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INFERTILITY AND ENDOMETRIOID OVARIAN CYSTS: AMBULATORY APPROACHES TO ENHANCE PREGNANCY POTENTIAL.

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Annotation: Infertility is one of the pressing problems of the 21st century, affecting more than 15% of couples of reproductive age. Endometrioid ovarian cysts (EOCs) are a common manifestation of endometriosis and one of the main causes of infertility. EOCs not only impair ovarian function but also create a general inflammatory background, hindering the onset of pregnancy. This article provides information on modern aspects of infertility associated with EOCs, new methods of diagnosis and treatment, as well as innovative approaches aimed at increasing the chance of pregnancy.

Keywords: infertility, pregnancy, outpatient treatment, inflammation, ovarian reserve.

Introduction. Mechanisms of Endometrioid Ovarian Cysts' Impact on Infertility.

EOCs affect infertility in several ways:

1. Decreased Ovarian Reserve: In women with EOCs, the ovarian reserve (number of antral follicles) may be reduced compared to healthy women. Surgical removal of the cyst, especially in bilateral cysts, can lead to the loss of ovarian tissue and further reduce the ovarian reserve.

2. Impaired Oocyte Quality: EOCs affect the ovarian microenvironment, increasing oxidative stress and increasing the production of inflammatory cytokines (e.g., IL-6, IL-8, TNF-α). These factors can impair the quality of oocytes and reduce their fertilization ability.

3. Implantation Failure: In endometriosis, inflammatory processes are enhanced in the inner lining of the uterus (endometrium), creating an unfavorable environment for implantation. In women with EOCs, the receptivity of the uterine lining (ability to accept an embryo) may be reduced, which hinders the onset of pregnancy.

4. Inflammatory Reactions: EOCs enhance inflammatory reactions, which can lead to the formation of adhesions in the abdominal cavity. Adhesions can disrupt the patency of the fallopian tubes and hinder the movement of oocytes.

Literature review and Research methodology. Ambulatory Treatment Methods.

The main goal of treating infertility associated with EOCs is to increase the chance of pregnancy. Ambulatory treatment methods include:

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1. Expectant Management: If the cyst is small (less than 4 cm) and the patient has no symptoms, expectant management may be used. In this case, the patient's condition is regularly monitored by ultrasound.

2. Medical Treatment: Medications are aimed at reducing the size of EOCs and suppressing inflammation. Medications used:

- Nonsteroidal Anti-Inflammatory Drugs (NSAIDs): Used to reduce pain and suppress inflammation.
- Oral Contraceptives (OCs): Temporarily stop ovarian activity, slowing cyst growth.
- Gonadotropin-Releasing Hormone Analogs (GnRH-a): Completely stop ovarian activity, leading to atrophy of endometriotic lesions.
- Aromatase Inhibitors: Reduce estrogen production and stop the growth of endometriotic lesions.

3. Ovarian Cyst Aspiration: Suctioning fluid from inside the cyst with a special needle under ultrasound guidance. This method reduces the size of the cyst, but the risk of cyst recurrence is high.

4. In Vitro Fertilization (IVF): If the above methods are ineffective, IVF may be used. During IVF treatment, eggs are removed from the ovaries and fertilized in a laboratory. Then, the resulting embryo is placed in the uterus.

Discussion and Results. Novel Approaches.

In recent years, new approaches have been developed in the treatment of infertility associated with EOCs:

1. Minimally Invasive Surgery (Laparoscopy): Laparoscopy is the most effective method for removing EOCs. Due to its minimally invasive nature, the recovery period after surgery is short, and minimal damage is done to the ovarian reserve.

2. Ovarian Tissue Preservation: If a woman plans to become pregnant in the future, it is important to preserve ovarian tissue during surgery. Ovarian tissue can be cryopreserved (frozen) and transplanted back in the future.

3. Adjuvant Therapy: Medications (e.g., dienogest) are used after surgery to reduce inflammation and prevent recurrence of endometriosis.

4. Nutraceuticals and Antioxidants: Some studies show that antioxidants (e.g., vitamin E, vitamin C, selenium) and other nutraceuticals (e.g., resveratrol, curcumin) can help improve oocyte quality and reduce inflammation.

5. Integrative Medicine: Integrative medicine methods such as acupuncture, yoga, and meditation can help reduce stress and improve reproductive health.

Conclusion. Endometrioid ovarian cysts are a significant cause of infertility. Various ambulatory methods are used to treat infertility associated with EOCs, including expectant

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management, medical treatment, cyst aspiration, and IVF. In recent years, new approaches such as minimally invasive surgery, ovarian tissue preservation, adjuvant therapy, nutraceuticals, and integrative medicine have been developed. The physician should choose the most appropriate treatment method, taking into account the individual condition of the patient. A comprehensive approach is essential in treating infertility associated with EOCs to increase the chance of pregnancy.

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