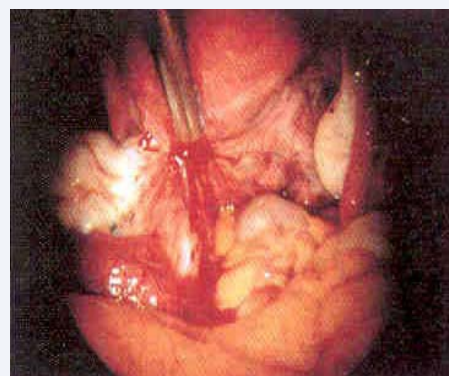


Figure 4 Red endometrial implant.



Figure 5 Peritoneal defect.

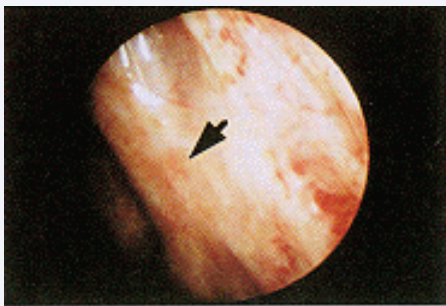


Figure 6 Yellow-Brown endometrial implant.

with a combination of analgesics and hormonal therapy [8]. The most common anatomical presentation occurs in pelvic regions proximal to the uterine fimbriae, this includes all the surface of the ovaries, urinary bladder, the fallopian tubes, the peritoneum and the colon; however, any part of the body can be affected (lung, eye, brain, soft tissue) [9].

Diagnosis

The capital symptom associated with endometriosis is dysmenorrhea, in varied intensity. Pelvic pain in young women may differ from an adult pattern, 9.4% of the young women presented cyclic pain, while 65.5% had cyclic and acyclic pain and 28.1% only acyclic pain. Therefore, 90.6% of these adolescents presented acyclic pain, which opens the diagnostic criteria in their previous evaluation [10].

The physical examination is fundamental for the diagnosis. As previously mentioned, the clinical manifestations are different in these patients, and for that, the clinical exploration have its variations. Noticing the anatomical, physiological, sexual and even psychological differences in this age group. The main objective of physical examination is to determine the etiology of pain and to rule out any tumor or anatomical abnormalities of the reproductive tract. It is necessary to individualize the approach of the pelvic exam according to the patient, for adolescents who are not sexually active, rectal-abdominal examination may be preferred instead of the vaginal-abdominal examination. It is important to evaluate permeability and exclude any obstructive müllerian anomalies, the presence of this anomaly are related to endometriosis [11].

The most specific signs of endometriosis are palpation of deep infiltrative nodules in the uterosacral ligaments or Douglas fundus and direct visualization of characteristic lesions in the vaginal fundus or retrocervix. The fidelity of the clinical examination can be improved if it is performed during menstruation [12].

DIAGNOSTIC IMAGING

Pelvic ultrasound

Vaginal ultrasonography distinguishes endometriomas from other ovarian tumors or cysts. It also excludes structural causes of pelvic pain in adolescents, such as torsion or ovarian hemorrhage, abnormalities of the genital tract, appendicitis or ectopic pregnancy. Endometriomas can be observed as ovarian cysts with sharp edges, with fine internal echoes that transmit sound well, but rarely occur in adolescents. Adenomyosis can be visualized as hypochoic areas with poorly defined borders in the myometrium. Sonography may allow the suspicion of endometriosis even without endometriomas, as in cases suggestive of abnormal adhesions of the ovaries, also known as kissing ovaries sing [13]

Magnetic resonance

Similar efficacy to transvaginal and transrectal ultrasound in the diagnosis of endometriosis in uterosacral and vaginal ligaments. Allows the visualization of solid masses of 1 to 5 cm in diameter and allows for differentiation between a foci of endometriosis and peritoneal metastasis, also allows for the evaluation of implants of retroperitoneal endometriosis, the extent and degree of infiltration. Although it should not be used as a first-line imaging test due to its expense and poor sensitivity to detect peritoneal lesions and staging of endometriosis [14].

Test with gonadotropin-releasing hormone analogs

If the patient presents a painful symptomatology, indicative of endometriosis, without a definitive diagnosis with the previously mentioned image tests, and to avoid a diagnostic laparoscopy, a hormonal treatment with gonadotropin releasing hormone analogues or with combined hormonal contraceptives may be given, to suppress menstruation of the patient. If the pain disappears, the diagnosis of endometriosis is very likely [15].

Laparoscopy

If after three months of medical treatment, the symptoms do not ease, a laparoscopy will be required in order to provide an accurate diagnosis and start with treatment. Laparoscopy has come to replace laparotomy as the main diagnostic technique, it is now the gold standard for diagnosis. It should be performed in all adolescent women with extremely marked symptoms and in those who have received medical treatment (NSAIDs and endocrine inhibition with contraceptives) for a minimum of three months, with no improvement. There's a study that suggests that the red lesions and the Allen-Masters peritoneal defect are more common in adolescents. Comparing the lesions by the age group, the red flame lesions are more frequent in the young women and the lesion in gunpowder grains in the adult. The use of (methylene blue) helps to identify this lesions more easily [16]. If the evidence de endometriosis is not identified by direct visualization, a fundus biopsy should be performed to exclude

the presence of microscopic disease, 3% of the adolescent with chronic pelvic pain, who did not respond to conventional therapy, and visually normal pelvis by laparoscopic has microscopic endometriosis [17].

The presence of endometrial glands or Endometrial stromal at the sites of biopsy establishes the definitive diagnosis. If macrophages with hemosiderin are found in the aspirated peritoneal fluid of the posterior sacral fundus, the diagnosis of achromatic type endometriosis can also be confirmed [18].

TREATMENT

Endometriosis is a chronic and progressive disease, which deserves treatment. The progression of this disease causes serious complications, the most frequent being intestinal and urinary disorders. There is no cure until the levels of hormones (climacteric) naturally decreases. Treatment is a multidisciplinary management, including the use of analgesics, hormonal manipulation, surgery, emotional support, education and complementary therapies.

Endometriosis is a highly recurrent disease which requires medical and surgical treatment, therefore it is necessary to offer different types of alternatives focused on improving quality of life, pain control, limit the progression of the disease and reserve fertility.

Surgical treatment

The laparoscopy is the best choice for these patients, however, surgery alone is not an adequate treatment for endometriosis since there may be microscopic residual disease that should be suppressed with medical therapy. Several studies have reported that symptoms return within approximately one year in 50% of the patients with surgical treatment. The surgery reduces pain in 38% to 100% of patients [19].

Conservative surgical treatment in adolescents is recommended for young patients due the future desire of fertility. Conservative corrective surgery includes: capsulectomies, splitting and fulguration of lesions or foci of endometriosis in peritoneal defects, release of adhesions and resection of nodules. This type of surgical treatment helps decrease symptoms and improve reproductive prognosis. In case of finding endometriomas, the excision of the cyst must be performed, always trying to preserve the ovarian tissue [20].

Medical treatment

It has been proven that suppression of ovarian function for 6 months reduces the pain associated with endometriosis significantly, although recurrence is common after cessation of therapy. Hormonal therapy such as: a cyclic combination of low-dose estrogen/progestin, oral contraceptive pill or progestin therapy alone, should be given with NSAIDs. This therapy leads to decidualization with subsequent atrophy of ectopic and eutopic endometrial tissue, decreasing bleeding and reduced pain [21].

The American College of Gynecology and Obstetrics does not support the use of empirical GnRH agonist therapy for teens of 18 years or younger, as there are possible long-term adverse effects on bone mineral density and formation [22].

Complementary therapy

There are support groups that help patients comprehend and cope with the chronicity of the disease, preventing depression. Acupuncture has shown to diminished the intake of analgesics, although the effects are not yet well known, benefits have been reported in patients who have received this therapy. The production of the prostaglandins can be moderated by a diet low in animal fats, caffeine and alcohol. Also, a diet high in red fruits, fiber and green vegetables, helps in the management of endometriosis. The deficiency of some vitamins such as vitamin B1 can produce cramps, fatigue and decreased pain tolerance. It is important to mention the roll of the magnesium in the dysmenorrhea, as a powerful vasodilator and muscular relaxer [23-25].

PREVENTION

The early recognition of the signs and symptoms, will lead you to a timely diagnosis, preventing the progression into more advanced stages [26]. The follow-up should be clinical (anamnesis and physical examination) and by complementary test (laboratory and imaging).

It is necessary to consider the high rate of recurrence of the disease and its symptoms [27], concomitant medical treatment should be considered in the long term in the context of a chronic disease.

CONCLUSION

Endometriosis in adolescence is a pathology poorly suspected and ill diagnosed because of the lack of experience in detecting the signs or symptoms in young patients, with late diagnosis causing poor quality of life due to pain, discomfort and low performance (school and professional), not to mention the onset complications.

We currently have all necessary means to establish a correct diagnosis, but to achieve this, we must know the symptomatology of the disease in this age group; A complete anamnesis and examination are the most important tools to guide our diagnosis, corroborating with procedures and imaging. It is important to inform women that the beginning of periodic visits to the gynecologist should be since the menarche; this would have a positive impact in establishing early diagnoses and thus avoiding chronic complications

Endometriosis in Adolescence is a condition that must be treated in a multidisciplinary way, in addition to adequate medical treatment, patients must have support groups and psycho-emotional support.

REFERENCES

1. Bara ao RI. Endometriosis: Por qu no la elimina el Sistema inmunol gico. *Ginecol. Obstet. Mex.* 2014; 82: 755-763.
2. Vercellini P, Fedele L, Arcaini L, Bianchi S, Rognoni MT, Candiani GB, et al. Laparoscopy in the diagnosis of chronic pelvic pain in adolescent women. *J Reprod Med.* 1989; 34: 827-830.
3. Kontoravdis A, Hassan E, Hassiakos D, Botsis D, Kontoravdis N, Creatsas G. Laparoscopic evaluation and management of chronic pelvic pain during adolescence. *Clin Exp Obstet Gynecol.* 1999; 26: 76-77.

4. Ballwag ML. Big picture of endometriosis helps provide guidance on approach to teens: comparative histological data show endo starting younger, is more severe. *J Pediatric adolescent gynecology*. Gynecol. 2003; 16: 21-26.
5. Laufer MR, Barbieri Robert L, Blake D, Eckler K. Endometriosis in adolescents: diagnosis and treatment.
6. Kably Ambe A, Matus Cosiles M, di Castro P, Ibarra V, Serviere C. Achromatic endometriosis. *Ginecol Obstet Mex*. 1990; 58: 324-327.
7. Reese KA, Reddy S, Rock JA. Endometriosis in an adolescent population: the emory experience. *J. Pediatric adolescent gynecology*, 1996; 9: 125.
8. Damle LF, Gomez-Lobo V. Pelvic pain in adolescents. *J Pediatr Adolesc Gynecol*. 2011; 24: 172-175.
9. Laufer MR. Gynecologic pain: dysmenorrhea, acute and chronic pelvic pain, endometriosis, and premenstrual syndrome. In: Emans SJ, Laufer MR, Emans, Laufer, Goldstein s *Pediatric and Adolescent Gynecology*. 6th ed. Emans SJ, Laufer MR (Eds), Woltera Kluwer Lippincott Williams and Wilkins; Philadelphia. 2012; 238-271.
10. Auge LM, Jofre FA. Endometriosis: fundamentos etiopatogénicos, diagnóstico y tratamiento, 1ra Ed. *Corpus* 2006; 105-117.
11. Laufer MR, Goitein L, Bush M, Cramer DW, Emans SJ. Prevalence of endometriosis in adolescent girls with chronic pelvic pain not responding to conventional therapy. *J Pediatr Adolesc Gynecol*. 1997; 10: 199-202.
12. Dovey S, Sanfilippo J. Endometriosis and the adolescent. *Clin Obstet Gynecol*. 2010; 53: 420-428.
13. Brosens I, Gordts S, Benagiano G. Endometriosis in adolescents is a hidden, progressive and severe disease that deserves attention, not just compassion. *Hum Reprod* 2013; 28: 2026-2031.
14. Koninckx PR, Ussia A, Adamyan L, Wattiez A, Donnez J. Deep endometriosis: definition, diagnosis, and treatment. *Fertil Steril*. 2012; 98: 564-571.
15. Nassif J, Trompoukis P, Barata S, Furtado A, Gabriel B, Wattiez A. Management of deep endometriosis. *Reprod Biomed Online*. 2011; 23: 25-33.
16. Spaczynski RZ, Duleba AJ. Diagnosis of endometriosis. *Semin Reprod Med*. 2003; 21: 193-208.
17. Stratton P, Winkel C, Premkumar A, Chow C, Wilson J, Hearn-Stokes R, et al. Diagnostic accuracy of laparoscopy, magnetic resonance imaging, and histopathologic examination for the detection of endometriosis. *Fertil Steril*. 2003; 79: 1078-1085.
18. Bazor M, Lafont C, Rouzier R, Roseau G, Thomassin-Naggara I, Daraï E, et al. Diagnostic accuracy of physical examination, transvaginal sonography, rectal endoscopic sonography, and magnetic resonance imaging to diagnose deep infiltrating endometriosis. *Fertil Steril*. 2009; 92: 1825-1833.
19. Ha HK, Lim YT, Kim HS, Suh TS, Song HH, Kim SJ, et al. Diagnosis of pelvic endometriosis: fat-suppressed T1-weighted vs conventional MR images. *AJR Am J Roentgenol*. 1994; 163: 127-131.
20. European Society of Human Reproduction and Embryology (ESHRE). Management of women with endometriosis. 2013.
21. Vercellini P, Somigliana E, Vigano P, Abbiati A, Daguati R, Crosignani PG, et al. Endometriosis: Current and future medical therapies. *Res Clin Obstetrics & Gynecology*. 2008; 22: 275-206.
22. Soares SR, Martínez-Varea A, Hidalgo-Mora JJ, Pellicer A. Pharmacologic therapies in endometriosis: a systematic review. *Fertil Steril*. 2012; 98: 529-555.
23. Bustos HH, Mateo H, Vadillo F, Kably A, Nava G. Validez de la video laparoscopia respecto a la evaluación histológica de lesiones sospechosas de endometriosis en mujeres con esterilidad. *Perinatología y Reproducción Humana*. 1996; 10: 24-31.
24. Walter AJ, Hentz JG, Magtibay PM, Cornella JL, Magrina JF. et al. Endometriosis: correlation between histologic and visual findings at laparoscopy. *Am J Obstet Gynecol*. 2001; 184: 1407.
25. American College of Obstetricians and Gynecologists (ACOG). Endometriosis in adolescents. *Obstetrics & Gynecology Journal*, 2005; 130: 105: 921-927.
26. Kemper KJ, et al. On pins and needles. Pediatric pains experience with acupuncture. *Pediatrics* 2000; 105: 941-947.
27. Barnard ND, Scialli AR, Hurlock D, Bertron P. Diet and sex hormone binding globulin dysmenorrheal and premenstrual symptoms. *Obstetrics & Gynecology Journal*, 2000; 95: 245-250.

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