



## ENDOMETRIOSIS OF THE CECUM AND APPENDIX: REVIEW OF LITERATURE.

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### LITERATURE REVIEW

#### ABSTRACT

Endometriosis is a benign, chronic, inflammatory and estrogen dependent pathology in which there is the implantation of functional extrauterine endometrial tissue. Pelvic and abdominal endometriosis are the most frequent presentations and, in these forms, ectopic endometrial implantation affects the lesser pelvis, uterosacral ligaments, ovaries, uterine tubes, urinary and gastrointestinal tracts. Some symptoms such as altered bowel habits, pelvic pain, infertility and bleeding during bowel movements are present. In this work the focus is on the manifestations of endometriosis in the appendix and cecum. The use of imaging tests, such as transrectal and transvaginal ultrasonography, magnetic resonance imaging and colonoscopy are important tools used, however, the gold standard is videolaparoscopy with biopsy to confirm the anatomopathological findings. The surgical strategy is related to the degree of impairment and must take into account the eradication of the disease together with the preservation of fertility. Therefore, the importance of evaluating and treating all areas that endometriosis affects is clear, with a multidisciplinary approach by general surgeons and gynecologists, in order to investigate, diagnose and correctly address the disease in an organized and correct way.

**KEY WORDS:** Endometriosis of the cecum, Endometriosis of the apêndix, Endometriosis.

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## INTRODUCTION

Endometriosis is defined as a chronic and inflammatory disease that occurs during the reproductive period of a woman's life, characterized by the presence of endometrial tissue outside the uterine cavity and its most common clinical presentations include infertility, pelvic pain, dysmenorrhea and dyspareunia. . (NOGUEIRA, et al., 2018) <sup>1</sup>. The literature points out that there are different theories that aim to explain the causes of endometriosis, however, its etiopathogenesis is not yet well established (CONCEIÇÃO, et al. 2019) <sup>2</sup>. Since its forms of presentation, involvement and evolution are quite heterogeneous, it is a multifactorial disease with several environmental, genetic, epigenetic, hormonal, immunological and anatomical predisposing factors, associated in a complex way (MORETTO, et al., 2021) <sup>3</sup>.

Endometriosis can affect several locations, including the appendix, cecum and intestine. According to Madrouk et al. (2019) <sup>9</sup>, appendicular endometriosis is observed in 2.6% of patients with endometriosis treated surgically. This percentage may increase in patients with more severe diseases or with lesions in multiple sites (PARRA et al., 2020)<sup>22</sup>.

Endometriosis of the appendix is a rare condition reported in less than 1% of women who are diagnosed after undergoing an appendectomy for suspected appendix or other pathology. Nonspecific appendix enlargement leading to chronic abdominal pain can arise from a variety of possible etiologies and should raise suspicion of app tumors or recurrent/chronic appendicitis. Despite being an extremely rare entity, especially when there is no associated endometriotic lesion, appendicular endometriosis should be considered as a differential diagnosis in some cases.

The diagnosis of this pathology is based on the finding of endometrial glands and stroma in the appendix, and may present as acute appendicitis or appendicular/periappendicular mass on imaging (FELDHAUS, et al., 2020) <sup>4</sup>. The pain present in patients affected by this disease can align with the menstrual cycle and the hemoperitoneum can be found during the intraoperative time, and appendectomy, ileocectomy or right hemicolectomy can be performed as a form of treatment if there is a suspicion of malignancy (FELDHAUS, et al., 2020) <sup>4</sup>.

Although the clinical and imaging presentations vary, the definitive diagnosis and treatment are usually obtained through an appendectomy, whose importance is even greater when appendicular neoplasia is suspected (FREITAS, et al., 2019) <sup>5</sup>. The definitive diagnosis of endometriosis is made through laparotomy or laparoscopy and its treatment can be both drug and surgical, or the association between them. However, there is a gap in the literature on which treatment is most appropriate, and therefore, its risks and benefits for each patient should be evaluated (NOGUEIRA, et al., 2018) <sup>6</sup>.

Considering that endometriosis is a pathology of high social, economic and psychological impact on the lives of patients, the present study aims to analyze through

scientific evidence the diagnosis and management of patients with endometriosis of the cecum and appendix.

## **METHODOLOGY**

This is a literature review on endometriosis of the cecum and appendix elaborated through consultations in the main scientific databases. The databases used for the bibliographic research were: Scientific Electronic Library Online (SciELO); National Center for Biotechnology Information (PubMed/MEDLINE) and Virtual Health Library (VHL). These are databases that concentrate publications of excellence focused on the health area. The selection of articles published in the databases comprised between the years 2006 to 2021, among them the 8 authors involved opted for 22 articles based on the veracity of the reports, on the correspondence between the clinical parameters that highlight the presence of endometriosis foci and the locations of the lesions in the gastrointestinal tract (GIT) segments in question and the importance of intraoperative assessments of the appendix, excluded another 7 based on data updates and complexity. Descriptors recognized by the DECs were used: “Endometriosis”, “Cecum Diseases” and “Appendix”.

## **DISCUSSION**

Endometriosis can present in distant locations, such as the intestine, appendix and cecum. Appendicular endometriosis (AS) presents with symptoms such as nausea, vomiting, sudden pain in the right side of the abdomen, fever, intussusception or lower gastrointestinal bleeding. Some factors associated with this pathology are the presence of ileocecal and bladder endometriosis, the presence of endometrioma on the right and adenomyosis. Endometriosis of the appendix is diagnosed histologically after appendectomy. Involvement of the appendix with endometriosis is a histological diagnosis after appendectomy. Its prevalence varies in the literature, but according to the study by Mabrouk et al. (2019), has a prevalence of 2.6% among patients with endometriosis treated surgically (MABROUK, 2019) <sup>15</sup>. This statistic shows the importance of intraoperative assessments of the appendix in patients with endometriosis, and if nodulation is present, appendectomy should be considered, seeking the differential diagnosis with neuroendocrine tumors (PARRA et al., 2020) <sup>22</sup>.

Endometriosis can be a precursor to cancer, and mutations that are present in endometriosis-associated cancers can be found in adjacent endometriosis lesions. When endometriosis of the appendix is seen, other sites may commonly be affected, such as the bladder and rectosigmoid. Therefore, the appendix must be carefully evaluated and, in some cases, appendectomy performed, which becomes mandatory when nodules, thickening or any change suggestive of appendix disease are found during surgery for deep endometriosis, so that it is not overlooked. a neuroendocrine tumor (MOTA et al., 2015) <sup>17</sup>.

Furthermore, coincidental appendectomy does not increase operative time, morbidity or mortality (MOULDER et al., 2017) <sup>19</sup>. Neuroendocrine tumors are the most

common neoplasms of the appendix (MORRIS *et al.*, 2018) and are detected in 0.16-2.3% of all appendectomies (ABRAO *et al.*, 2020) <sup>18</sup>. Moreover, Gustofson states that patients with right lower quadrant pelvic pain should be informed about the possibility of appendectomy, even with the low prevalence of appendix disease (GUSTOFSON, 2006). The rate of distant metastasis is approximately 1% and usually when the tumor is larger than 2 cm (PARRA *et al.*, 2020) <sup>22</sup>.

Venturini *et al.* (2018) <sup>10</sup> carried out a review of the literature and a case report of a patient with endometriosis in the cecal appendix and right colon, which was confirmed through anatomopathological examination. In this study, it was observed that 10% of patients who have endometriosis can manifest the gastrointestinal form and from this group 19% have endometriosis in the cecal appendix region and 1% in the cecum region.

Added to this, they also discussed that intestinal endometriosis has symptoms such as altered bowel habits, pelvic pain, infertility and bleeding during bowel movements. As such symptomatology is present in other clinical pictures, there is a difficulty and delay in the diagnosis of such pathology. The use of imaging tests such as transrectal and transvaginal ultrasound, magnetic resonance imaging and colonoscopy are important tools used, however, the gold standard is videolaparoscopy with biopsy to confirm the anatomopathological findings (VENTURINI *et al.* 2018) <sup>10</sup>.

According to Saleem *et al.* (2011) <sup>11</sup>, endometriosis in the appendix region is a pathology that usually occurs in women of childbearing age, and may have different clinical manifestations, which may mimic acute appendicitis or chronic pelvic pain. Surgical management can range from appendectomy to right hemicolectomy.

Feldhaus (2020) <sup>4</sup> described a case report of laparoscopic ileocecectomy with pathological confirmation of endometriosis and appendix and cecum. In this article, the need to consider the possibility of considering appendiceal and cecal endometriosis in women of childbearing age with a mass in this location was emphasized in this article. The diagnosis of appendicular endometriosis is of a postoperative and histological nature, with endometrial glands and stroma being found in the appendicular tissue sample.

In addition, in the clinical picture, there are acute episodes of pain, which may coincide with the patient's menstrual cycle, and hemoperitoneum may be an intraoperative finding. Acute pain in the right iliac fossa region is often assumed to be appendicitis, with appendix endometriosis reported in less than 1% of women who underwent appendectomy for suspected appendicitis or other pathology.

According to Law *et al.* (2020) <sup>12</sup> state that ultrasound and magnetic resonance imaging are imaging instruments that can assist in the investigation of intestinal endometriosis. However, the laparoscopic approach is the gold standard. In addition, they warn about the limitation of colonoscopy, since mucosal involvement is not common. The surgical strategy is related to the degree of impairment and should take into account the eradication of the disease in conjunction with the preservation of fertility.

In addition, they reported the possibilities of surgical decisions according to size. In small lesions, laser ablation can be performed. Single infiltrating nodules smaller than 30



mm in size and occupying less than one-third of the circumference of the bowel can be performed with discoid or full-thickness excision of the anterior wall. Diseases that are more extensive or infiltrative must undergo formal resection and anastomosis (LAW *et al.* 2020) <sup>12</sup>.

Endometriosis is an estrogen-dependent pathology, therefore, usually more frequent in women of reproductive age (GIANNELLA L, *et al.*, 2021) <sup>7</sup>, however, Sooklal *et al.* (2021) <sup>13</sup> emphasize the importance of also considering the possibility of diagnosing endometriosis of the appendix in postmenopausal women, even without the presence of signs and symptoms characteristic of this pathology and absence of known extrauterine endometrial ectopic tissue.

In addition to the above, Villaescusa and researchers (2021) <sup>14</sup> conducted a study involving patients with histological confirmation of endometriosis.

## CONCLUSION

In short, although the pathogenesis of endometriosis is still not fully understood, through the analysis of the cases studied and the literature reviews viewed during this work, we could observe that endometriosis has a high social, economic and psychological impact on the lives of patients. of this pathology. In this bias, through the present study on endometriosis of the appendix and cecum, it is evident the need for further studies on this subject, as it is a rare disease and difficult to diagnose due to its varied clinical conditions.

Therefore, the importance of evaluating and treating all areas that endometriosis affects is clear, with a multidisciplinary approach by general surgeons and gynecologists, especially the isolated involvement of the appendix in order to investigate, diagnose and correctly address the disease in a correct and organized manner.

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The Authors declares that there is no conflict of interest

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