LAPAROSCOPIC EVALUATION AND TREATMENT OF ENDOMETRIOSIS BEFORE IVF

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Endometriosis is a prevalent cause of infertility, and its optimal management before in-vitro fertilization (IVF) remains an evolving area of reproductive surgery. Laparoscopic evaluation allows direct visualization, accurate staging, and targeted treatment of endometriotic lesions, potentially improving reproductive outcomes.

To assess the role of laparoscopic evaluation and surgical management of endometriosis prior to IVF in optimizing ovarian response, implantation rates, and overall clinical pregnancy success.

A comprehensive review of patients undergoing laparoscopic assessment for suspected or confirmed endometriosis prior to IVF was performed. Laparoscopic procedures included diagnostic evaluation, excision/ablation of peritoneal implants, adhesiolysis, cystectomy for endometriomas, and restoration of tubo-ovarian anatomy. Outcomes measured included ovarian reserve parameters, postoperative IVF stimulation characteristics, implantation rate, clinical pregnancy rate, and complication profile.

Laparoscopy enabled precise detection and complete treatment of superficial and deep infiltrating endometriotic lesions. Surgical excision of endometriomas and adhesiolysis significantly improved pelvic anatomy, reduced inflammatory burden, and facilitated follicular access during oocyte retrieval. Patients who underwent thorough laparoscopic management demonstrated improved ovarian responsiveness, higher-quality oocytes, and enhanced implantation and clinical pregnancy rates compared with those proceeding directly to IVF. The procedure was safe, with minimal morbidity and no adverse impact on ovarian reserve when meticulous techniques were employed.

Laparoscopic evaluation and tailored surgical treatment of endometriosis prior to IVF play a pivotal role in enhancing reproductive outcomes. By restoring pelvic anatomy, reducing inflammation, and improving follicular accessibility, minimally invasive surgery remains a valuable adjunct in the comprehensive management of infertility associated with endometriosis.

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MINIMALLY INVASIVE MYOMECTOMY: HYSTEROSCOPIC AND LAPAROSCOPIC APPROACHES

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Uterine fibroids are among the most common benign gynecologic tumors and may cause infertility, heavy menstrual bleeding, pelvic pain, and adverse pregnancy outcomes. Minimally invasive myomectomy—via hysteroscopic or laparoscopic routes—has revolutionized fibroid surgery by reducing morbidity, promoting rapid recovery, and preserving reproductive potential.

To review and compare the indications, techniques, efficacy, and outcomes of hysteroscopic and laparoscopic myomectomy within the spectrum of minimally invasive fibroid management.

Current evidence and expert surgical principles were analyzed to outline patient selection, preoperative optimization, intraoperative strategies, and postoperative outcomes for hysteroscopic and laparoscopic approaches. Special emphasis was placed on anatomical considerations, energy modalities, morcellation methods, hemorrhage-reduction strategies, and fertility outcomes.

Hysteroscopic myomectomy is the gold standard for symptomatic submucous (FIGO type 0–2) fibroids and offers high rates of symptom resolution, restoration of normal cavity architecture, and fertility improvement with minimal complications. Laparoscopic myomectomy remains the preferred approach for intramural and subserosal fibroids, demonstrating advantages such as reduced blood loss, shorter hospital stay, fewer adhesions, and enhanced reproductive outcomes when performed by skilled surgeons. Advances such as vasopressin infiltration, barbed sutures, 3D laparoscopy, contained morcellation, and enhanced recovery pathways have further improved safety and efficiency.

Minimally invasive myomectomy—whether hysteroscopic or laparoscopic—offers optimal outcomes for appropriately selected patients, balancing fibroid removal with uterine preservation. Continued refinement of techniques and technologies will further enhance safety, fertility outcomes, and long-term patient satisfaction.