

Bölüm 40

ENDOMETRİOZİS

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GİRİŞ

Endometriozis, endometrial bez ve stromanın uterin kavite dışında ektopik yerleşmesidir. Endometriozisin literatürde ilk kez 1860 yılında Rokitsansky tarafından tarif edildiğine inanılır (1). Endometriozis, daha çok reproduktif dönemde kadınları etkileyen ancak premenarşyal ve postmenopozal dönemde de görülebilen, estrogen bağımlı, iyi huylu, enflamatuvar bir hastalıktır (2).

Lezyonlar genellikle üreme organlarının peritoneal yüzeylerinde ve komşu pelvik yapılarda bulunur. Pelvis içerisinde en sık overler, tuba uterinalar, anterior ve posterior cul-de-sac ve ligamentlere yerleşir. Ancak barsaklar, perianal bölge, mesane, vajina, serviks, diyafram, plevra, batin duvarı, akciğerler, karaciğer, safra kesesi, böbrekler, dalak, umblikus, cilt, meninksler, meme, göz, omurga, ekstremite hatta insizyon skarları dahil olmak üzere birçok bölgede ortaya çıkabilir (3-7).

Mikroskopik boyutta lezyonlar görülebileceği gibi; ciddi adezyonlara ve fonksiyon kaybına neden olabilecek geniş invaziv lezyonlar da görülebilir. Aynı şekilde semptomlar da geniş bir dağılıma sahiptir. Ektopik endometrial dokuya eşlik eden inflamasyon, fibrozis ve adezyonlar semptomlara neden olur. En tipik semptomlar dismenore, dispareni, kronik pelvik ağrı, disüri ve infertilitedir. Endometriozisli kadınlar tamamen asemptomatik olabileceği gibi kronik pelvik ağrı, infertilite gibi semptomlar nedeniyle hayat kalitelerinde ciddi bir düşüş yaşayabilirler.

Endometriozis, hastaların % 50'den fazlasında uzun süreli tedavi gerektirdiğinden ve cerrahi/medikal tedavi sonrası % 50-80'lik yüksek nüks oranları nedeniyle ciddi bir ekonomik yüke neden olur (8).

Endometriozis üreme çağındaki kadınlarda en sık görülen benign jinekolojik hastalıklardan birisidir. Kesin tanısı için cerrahi gerektiğinden prevalansı net biline-

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KAYNAKLAR

1. Endometriosis. In Fritz MA, Speroff L Clinical gynecologic Endocrinology and Infertility. 8th ed. Wolters Kluwer: Lippincott Williams and Wilkins; 2011:1221-1248.
2. Olive DL, Schwartz LB. Endometriosis. N Engl J Med 1993;328:1759-1769.
3. Giudice LC, Kao LC. Endometriosis. Lancet 2004;364:1789-1799.
4. Kahraman K, Sönmezer M, Güngör M, Ünlü C. Recurrent Vulvar-Perineal Endometriosis. Ar-temis 2003;4:77-79.
5. Eliyatkin N, Karasu B, Zengel B, Postacı H. Sigmoid kolon ve lenf düğümünde ekstragenital endometriozis. Dicle Med J 2010;37:164-167.
6. Rana P, Haghghat S, Han H. Endometrioma of the Liver: A Case Report and Review of the Literature. Case Reports Hepatol. 2019 Jun 4;2019:4734606.
7. Fauconnier A, Chapron C. Endometriosis and pelvic pain: epidemiological evidence of the relationship and implications. Hum Reprod Update 2005;11:595-606.
8. Leyendecker G (2000) Redefining endometriosis: Endometriosis is an entity with extreme pleiomorphism. Hum Reprod 15:4-7.
9. Gruppos Italiano per lo Studio Dell'Endometriosi. Prevalence and anatomical distribution of endometriosis in women with selected gynaecological conditions: results from a multicentric Italian study. Hum Reprod 1994;9:1158-1162.
10. Wheeler JM. Epidemiology and prevalence of endometriosis. Infertil Reprod Med Clin North Am 1992;3:545.
11. McLeod BS, Retzliff MG. Epidemiology of endometriosis: An assessment of risk factors. Clin Obst Gynec 2010;53:389-396.
12. Giudice LC. Clinical practice. Endometriosis. N Engl J Med 2010; 362:2389.
13. Fuldeore MJ, Soliman AM. Prevalence and Symptomatic Burden of Diagnosed Endometriosis in the United States: National Estimates from a Cross-Sectional Survey of 59,411 Women. Gynecol Obstet Invest 2017;82:453-461.
14. Koninckx PR, Meuleman C, Demeyere S, et al. Suggestive evidence that pelvic endometriosis is a progressive disease, whereas deeply infiltrating endometriosis is associated with pelvic pain. Fertil Steril 1991; 5:759-765.
15. Bulun SE: Endometriosis. N Engl J Med 2009;360:268-279 . doi: 10.1056/NEJMra0804690.
16. Sanfilippo JS, Wakim NG, Schikler KN, Yussman MA. Endometriosis in association with uterine anomaly. Am J Obstet Gynecol 1986; 154: 39- 43.
17. Speroff L, Fritz MA. Endometriosis. In: Speroff L, Fritz MA. Clinical Gynecologic Endocrinology and Infertility. Seventh edition LWW, W Kluwer Co.; 2005. p.1103- 33.
18. Vercellini P, Viganò P, Somigliana E, et al. Endometriosis: pathogenesis and treatment. Nat Rev Endocrinol 2014; 10:261.
19. Jansen RP, Russell P. Nonpigmented endometriosis: clinical, laparoscopic, and pathologic definition. Am J Obstet Gynecol 1986; 155:1154.
20. Clement PB. The pathology of endometriosis: a survey of the many faces of a common disease emphasizing diagnostic pitfalls and unusual and newly appreciated aspects. Adv Anat Pathol 2007; 14:241.
21. Prefumo F, Todeschini F, Fulcheri E, et al. Epithelial abnormalities in cystic ovarian endometriosis. Gynecol Oncol 2002; 84:280.
22. Woodward PJ, Sohaey R, Mezzetti TP. Endometriosis: radiologic-pathologic correlation. Radiographics 2001; 21:193.
23. Gustofson RL, Kim N, Liu S, et al. Endometriosis and the appendix: a case series and comprehensive review of the literature. Fertil Steril 2006; 86:298.
24. Jenkins S, Olive DL, Haney AF. Endometriosis: pathogenetic implications of the anatomic distribution. Obstet Gynecol 1986; 67:335.

25. Limbachiya DJ, Agrawal GP. Endometriosis: an enigmatic disease with many faces. *Int J Reprod Contracept Obstet Gynecol* 2017;6:730-8.
26. Dwivedi AJ, Agrawal SN, Silva YJ. Abdominal wall endometriomas. *Dig Dis Sci* 2002; 47:456.
27. Marinis A, Vassiliou J, Kannas D, et al. Endometriosis mimicking soft tissue tumors: diagnosis and treatment. *Eur J Gynaecol Oncol* 2006; 27:168.
28. Zhao X, Lang J, Leng J, et al. Abdominal wall endometriomas. *Int J Gynaecol Obstet* 2005; 90:218.
29. Blanco RG, Parithivel VS, Shah AK, et al. Abdominal wall endometriomas. *Am J Surg* 2003; 185:596.
30. Minaglia S, Mishell DR Jr, Ballard CA. Incisional endometriomas after Cesarean section: a case series. *J Reprod Med* 2007; 52:630.
31. Horton JD, Dezee KJ, Ahnfeldt EP, et al. Abdominal wall endometriosis: a surgeon's perspective and review of 445 cases. *Am J Surg* 2008; 196:207.
32. Morales Martínez C, Tejuca Somoano S. Abdominal wall endometriosis. *Am J Obstet Gynecol* 2017; 217:701.
33. Canlorbe G, Laas E, Cortez A, et al. Spontaneous hymeneal endometriosis: a rare cause of dyspareunia. *BMJ Case Rep* 2014; 2014.
34. Sangi-Haghpeykar H, Poindexter AN 3rd. Epidemiology of endometriosis among parous women. *Obstet Gynecol* 1995; 85:983.
35. Mahmood TA, Templeton A. Prevalence and genesis of endometriosis. *Hum Reprod* 1991; 6:544.
36. Mowers EL, Lim CS, Skinner B, et al. Prevalence of Endometriosis During Abdominal or Laparoscopic Hysterectomy for Chronic Pelvic Pain. *Obstet Gynecol* 2016; 127:1045.
37. Dovey S, Sanfilippo J. Endometriosis and the adolescent. *Clin Obstet Gynecol* 2010; 53:420.
38. Eskenazi B, Warner ML. Epidemiology of endometriosis. *Obstet Gynecol Clin North Am* 1997; 24:235.
39. Janssen EB, Rijkers ACM, Hoppenbrouwers K, et al. Prevalence of endometriosis diagnosed by laparoscopy in adolescents with dysmenorrhea or chronic pelvic pain: a systematic review. *Hum Reprod Update* 2013;19:570–82.
40. Goldstein DP, deCholnoky C, Emans SJ, et al. Laparoscopy in the diagnosis and management of pelvic pain in adolescents. *J Reprod Med* 1980; 24:251.
41. Hediger ML, Hartnett HJ, Louis GM. Association of endometriosis with body size and figure. *Fertil Steril* 2005; 84:1366.
42. Sinaii N, Plumb K, Cotton L, et al. Differences in characteristics among 1,000 women with endometriosis based on extent of disease. *Fertil Steril* 2008; 89:538.
43. Olive DL, Henderson DY. Endometriosis and mullerian anomalies. *Obstetrics and Gynecology*.01 Mar 1987, 69(3 Pt 1):412-415.
44. Arumugam K, Templeton AA. Endometriosis and race. *Aust N Z J Obstet Gynaecol*. 1992;32:164–5.
45. Jurkiewicz-Przondziona J, Lemm M, Kwiatkowska-Pamuła A, et al. Influence of diet on the risk of developing endometriosis. *Ginekol Pol*. 2017;88(2):96-102. doi: 10.5603/GPa.2017.0017.
46. LaMonica R, Pinto J, Luciano D, et al. Incidence of Septate Uterus in Reproductive-Aged Women With and Without Endometriosis. *J Minim Invasive Gynecol*. 2016 May-Jun;23(4):610-3. doi: 10.1016/j.jmig.2016.02.010.
47. Malinak LR, Buttram VC, Elias S, et al. Heritage aspects of endometriosis. II. Clinical characteristics of familial endometriosis. *Am J Obstet Gynecol* 1980;137:332–7.
48. Shigeshi N, Kvaskoff M, Kirtley S, et al. The association between endometriosis and autoimmune diseases: a systematic review and meta-analysis. *Hum Reprod Update*. 2019 Jul 1;25(4):486-503. doi: 10.1093/humupd/dmz014.
49. Nnoaham KE, Webster P, Kumbang J, et al. Is early age at menarche a risk factor for endometriosis? A systematic review and meta-analysis of case-control studies. *Fertil Steril* 2012; 98:702.

50. Missmer SA, Hankinson SE, Spiegelman D, et al. Reproductive history and endometriosis among premenopausal women. *Obstet Gynecol* 2004; 104:965.
51. Missmer SA, Hankinson SE, Spiegelman D, et al. In utero exposures and the incidence of endometriosis. *Fertil Steril* 2004; 82:1501.
52. Wolff EF, Sun L, Hediger ML, et al. In utero exposures and endometriosis: the Endometriosis, Natural History, Disease, Outcome (ENDO) Study. *Fertil Steril*. 2013 Mar 1;99(3):790-5. doi: 10.1016/j.fertnstert.2012.11.013.
53. Chapron C, Lang JH, Leng JH, et al. Factors and Regional Differences Associated with Endometriosis: A Multi-Country, Case-Control Study. *Adv Ther*. 2016 Aug;33(8):1385-407. doi: 10.1007/s12325-016-0366-x.
54. Dai Y, Li X, Shi J, et al. A review of the risk factors, genetics and treatment of endometriosis in Chinese women: a comparative update. *Reprod Health*. 2018 May 21;15(1):82. doi: 10.1186/s12978-018-0506-7.
55. Harris HR, Wieser F, Vitonis AF, et al. Early life abuse and risk of endometriosis. *Hum Reprod* 2018; 33:1657.
56. Mollazadeh S, Sadeghzadeh Oskouei B, Kamalifard M, et al. Association between Sexual Activity during Menstruation and Endometriosis: A Case-Control Study. *Int J Fertil Steril*. 2019 Oct;13(3):230-235. doi: 10.22074/ijfs.2019.5601.
57. Missmer SA, Hankinson SE, Spiegelman D, et al. Incidence of laparoscopically confirmed endometriosis by demographic, anthropometric, and lifestyle factors. *Am J Epidemiol* 2004; 160:784.
58. Parazzini F, Cipriani S, Bianchi S, et al. Risk factors for deep endometriosis: a comparison with pelvic and ovarian endometriosis. *Fertil Steril* 2008; 90:174.
59. Farland LV, Eliassen AH, Tamimi RM, et al. History of breast feeding and risk of incident endometriosis: prospective cohort study. *BMJ* 2017; 358:j3778.
60. Kavoussi SK, Odenwald KC, As-Sanie S, et al. Incidence of ovarian endometrioma among women with peritoneal endometriosis with and without a history of hormonal contraceptive use. *Eur J Obstet Gynecol Reprod Biol* 2017; 215:220.
61. Vinatier D, Orazi G, Cosson M, et al. Theories of endometriosis. *Eur J Obstet Gynecol Reprod Biol*. 2001; 96(1): 21–34.
62. Sampson JA. Peritoneal endometriosis due to the menstrual dissemination of endometrial tissue into the peritoneal cavity. *Am J Obstet Gynecol* 1927; 14:422.
63. Burney RO, Giudice LC. Pathogenesis and pathophysiology of endometriosis. *Fertil Steril* 2012; 98:511.
64. Gruenewald P. Origin of endometriosis from the mesenchyme of the celomic walls. *Am J Obstet Gynecol* 1942; 44:470.
65. Oliveira FR, Dela Cruz C, Del Puerto HL, et al. Stem cells: are they the answer to the puzzling etiology of endometriosis? *Histol Histopathol* 2012; 27:23.
66. Du H, Taylor HS. Contribution of bone marrow-derived stem cells to endometrium and endometriosis. *Stem Cells* 2007; 25:2082.
67. 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.
68. Halme J, Hammond MG, Hulka JE, et al. Retrograde menstruation in healthy women and in patients with endometriosis. *Obstet Gynecol* 1984; 64:151.
69. Marsh EE, Laufer MR. Endometriosis in premenarcheal girls who do not have an associated obstructive anomaly. *Fertil Steril* 2005; 83:758.
70. Wang G, Tokushige N, Markham R, Fraser IS. Rich innervation of deep infiltrating endometriosis. *Hum Reprod* 2009; 24:827.
71. Liang Y, Xie H, Wu J, et al. Villainous role of estrogen in macrophage-nerve interaction in endometriosis. *Reprod Biol Endocrinol* (2018) 16: 122.

72. Liang Y, Yao S. Potential role of estrogen in maintaining the imbalanced sympathetic and sensory innervation in endometriosis. *Mol Cell Endocrinol* 2016; 424:42.
73. Arnold J, Vercellino GF, Chiantera V, et al. Neuroimmunomodulatory alterations in non-lesional peritoneum close to peritoneal endometriosis. *Neuroimmunomodulation* 2013; 20:9.
74. Brawn J, Morotti M, Zondervan KT, et al. Central changes associated with chronic pelvic pain and endometriosis. *Hum Reprod Update* 2014; 20:737.
75. Haney AF, Muscato JJ, Weinberg JB. Peritoneal fluid cell populations in infertility patients. *Fertil Steril* 1981; 35:696.
76. Schenken RS, Asch RH, Williams RF, et al. Etiology of infertility in monkeys with endometriosis: luteinized unruptured follicles, luteal phase defects, pelvic adhesions, and spontaneous abortions. *Fertil Steril* 1984; 41:122.
77. Gupta S, Goldberg JM, Aziz N, et al. Pathogenic mechanisms in endometriosis-associated infertility. *Fertil Steril* 2008; 90:247.
78. Holoch KJ, Lessey BA. Endometriosis and infertility. *Clin Obstet Gynecol* 2010; 53:429.
79. Prescott J, Farland LV, Tobias DK, et al. A prospective cohort study of endometriosis and subsequent risk of infertility. *Hum Reprod* 2016; 31:1475.
80. Rahmioglu N, Nyholt DR, Morris AP, et al. Genetic variants underlying risk of endometriosis: insights from meta-analysis of eight genome-wide association and replication datasets. *Hum Reprod Update* 2014; 20:702.
81. Simpson JL, Elias S, Malinak LR, et al. JrHeritable aspects of endometriosis. I. Genetic studies. *American journal of obstetrics and gynecology*. 1980;137(3):327–331.
82. Anglesio MS, Papadopoulos N, Ayhan A, et al. Cancer-Associated Mutations in Endometriosis without Cancer. *N Engl J Med* 2017; 376:1835.
83. Ballard KD, Seaman HE, de Vries CS, et al. Can symptomatology help in the diagnosis of endometriosis? Findings from a national case-control study--Part 1. *BJOG* 2008; 115:1382.
84. Rousset P, Gregory J, Rousset-Jablonski C, et al. MR diagnosis of diaphragmatic endometriosis. *Eur Radiol* 2016; 26:3968.
85. Hwang SM, Lee CW, Lee BS, et al. Clinical features of thoracic endometriosis: A single center analysis. *Obstet Gynecol Sci* 2015; 58:223.
86. Oliveira MAP, Raymundo TS, Soares LC, et al. How to Use CA-125 More Effectively in the Diagnosis of Deep Endometriosis. *Biomed Res Int*. 2017;2017:9857196. doi: 10.1155/2017/9857196.
87. Fiala L, Bob P, Raboch J. Oncological markers CA-125, CA 19-9 and endometriosis. *Medicine (Baltimore)*. 2018 Dec;97(51):e13759. doi: 10.1097/MD.00000000000013759.
88. Hirsch M, Duffy JMN, Deguara CS, et al. Diagnostic accuracy of Cancer Antigen 125 (CA125) for endometriosis in symptomatic women: A multi-center study. *Eur J Obstet Gynecol Reprod Biol*. 2017 Mar;210:102-107. doi: 10.1016/j.ejogrb.2016.12.002.
89. Socolov R, Socolov D, Sindilar A, et al. An update on the biological markers of endometriosis. *Minerva Ginecol*. 2017 Oct;69(5):462-467. doi: 10.23736/S0026-4784.17.04046-1.
90. Liu E, Nisenblat V, Farquhar C, et al. Urinary biomarkers for the non-invasive diagnosis of endometriosis. *Cochrane Database Syst Rev* 2015; :CD012019.
91. Gupta D, Hull ML, Fraser I, et al. Endometrial biomarkers for the non-invasive diagnosis of endometriosis. *Cochrane Database Syst Rev* 2016; 4:CD012165.
92. Nisenblat V, Prentice L, Bossuyt PM, et al. Combination of the non-invasive tests for the diagnosis of endometriosis. *Cochrane Database Syst Rev* 2016; 7:CD012281.
93. Mehedintu C, Plotogea MN, Ionescu S, et al. Endometriosis still a challenge. *J Med Life*. 2014 Sep 15;7(3):349-57.
94. Reid S, Condous G. Update on the ultrasound diagnosis of deep pelvic endometriosis. *Eur J Obstet Gynecol Reprod Biol* 2017; 209:50.
95. Glanc P, Benacerraf B, Bourne T, et al. First International Consensus Report on Adnexal Masses: Management Recommendations. *J Ultrasound Med* 2017; 36:849.

96. 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.
97. Rousset P, Rousset-Jablonski C, Alifano M, et al. Thoracic endometriosis syndrome: CT and MRI features. *Clin Radiol* 2014; 69:323.
98. Hoyos LR, Johnson S, Puscheck E. Endometriosis and Imaging. *Clinical Obstetrics and Gynecology*. 2017; 60(3): 503–16.
99. Wykes CB, Clark TJ, Khan KS. Accuracy of laparoscopy in the diagnosis of endometriosis: a systematic quantitative review. *BJOG* 2004; 111:1204.
100. Stegmann BJ, Sinaii N, Liu S, et al. Using location, color, size, and depth to characterize and identify endometriosis lesions in a cohort of 133 women. *Fertil Steril* 2008; 89:1632.
101. Taylor HS, Adamson GD, Diamond MP, et al. An evidence-based approach to assessing surgical versus clinical diagnosis of symptomatic endometriosis. *Int J Gynaecol Obstet*. 2018; 142(2): 131–42.
102. Ahn SH, Singh V, Tayade C. Biomarkers in endometriosis: challenges and opportunities. *Fertil Steril* 2017;107:523–32.
103. Husby GK, Haugen RS, Moen MH. Diagnostic delay in women with pain and endometriosis. *Acta Obstet Gynecol Scand* 2003; 82:649.
104. Eskenazi B, Warner M, Bonsignore L, et al. Validation study of nonsurgical diagnosis of endometriosis. *Fertil Steril* 2001; 76:929.
105. Barcellos MB, Lasmar B, Lasmar R. Agreement between the preoperative findings and the operative diagnosis in patients with deep endometriosis. *Arch Gynecol Obstet* 2016; 293:845.
106. Sutton CJ, Pooley AS, Ewen SP, Haines P. Follow-up report on a randomized controlled trial of laser laparoscopy in the treatment of pelvic pain associated with minimal to moderate endometriosis. *Fertil Steril* 1997; 68:1070.
107. Fedele L, Bianchi S, Zanconato G, et al. Is rectovaginal endometriosis a progressive disease? *Am J Obstet Gynecol* 2004; 191:1539.
108. Ladanyi C, Boyd S, Sticco P. Postmenopausal endometriosis, where are we now? *Curr Opin Obstet Gynecol*. 2019 Aug;31(4):267-278.
109. Pisanu A, Deplano D, Angioni S, et al. Rectal perforation from endometriosis in pregnancy: case report and literature review. *World J Gastroenterol* 2010; 16:648.
110. Brosens IA, Fusi L, Brosens JJ. Endometriosis is a risk factor for spontaneous hemoperitoneum during pregnancy. *Fertil Steril* 2009; 92:1243.
111. Lier MCI, Malik RF, Ket JCF, et al. Spontaneous hemoperitoneum in pregnancy (SHiP) and endometriosis - A systematic review of the recent literature. *Eur J Obstet Gynecol Reprod Biol* 2017; 219:57.
112. Leone Roberti Maggiore U, Remorgida V, Sala P, et al. Spontaneous Uroperitoneum and Preterm Delivery in a Patient With Bladder Endometriosis. *J Minim Invasive Gynecol* 2015; 22:923.
113. Faucheron JL, Pasquier D, Voirin D. Endometriosis of the vermiform appendix as an exceptional cause of acute perforated appendicitis during pregnancy. *Colorectal Dis* 2008; 10:518.
114. Exacoustos C, Lauriola I, Lazzeri L, et al. Complications during pregnancy and delivery in women with untreated rectovaginal deep infiltrating endometriosis. *Fertil Steril*. 2016; 106(5): 1129–1135.e1.
115. Glavind MT, Forman A, Arendt LH, et al. Endometriosis and pregnancy complications: a Danish cohort study. *Fertil Steril* 2017; 107:160.
116. Bruun MR, Arendt LH, Forman A, et al. Endometriosis and adenomyosis are associated with increased risk of preterm delivery and a small-for-gestational-age child: a systematic review and meta-analysis. *Acta Obstet Gynecol Scand* 2018; 97:1073.
117. Leone Roberti Maggiore U, Ferrero S, Mangili G, et al. A systematic review on endometriosis during pregnancy: diagnosis, misdiagnosis, complications and outcomes. *Hum Reprod Update* 2016; 22:70.

118. Lalani S, Choudhry AJ, Firth B, et al. Endometriosis and adverse maternal, fetal and neonatal outcomes, a systematic review and meta-analysis. *Hum Reprod* 2018; 33:1854.
119. Hadfield RM, Lain SJ, Raynes-Greenow CH, et al. Is there an association between endometriosis and the risk of pre-eclampsia? A population based study. *Hum Reprod* 2009; 24:2348.
120. Brosens IA, De Sutter P, Hamerlynck T, et al. Endometriosis is associated with a decreased risk of pre-eclampsia. *Hum Reprod* 2007; 22:1725.
121. Matias-Guiu X, Stewart CJR. Endometriosis-associated ovarian neoplasia. *Pathology*. 2018 Feb;50(2):190-204. doi: 10.1016/j.pathol.2017.10.006.
122. Anglesio MS, Yong PJ. Endometriosis-associated Ovarian Cancers. *Clin Obstet Gynecol*. 2017 Dec;60(4):711-727. doi: 10.1097/GRF.0000000000000320.
123. Saavalainen L, Lassus H, But A, et al. A Nationwide Cohort Study on the risk of non-gynecological cancers in women with surgically verified endometriosis. *Int J Cancer* 2018; 143:2725.
124. Pearce CL, Templeman C, Rossing MA, et al. Association between endometriosis and risk of histological subtypes of ovarian cancer: a pooled analysis of case-control studies. *Lancet Oncol* 2012; 13:385.
125. Saavalainen L, Lassus H, But A, et al. Risk of Gynecologic Cancer According to the Type of Endometriosis. *Obstet Gynecol* 2018; 131:1095.
126. Grandi G, Toss A, Cortesi L, et al. The Association between Endometriomas and Ovarian Cancer: Preventive Effect of Inhibiting Ovulation and Menstruation during Reproductive Life. *Biomed Res Int* 2015; 2015:751571.
127. Matias-Guiu X, Stewart CJR. Endometriosis-associated ovarian neoplasia. *Pathology*. 2018 Feb;50(2):190-204. doi: 10.1016/j.pathol.2017.10.006.
128. Van Gorp T, Amant F, Neven P, et al. Endometriosis and the development of malignant tumours of the pelvis. A review of literature. *Best Pract Res Clin Obstet Gynaecol* 2004; 18:349.
129. Hansson GK. Inflammation, atherosclerosis, and coronary artery disease. *N Engl J Med* 2005; 352:1685.
130. Melo AS, Rosa-e-Silva JC, Rosa-e-Silva AC, et al. Unfavorable lipid profile in women with endometriosis. *Fertil Steril* 2010; 93:2433.
131. Santoro L, D'Onofrio F, Campo S, et al. Endothelial dysfunction but not increased carotid intima-media thickness in young European women with endometriosis. *Hum Reprod* 2012; 27:1320.
132. Mu F, Rich-Edwards J, Rimm EB, et al. Endometriosis and Risk of Coronary Heart Disease. *Circ Cardiovasc Qual Outcomes* 2016; 9:257.
133. Practice Committee of the American Society for Reproductive Medicine. Treatment of pelvic pain associated with endometriosis: a committee opinion. *Fertil Steril* 2014; 101:927.
134. Dunselman GA, Vermeulen N, Becker C, et al. ESHRE guideline: management of women with endometriosis. *Hum Reprod* 2014; 29:400.
135. Practice bulletin no. 114: management of endometriosis. *Obstet Gynecol* 2010; 116:223.
136. Vercellini P, Buggio L, Frattaruolo MP, et al.: Medical treatment of endometriosis-related pain. *Best Pract Res Clin Obstet Gynaecol*. 2018; 51: 68–91.
137. Sutton CJ, Pooley AS, Ewen SP, et al. Follow-up report on a randomized controlled trial of laser laparoscopy in the treatment of pelvic pain associated with minimal to moderate endometriosis. *Fertil Steril*. 1997 Dec;68(6):1070-4.
138. Hughes E, Brown J, Collins JJ, et al. Ovulation suppression for endometriosis. *Cochrane Database Syst Rev* 2007; :CD000155.
139. Pall M, Fridén BE, Brännström M. Induction of delayed follicular rupture in the human by the selective COX-2 inhibitor rofecoxib: a randomized double-blind study. *Hum Reprod* 2001; 16:1323.
140. Duffy DM, VandeVoort CA. Maturation and fertilization of nonhuman primate oocytes are compromised by oral administration of a cyclooxygenase-2 inhibitor. *Fertil Steril* 2011; 95:1256.

141. Bata MS, Al-Ramahi M, Salhab AS, et al. Delay of ovulation by meloxicam in healthy cycling volunteers: A placebo-controlled, double-blind, crossover study. *J Clin Pharmacol* 2006; 46:925.
142. Macer ML, Taylor HS. Endometriosis and infertility: a review of the pathogenesis and treatment of endometriosis-associated infertility. *Obstet Gynecol Clin North Am.* 2012 Dec;39(4):535-49. doi: 10.1016/j.ogc.2012.10.002.
143. Chapron C, Vercellini P, Barakat H, et al. Management of ovarian endometriomas. *Hum Reprod Update* 2002; 8:591.
144. Alborzi S, Zarei A, Alborzi S, et al. Management of ovarian endometrioma. *Clin Obstet Gynecol* 2006; 49:480.
145. Yoshida S, Harada T. Laparoscopic surgery for the management of ovarian endometrioma. *Gynecol Obstet Invest.* 2002;54:24–27.
146. Benaglia L, Somigliana E, Vighi V, et al. Rate of severe ovarian damage following surgery for endometriomas. *Hum Reprod* 2010; 25:678.
147. Raffi F, Metwally M, Amer S. The impact of excision of ovarian endometrioma on ovarian reserve: a systematic review and meta-analysis. *J Clin Endocrinol Metab* 2012; 97:3146.
148. Somigliana E. Ovarian reserve, endometriomas, and surgery: Research must go on. *Fertil Steril.* 2018; 110(5): 856–7.
149. Muzii L, Miller CE. The Singer, Not the Song. *J Minim Invasive Gynecol.* 2011; 18(5): 666–7.
150. Zhu X, Hamilton KD, McNicol ED. Acupuncture for pain in endometriosis. *Cochrane Database Syst Rev* 2011; :CD007864.
151. Xiang D, Situ Y, Liang X, et al. Ear acupuncture therapy for 37 cases of dysmenorrhea due to endometriosis. *J Tradit Chin Med* 2002; 22:282.
152. Parazzini F, Chiaffarino F, Surace M, et al. Selected food intake and risk of endometriosis. *Hum Reprod* 2004; 19:1755.
153. Ricci AG, Olivares CN, Bilotas MA, et al. Natural therapies assessment for the treatment of endometriosis. *Hum Reprod.* 2013; 28(1): 178–88.