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Endometrioma

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We use this protocol and it's working

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Keywords: endometriosis, endometrioma, anti-mullerian hormone, laparoscopic cystectomy, CO2 laser vaporization, plasma energy ablation, sclerotherapy, GnRH agonist treatment, assisted reproduction treatment, surgical intervention for endometrioma, endometrioma, endometriosis, endometrioma background, endometrial tissue, presence of endometrial tissue, infertility parameter, uterus, laparoscopic cystectomy, ovarian reserve, correlation with infertility parameter, fertility, information on surgical intervention, pregnancy rate, surgical intervention

Abstract

Background:

Endometriosis is characterized by the presence of endometrial tissue outside the uterus. Beyond medical treatment, surgical intervention is also a viable consideration. However, current guidelines do not clearly indicate whether laparoscopic cystectomy, ablative methods (CO₂ laser vaporization, plasma energy), or sclerotherapy is the preferred option. Methods: We conducted searches in two databases (PubMed, Europe PMC) to retrieve articles containing the keywords 'surgical intervention for Endometrioma, ovarian reserve, pregnancy rates, fertility', published between January 1, 2000, and December 31, 2023. We will include articles presenting information on surgical intervention for endometrioma and its correlation with infertility parameters. Articles describing conservative treatment will be excluded. Data will be extracted by two authors using predefined criteria.

Image Attribution

One figure with flow diagram including studies' selection.



Guidelines

According to PRISMA 2020 checklist.

TITLE

The report is identified as a systematic review.

ABSTRACT

This research is written according to PRISMA 2020 checklist for Abstracts.

Title: The report is identified as a systematic review.

Background: An explicit statement of the main objective the review addresses is provided.

Methods: The inclusion and exclusion criteria for the review are specified. The information sources (e.g. databases, registers) used to identify studies and the date when each was last searched are specified. The methods used to assess risk of bias in the included studies are specified.

INTRODUCTION

The rationale for the review is described in the context of existing knowledge. An explicit statement of the objective the review addresses is provided.

Materials

The conduct of this systematic review will adhere to the guidelines set by the Preferred Reporting Items for Reviews and Meta-Analyses (PRISMA) Statement.

Data sources and Search Strategy

Search will be conducted across two databases—PubMed and Europe PMC—to collect articles containing the keywords ‘surgical intervention for endometrioma, ovarian reserve, pregnancy rates, fertility’ published between January 1, 2000, and October 30, 2023.

Eligibility Criteria for Articles of Inclusion

The articles will be limited to those written in English and only full research articles will be included. Abstracts presented in scientific meetings will be excluded as well as review articles. Only articles presenting information about surgical intervention for endometrioma and their correlation with infertility parameters will be included. Any articles describing conservative treatment for endometrioma will be also excluded. To avoid bias, articles that refer to the combined treatment of endometrioma will be also considered.

Data Extraction

Specific data will be extracted from each publication in duplicate, including publication date, authorship, studied population, methodologies employed, criteria for inclusion or exclusion (I/E), sample type, and primary outcome measures.

Safety warnings

 None to declare.

Ethics statement

Not applicable.

Introduction

1 Introduction

Endometriosis, growing outside the uterus, takes various forms, including peritoneal lesions, ovarian cysts (endometrioma), deep-seated variants, and extrapelvic involvement. The retrograde menstruation hypothesis suggested backward movement of endometrial tissue through fallopian tubes, settling in the pelvis, causing inflammation and adhesions. Current research explores genetic and epigenetic origins, focusing on intracellular aromatase activity. This updated perspective investigates genetics, gene expression, and cellular activity, particularly aromatase. Its manifestation includes not only pain, but disrupts also everyday life, having negative impact to infertility. Despite affecting 6-10% of women in their reproductive years, 50% of those seeking fertility treatment hide endometriosis lesions. Statistics suggest that approximately 17-44% of women diagnosed with endometriosis will experience an endometrioma, the most prevalent form of endometriosis manifestation. These lesions, colloquially known as "chocolate cysts," owe their name to the dark brown fluid they contain. Beyond their appearance, endometriomas signal a more severe state of the disease in individuals with endometriosis. Research on endometrioma's effect on ovarian reserve, specifically concerning serum anti-Müllerian hormone (AMH) levels, has conflicting findings. Some studies indicate a decrease in AMH levels among women with endometriomas, while others find no significant differences compared to control groups. To reach a conclusive understanding, more extensive and prolonged investigations are essential. Surgical interventions, notably excision of the cyst's capsule (cystectomy), show a potential to improve post-operative pregnancy rates compared to drainage and ablative methods. Yet, the delicate ovarian tissue and follicles face possible harm from surgical excision. Fears of ovarian

failure after cystectomy have led healthcare providers to embrace ablative approaches. In this approach, rather than entirely removing it, the "pseudo-capsule" undergoes ablation using energy sources with limited thermal dispersion. A new approach, the 'one step' or 'three step' laser vaporization, employing CO2 laser technology, Looks as a promising option by minimizing energy usage and consequently decreasing potential damage. It offers hope in preserving fertility while effectively managing endometrioma. Another alternative is sclerotherapy, aiming to eliminate the pseudocapsule of an endometrioma by introducing alcoholic substances into it. This method is regarded as a cost-effective and safe way to protect healthy ovarian tissue. The procedure involves injecting a sclerosing substance directly into the cyst, followed by rinsing or retaining it. Hydrosoluble dehydrating antiseptic fluids can alter the proteins in microorganism envelopes and dissolve the lipids of their capsules. Ethanol is often chosen for its superior track record in managing renal and hepatic cysts.

Material and methods

- 2 The conduct of this systematic review will adhere to the guidelines set by the Preferred Reporting Items for Reviews and Meta-Analyses (PRISMA) Statement.

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avoid bias, articles that refer to the combined treatment of endometrioma will be also considered.

Data Extraction

Specific data will be extracted from each publication in duplicate, including publication date, authorship, studied population, methodologies employed, criteria for inclusion or exclusion (I/E), sample type, and primary outcome measures.

Results

- 3 Results will be presented in a standardized fashion and the publication and author data, demographics, metrics, and key findings of the included studies will be tabulated to optimize readability.

Discussion

- 4 A critical appraisal of the included studies will be undertaken.

Conclusion

- 5 In this section, we will recapitulate the key findings of our research.

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