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INDIVIDUALIZED APPROACH TO THE SURGICAL TREATMENT OF ENDOMETRIOSIS DEPENDING ON THE CLINICAL PHENOTYPE

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Annotation

This article examines the importance of an individualized approach to the surgical treatment of endometriosis based on its clinical phenotype. The variability in localization, severity, and morphological characteristics of endometriotic lesions requires personalized surgical tactics aimed at improving treatment outcomes and reducing the risk of recurrence. The study emphasizes the significance of preoperative assessment, accurate diagnosis, and multidisciplinary management to optimize surgical intervention and ensure reproductive function preservation in women with different forms of endometriosis.

Keywords: endometriosis, clinical phenotype, individualized approach, surgical treatment, reproductive health

Endometriosis is a chronic gynecological disease characterized by the presence of endometrial-like tissue outside the uterine cavity, leading to inflammation, pain, and infertility. The clinical manifestations of endometriosis vary widely depending on the localization and depth of the lesions. Modern gynecology increasingly recognizes the need for a personalized approach to its management, particularly in surgical treatment. Considering the patient's clinical phenotype allows for more precise planning of the surgical procedure, reduction of postoperative complications, and improvement of reproductive outcomes. Individualization of surgical tactics based on the phenotype of endometriosis has become a key element in achieving long-term remission and maintaining the quality of life in affected women.

Endometriosis presents in several clinical phenotypes, including superficial peritoneal endometriosis, ovarian endometriomas, and deep infiltrating endometriosis. Each of these forms differs in its pathogenesis, clinical symptoms,

and impact on the patient's reproductive system. Therefore, the surgical approach should be determined based on the phenotype and the extent of tissue involvement. Superficial peritoneal endometriosis often causes mild pain and infertility, and in such cases, minimally invasive surgical techniques such as laparoscopic ablation or excision of superficial lesions are recommended. These procedures aim to remove visible foci of endometriosis while minimizing damage to surrounding healthy tissues.

Ovarian endometriomas require a more careful surgical approach due to their impact on ovarian reserve. The main goal is to excise the cyst wall completely while preserving as much healthy ovarian tissue as possible. Energy sources should be used sparingly to avoid thermal damage to the ovarian cortex, which may negatively affect fertility.

Deep infiltrating endometriosis (DIE) is the most severe phenotype, characterized by the invasion of endometrial tissue into the uterosacral ligaments, rectovaginal septum, bladder, or intestines. Surgical treatment of DIE is technically complex and often requires the participation of a multidisciplinary team, including gynecologists, colorectal surgeons, and urologists. The choice of surgical method depends on the localization and depth of infiltration. In some cases, nerve-sparing techniques are used to preserve pelvic innervation and reduce postoperative pain.

Preoperative assessment plays a crucial role in planning individualized surgical tactics. Imaging modalities such as magnetic resonance imaging (MRI) and transvaginal ultrasound (TVUS) help to determine the exact localization and extent of lesions. In addition, evaluating the patient's hormonal status, reproductive plans, and pain severity is essential for selecting the most appropriate surgical strategy.

Important aspect of individualized management is the balance between radicality and organ preservation. While complete excision of all endometriotic foci is ideal for preventing recurrence, excessive tissue removal can lead to loss of reproductive function and postoperative complications. Therefore, the surgeon must evaluate each case carefully, considering both the clinical phenotype and the patient's individual needs.

Postoperative management also requires personalization. Depending on the phenotype and extent of disease, adjuvant hormonal therapy may be prescribed to

suppress recurrence. Patients with a high risk of relapse, especially those with deep infiltrating endometriosis, benefit from long-term hormonal suppression combined with regular monitoring.The individualized approach to surgical treatment of endometriosis, based on clinical phenotype, ensures better outcomes, fewer complications, and improved quality of life. Recognizing the specific characteristics of each phenotype allows clinicians to optimize surgical techniques, preserve reproductive potential, and reduce the likelihood of recurrence.

Conclusion

An individualized approach to the surgical treatment of endometriosis, considering its clinical phenotype, plays a crucial role in achieving effective and safe outcomes. Since each phenotype—superficial peritoneal endometriosis, ovarian endometrioma, and deep infiltrating endometriosis—differs in pathogenesis, localization, and severity, surgical tactics must be carefully tailored to each case.

Comprehensive preoperative assessment, including imaging and clinical evaluation, enables accurate diagnosis and optimal surgical planning. The balance between radical lesion removal and organ preservation should be maintained to protect reproductive function and prevent recurrence.

A multidisciplinary approach involving gynecologists, reproductive specialists, and surgeons enhances the effectiveness of treatment, particularly in complex cases of deep infiltrating endometriosis. Postoperative management, including hormonal therapy and long-term follow-up, further improves patient outcomes.Personalization of surgical tactics based on the clinical phenotype of endometriosis contributes to improved quality of life, preservation of fertility, and reduction in recurrence rates, forming the foundation of modern, evidence-based endometriosis management.

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