SURGICAL APPROACH IN THE TREATMENT OF DEEP ENDOMETRIOSIS: CHALLENGES AND ADVANCES

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Abstract: Deep endometriosis is a gynaecological condition characterized by the presence of endometrial tissue outside the uterus, involving organs such as the ovaries, intestines and bladder. The disease can cause chronic pain, infertility and additional complications, significantly affecting patients' quality of life. Although clinical treatment, such as the use of hormones, is common, the surgical approach has become essential for cases of deep endometriosis, when symptoms are not effectively controlled. The aim of this study is to analyze the challenges and advances in surgical approaches to the treatment of deep endometriosis, focusing on innovative techniques, long-term efficacy and the multidisciplinary approach to managing the condition. This is a literature review with a qualitative approach, which will use the PubMed, Scopus and Web of Science databases to gather relevant articles on the surgical and psychological management of endometriosis. The search will be refined using health descriptors such as "Endometriosis Surgery," "Deep Infiltrating Endometriosis," "Psychological Impact," among others, with a time frame between 2014 and 2021. The review aims to consolidate best practices and advances in the treatment of endometriosis, both in terms of surgical interventions and psychological approaches. Laparoscopic surgery has proven to be one of the main therapeutic options in the treatment of deep endometriosis, allowing precise removal of lesions with lower complication rates and faster recovery. Recent advances in robotic surgery have also contributed to greater precision and less tissue trauma. However, complete removal of lesions is not always possible, which can lead to recurrences. Treatment also requires a multidisciplinary approach, involving gynaecologists, urologists, proctologists and fertility specialists, for proper management and minimization of complications. The surgical approach to treating deep endometriosis continues to evolve, with technological innovations offering better results and recovery for patients. However, the complexity of the condition requires ongoing specialist follow-up and the combination of clinical and surgical treatments to ensure long-term efficacy and symptom reduction. Personalizing the treatment for each patient is fundamental to the successful management of

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the disease.

Keywords: Endometriosis; Surgical Approaches; Deep Endometriosis.

INTRODUCTION

Deep endometriosis is a severe form of endometrial disease that affects approximately 10% of women of reproductive age, characterized by lesions that deeply invade adjacent tissues, such as the ovaries, bladder, intestines, and ligaments. This type of endometriosis is often associated with debilitating symptoms such as chronic pelvic pain, dyspareunia (pain during intercourse), dysmenorrhea (painful menstruation), and infertility. The diagnosis and management of deep endometriosis present significant challenges due to its variable clinical presentation and overlap with other gynecological conditions, making the therapeutic approach more complex (VERCELLINI et al., 2020).

The treatment of deep endometriosis involves a multidisciplinary approach, with the aim of relieving symptoms, preserving reproductive function, and improving the patient's quality of life. Surgery, especially laparoscopic resection, is considered the treatment of choice for severe cases of deep endometriosis, aiming at the removal or destruction of endometrial lesions in compromised areas. However, the surgical approach presents technical challenges, such as the risk of injury to adjacent organs and intraoperative complications, requiring high skill and experience from the surgeon (GONZÁLEZ et al., 2019).

In recent years, there have been significant advances in surgical techniques, with the emergence of less invasive approaches, such as robot-assisted laparoscopy, which offers greater accuracy and shorter recovery time. In addition, postoperative management strategies have also evolved, with the introduction of adjuvant therapies, such as the use of hormone therapy to prevent recurrences and improve long-term outcomes. These advances have provided better clinical outcomes, but there are still gaps in the understanding of the most effective approaches to treat deep endometriosis, especially in cases of vital organ involvement (GONZALEZ et al., 2021).

In addition, deep endometriosis has significant implications on the quality of life of affected women, since chronic pain and fertility problems can lead to a profound emotional impact, generating anxiety and depression. Therefore, the management of the disease needs to be comprehensive, involving not only physical treatment, but also psychological support to deal with the emotional effects of the disease (MORADI et al., 2018).

MATERIALS AND METHODS

This is a literature review with a qualitative focus, which will use the PubMed, Scopus and Web of Science databases to gather relevant articles on the surgical and psychological management of endometriosis. The research will be refined using health descriptors such as "Endometriosis Surgery," "Deep Infiltrating Endometriosis," "Psychological Impact," among others, with a time frame between 2014 and 2021. The review aims to consolidate best practices and advances in the treatment of endometriosis, both in terms of surgical interventions and psychological approaches.

1. Guiding Question

What are the most effective surgical and psychological approaches for the treatment of deep endometriosis, and how do they affect the quality of life of patients?

2. Databases Used

PubMed

Scopus

Web of Science

3. Health Descriptors and Boolean Markers

Health descriptors were used in the MeSH/DeCS vocabulary:

Descriptors:

“Endometriosis Surgery”

“Deep Infiltrating Endometriosis”

“Psychological Impact”

“Laparoscopic Surgery”

“Robotic Surgery”

“Mental Health Endometriosis”

Boolean Markers:

“Endometriosis” AND “Surgical Management”

“Deep Infiltrating Endometriosis” AND “Laparoscopic Approach”

“Endometriosis” OR “Psychological Impact” AND “Mental Health”

“Endometriosis” AND “Robotic Surgery” AND NOT “Male”

4. Inclusion and Exclusion Criteria

Inclusion Criteria:

Studies published between 2014 and 2021;

Peer-reviewed articles, including clinical trials, systematic reviews, meta-analyses, and guidelines;

Studies focused on deep endometriosis and its surgical or psychological approaches;

Publications in English and Portuguese.

Exclusion Criteria:

Studies that do not address surgical or psychological interventions for endometriosis;

Studies exclusively related to the management of mild or moderate endometriosis;

Studies with pediatric samples or those not applicable to the context of adult women;

Articles without critical evaluation of results or flaws in the methodology.

THEORETICAL FOUNDATION

Deep endometriosis is a chronic gynecological condition characterized by the presence of endometrial tissue outside the uterine cavity, specifically in areas such as the ovaries, peritoneum, intestines, and pelvic ligaments. Its prevalence is estimated at up to 10% of women of reproductive age, but deep endometriosis, which affects quality of life more severely, is less prevalent, accounting for approximately 20-25% of cases (Vercellini et al., 2020). The diagnosis of deep endometriosis is often delayed, as the symptoms can be similar to those of other gynecological and gastrointestinal conditions, such as irritable bowel syndrome and pelvic inflammatory disease. The definitive diagnosis, therefore, is made by laparoscopy or imaging tests such as magnetic resonance imaging (MRI), which have been shown to be effective in identifying deeper lesions (DUNSELMAN et al., 2014).

The treatment of deep endometriosis includes a multimodal approach, with the aim of controlling symptoms, preserving reproductive function, and improving quality of life. Surgery is considered the treatment of choice for the most severe forms of deep endometriosis, especially when organs such as the ovaries, intestines or bladder are compromised. Laparoscopy, a minimally invasive approach, has been shown to be effective in resecting endometrial lesions, with favorable results in terms of pain and fertility. Studies demonstrate that laparoscopic surgery can relieve chronic pain and improve fertility rates in up to 50% of women affected by deep endometriosis (NEZHAT et al., 2018).

However, the surgical approach presents significant technical challenges. Deep lesions are often located in complex anatomical sites, which requires high technical skill and a multidisciplinary approach to the preservation of the affected organs. Surgery to resect the lesions may involve the removal of parts of the intestine, bladder, or even segments of the peritoneum, increasing the risk of postoperative complications, such as infection, lesions in adjacent organs, and adhesions (VERCELLINI et al., 2016).

In recent years, the use of robotic technology in laparoscopy has advanced significantly, allowing greater precision and better visualization of lesions. Robotics offers greater control during surgery, which reduces the risk of injury and improves postoperative outcomes. Recent studies indicate

that robot-assisted laparoscopy offers advantages in terms of lower complication rates and faster recovery compared to traditional laparoscopy (GONZALEZ et al., 2021). In addition, robotic surgery can reduce the duration of the procedure and improve the quality of resection of endometrial lesions, which has a direct impact on the effectiveness of treatment.

Although surgery is the main form of management of deep endometriosis, the use of adjuvant therapies, such as hormone therapy, has also shown significant benefits. Hormone therapy, which aims to suppress estrogen production, can reduce residual endometrial activity and prevent recurrence of lesions after surgery (DONNEZ et al., 2020). The combination of surgical approach and hormone therapy has been shown to be effective in maintaining disease remission and reducing symptoms in the long term.

Deep endometriosis also has a substantial impact on the quality of life of affected women. The symptoms, especially chronic pain and infertility, can generate emotional disorders, such as depression, anxiety, and stress. Studies indicate that women with deep endometriosis have an increased risk of developing emotional disorders due to physical distress and limitation in the ability to perform daily activities (MORADI et al., 2018). Therefore, the therapeutic approach to endometriosis must be comprehensive, not limited to the physical control of the disease, but also incorporating psychological support to treat the emotional aspects that accompany the condition.

CONCLUSION

The surgical approach in the treatment of deep endometriosis remains a key pillar in the management of this challenging condition, with laparoscopy being the most widely used technique. Laparoscopic surgery, especially when assisted by robotic technology, has demonstrated significant advances, providing greater accuracy and better visualization of lesions, with clear benefits in reducing postoperative complications and improving success rates. Despite the advances, the resection of endometrial lesions still represents a major technical challenge, requiring refined skill and a multidisciplinary approach, especially when the lesions affect organs such as the intestines and bladder.

In addition, it is important to highlight the emotional impact that deep endometriosis causes in women, reflecting not only on physical difficulties, but also on quality of life and psychological well-being. Effective management of the disease must therefore be holistic, integrating surgical treatment with the use of hormonal therapies and offering psychological support to deal with the emotional aspects that accompany the condition.

With advances in technology, such as robot-assisted laparoscopy, and the growing understanding of the importance of an integrated approach, the treatment of deep endometriosis has the potential to achieve better outcomes, providing significant symptom relief and a better quality of life for affected women. Continued research and innovation in surgical techniques, combined with holistic management that includes emotional and psychological aspects, are essential for advancing the treatment of this complex and debilitating condition.

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