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PERSONALIZED FERTILITY-PRESERVING MANAGEMENT OF OVARIAN ENDOMETRIOMAS: INTEGRATING SURGERY, HORMONAL THERAPY, OVARIAN RESERVE, AND ASSISTED REPRODUCTION

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Abstract

Ovarian endometriomas represent a major therapeutic challenge in reproductive-age women because both the disease itself and its treatment may compromise ovarian reserve and future fertility. Traditional management has focused predominantly on surgical removal of the cyst; however, contemporary reproductive medicine increasingly emphasizes preservation of functional ovarian tissue and avoidance of unnecessary or repeated ovarian interventions.

Objective

To evaluate current medical, surgical, and reproductive strategies for ovarian endometriomas and to propose a personalized fertility-preserving approach integrating ovarian reserve, hormonal therapy, surgical technique, recurrence prevention, assisted reproductive technology, and fertility preservation.

Materials and Methods

A structured narrative review was conducted using PubMed/MEDLINE and current European Society of Human Reproduction and Embryology recommendations. Priority was given to international clinical guidelines, systematic reviews, meta-analyses, randomized controlled trials, and high-quality comparative studies published predominantly between 2022 and September 2026. Outcomes of interest included serum anti-Müllerian hormone (AMH), antral follicle count (AFC), endometrioma size, recurrence, oocyte yield, clinical pregnancy, and live birth.

Results

Cystectomy provides effective recurrence control but is associated with postoperative deterioration of ovarian reserve, particularly after bilateral and repeated surgery. Ablative techniques result in a smaller decline in AMH but may carry a greater recurrence risk. Hormonal therapies, including dienogest, combined hormonal contraceptives, GnRH agonists, and selected other regimens, can significantly reduce endometrioma dimensions and control symptoms. Their fertility-preserving effect is predominantly indirect through recurrence prevention and avoidance of repeated surgery. Ethanol sclerotherapy represents a potential ovarian-sparing option in selected patients. Routine surgery before IVF/ICSI does not improve live-birth rates and may reduce AMH and the number of retrieved oocytes. Oocyte or embryo cryopreservation should be considered before potentially damaging ovarian interventions in selected high-risk women.

Conclusion

The management of ovarian endometriomas should shift from a lesion-centred model toward individualized

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reproductive management. Age, AMH, AFC, laterality, previous ovarian surgery, symptoms, recurrence risk, reproductive timing, and anticipated need for assisted reproduction should guide treatment selection. Preservation of functional ovarian tissue and future reproductive potential should be considered major therapeutic endpoints.

Keywords: ovarian endometrioma; endometriosis; fertility preservation; ovarian reserve; anti-Müllerian hormone; dienogest; cystectomy; ablation; IVF; oocyte cryopreservation.

1. Introduction

Endometriosis is a chronic inflammatory, estrogen-dependent condition characterized by the presence of endometrium-like tissue outside the uterine cavity. Ovarian endometriomas constitute one of the most clinically relevant manifestations of the disease because they commonly affect women during reproductive life and are closely associated with pelvic pain, infertility, altered ovarian anatomy, and concerns regarding ovarian reserve [1].

The relationship between ovarian endometrioma and fertility is multifactorial. The ovarian microenvironment surrounding an endometrioma may be characterized by inflammation, oxidative stress, fibrosis, altered follicular development, and structural changes within the ovarian cortex. At the same time, treatment itself may contribute to loss of reproductive potential. Surgical stripping of the cyst wall can unintentionally remove healthy ovarian cortex containing primordial follicles, while excessive thermal haemostasis may damage ovarian vasculature and viable tissue [1,2].

This creates a therapeutic paradox. Leaving an endometrioma untreated may expose the patient to persistent symptoms, cyst progression, recurrence-related complications, or technical difficulties during assisted reproductive procedures. Conversely, aggressive surgical treatment may decrease the number of remaining follicles and impair subsequent ovarian response.

The concept of successful treatment must therefore extend beyond complete removal of the cyst.

Contemporary management increasingly considers the ovary as a limited reservoir of non-renewable follicles. For women wishing to preserve fertility, the clinically relevant question is not simply whether an endometrioma can be removed, but whether intervention improves overall reproductive prognosis without producing disproportionate damage to ovarian reserve.

In parallel, the role of medical therapy has been reconsidered. Hormonal suppression can reduce endometriosis-associated pain and, in selected regimens, decrease endometrioma size. Following surgery, long-term hormonal treatment may reduce recurrence and thereby decrease the likelihood of repeat ovarian operations. Although hormonal therapy does not directly improve fertility while ovulation is suppressed, prevention of recurrent disease and repeated surgery may indirectly protect reproductive potential [1,4–6].

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The increasing availability of assisted reproductive technology (ART), oocyte vitrification, embryo cryopreservation, ovarian-sparing surgical techniques, and minimally invasive interventions such as ethanol sclerotherapy has further expanded treatment options.The aim of this review was to integrate contemporary evidence regarding medical, surgical, and reproductive management of ovarian endometriomas and to propose an individualized fertility-preserving clinical framework based on ovarian reserve, reproductive goals, recurrence risk, and anticipated use of ART.

2. Materials and Methods

2.1. Review design

A structured narrative review was undertaken to evaluate contemporary evidence regarding fertility-preserving management of ovarian endometriomas.

The review was designed to address four interrelated therapeutic domains: preservation of ovarian reserve, hormonal management, surgical treatment, and reproductive planning.

2.2. Information sources

PubMed/MEDLINE and the official European Society of Human Reproduction and Embryology guideline resources were used as the principal information sources.

Priority was given to publications from 2022 through September 2026 in order to emphasize contemporary clinical practice and emerging fertility-preserving strategies. Earlier evidence was considered only when relevant to guideline recommendations or interpretation of current data.

2.3. Search concepts

The literature search incorporated combinations of the following terms:

“ovarian endometrioma,” “endometriosis,” “fertility preservation,” “ovarian reserve,” “anti-Müllerian hormone,” “AMH,” “antral follicle count,” “dienogest,” “hormonal treatment,” “cystectomy,” “ablation,” “CO2 laser,” “ethanol sclerotherapy,” “IVF,” “ICSI,” “oocyte cryopreservation,” and “recurrence.”

Priority was assigned to clinical guidelines, systematic reviews, meta-analyses, randomized controlled trials, and high-quality comparative studies

3. Result.

3.1. Ovarian Endometrioma and Ovarian Reserve

Ovarian reserve constitutes a central determinant of therapeutic decision-making in women with endometriomas.

Serum AMH and AFC are the most frequently used clinical markers. However, they do not provide identical information. Contemporary appraisal of the available evidence suggests that AMH may be more sensitive than AFC for detecting ovarian reserve deterioration after endometriotic cystectomy [2].

The degree to which an untreated endometrioma independently reduces ovarian reserve remains incompletely defined. In contrast, the negative effect of ovarian surgery, particularly cystectomy, is supported by substantially stronger evidence.Loss of ovarian

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reserve following surgery may occur through several mechanisms: inadvertent removal of healthy cortical tissue together with the pseudocapsule, vascular injury, thermal damage during haemostasis, local inflammatory response, and subsequent fibrosis.The reproductive consequences become particularly important in bilateral disease, recurrent endometriomas, previous ovarian surgery, and women with already reduced baseline ovarian reserve.

Accordingly, AMH, AFC, age, laterality, and surgical history should be considered before elective ovarian intervention.

3.2. Cystectomy and Its Impact on Fertility

Laparoscopic cystectomy remains an established surgical treatment when intervention is clinically indicated. Removal of the cyst wall generally provides effective control of the lesion and lower recurrence compared with simple drainage.From the reproductive perspective, however, cystectomy has an important disadvantage: healthy ovarian tissue may be removed together with the cyst capsule.

A 2024 meta-analysis comparing cystectomy and ablative treatment demonstrated a mean postoperative AMH reduction of approximately 1.08 ng/mL after cystectomy compared with 0.40 ng/mL after ablation [3].

The effect of cystectomy becomes particularly important after bilateral procedures and repeat surgery, where cumulative loss of functional ovarian cortex may substantially compromise reproductive potential.The decision to perform cystectomy should therefore not depend exclusively on the presence or diameter of an endometrioma. Symptoms, imaging characteristics, ovarian reserve, reproductive age, previous surgery, infertility factors, and reproductive plans should be integrated into the decision.

3.3. Ablative and Ovarian-Sparing Surgical Techniques

Ablative treatment aims to destroy the internal endometriotic lining while preserving a greater proportion of surrounding ovarian cortex.

Techniques include CO_2 laser vaporization and other forms of controlled ablation.

In the 2024 meta-analysis by Paik and Jee, postoperative AMH values were significantly more favourable following ablation than cystectomy. The benefit was particularly apparent in bilateral disease and following laser ablation .This ovarian-reserve advantage, however, was accompanied by a higher recurrence risk. The overall recurrence risk was approximately 1.5-fold higher after ablation, while the one-year recurrence risk was more than twice that observed after cystectomy. Pregnancy rates did not significantly differ between the two approaches [3].

These findings demonstrate the fundamental clinical trade-off between maximum lesion eradication and maximum preservation of ovarian tissue.

A 2026 Bayesian network meta-analysis of randomized trials further emphasized that ovarian reserve may also depend on the specific surgical and haemostatic technique used rather than on cyst removal alone [10].For fertility-preserving surgery, unnecessary thermal coagulation should therefore be minimized, the cleavage plane should be carefully identified, and non-thermal haemostatic approaches or suturing may be considered when clinically appropriate.

3.4. Hormonal Therapy as a Component of Fertility-Preserving Management

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Hormonal therapy has an important but frequently misunderstood role in ovarian endometrioma management.Its principal objectives include reduction of endometriosis-associated pain, suppression of lesion activity, reduction of cyst dimensions in selected patients, and prevention of postoperative recurrence.Hormonal therapy does not increase natural fertility during active ovarian suppression. Its fertility-preserving contribution is primarily indirect.By controlling disease and reducing recurrence, medical treatment may prevent or delay repeat ovarian surgery and thereby reduce cumulative loss of functional ovarian tissue.

3.5. Dienogest and Other Progestins

Dienogest is one of the most extensively studied progestins in endometriosis.

A 2024 systematic review and meta-analysis demonstrated a mean reduction in endometrioma diameter of approximately 1.32 cm following dienogest treatment. A significant decrease in cyst volume was also observed [4].

Another 2024 meta-analysis evaluating hormonal suppression found that endometrioma volume decreased by an average of approximately 55% after at least six months of treatment across included regimens, although heterogeneity was high [5].

Dienogest showed one of the most pronounced reductions in cyst volume.In clinical practice, dienogest may be particularly valuable in women with symptomatic disease who are not attempting immediate conception, including those in whom surgery is undesirable because of low ovarian reserve or previous ovarian intervention.Its potential adverse effects include irregular bleeding, spotting, headache, mood-related symptoms, and other progestin-related effects.Because dienogest suppresses reproductive function during treatment, it should not be considered a direct treatment for infertility.

3.6. Combined Hormonal Contraceptives

Combined hormonal contraceptives represent a widely used first-line option for control of endometriosis-associated pain.A meta-analysis of medical management demonstrated a mean decrease in endometrioma diameter of approximately 1.06 cm with oral contraceptive therapy [4].However, the magnitude of cyst regression varies among studies, and another systematic review found less consistent evidence for a statistically significant reduction in endometrioma volume with combined hormonal contraceptives [5].Their role is particularly important after conservative surgery in women who do not plan immediate pregnancy.Long-term hormonal suppression can reduce recurrence and may therefore protect ovarian reserve indirectly by lowering the probability of repeat surgery.

3.7. GnRH Agonists and Antagonists

GnRH agonists effectively suppress ovarian estrogen production and can reduce endometriosis-associated pain and lesion activity.In the meta-analysis by Eberle et al., GnRH agonist treatment was associated with an average reduction in endometrioma diameter of approximately 1.17 cm [4].

Their long-term use is limited by hypoestrogenic adverse effects, including vasomotor symptoms, vaginal dryness, and reduction in bone mineral density. Add-back therapy may therefore be appropriate when treatment is prolonged.Oral GnRH antagonists provide more rapid and dose-dependent suppression of the hypothalamic–pituitary–ovarian axis without

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the initial flare associated with agonists. They are increasingly used for endometriosis-associated pain, although evidence specifically addressing long-term reproductive outcomes in ovarian endometrioma remains less mature.

3.8. Aromatase Inhibitors and Other Medical Strategies

Aromatase inhibitors reduce estrogen synthesis and may be useful in selected women with refractory endometriosis.Because aromatase inhibition alone can stimulate gonadotropin secretion and ovarian follicular activity in premenopausal women, these agents are generally combined with another suppressive hormonal treatment.The combination of norethindrone acetate and an aromatase inhibitor has demonstrated significant reductions in endometrioma volume in meta-analytic evidence [4].Danazol can also reduce endometrioma size but has a limited contemporary role because of androgenic and metabolic adverse effects.These regimens are therefore generally reserved for selected cases rather than routine first-line fertility-preserving therapy.

3.9. Postoperative Hormonal Suppression and Recurrence

A 2024 systematic review evaluating women who did not receive postoperative hormonal therapy demonstrated recurrence rates of approximately 4% at 3 months, 14% at 6 months, 17% at 12 months, and up to 27% at 24 months [6].

Repeated ovarian surgery for recurrent endometrioma may result in cumulative follicular loss.Therefore, in women not seeking immediate pregnancy, postoperative hormonal suppression should be considered an ovarian-preserving strategy because prevention of recurrence may reduce future surgical exposure.In women actively attempting conception, however, the benefit of postoperative suppression must be balanced against the delay in pregnancy attempts.Hormonal suppression should not be interpreted as a substitute for appropriate fertility treatment.

3.10. Ethanol Sclerotherapy

Transvaginal ultrasound-guided aspiration followed by ethanol sclerotherapy has emerged as a minimally invasive alternative to conventional surgery.A 2025 systematic review and meta-analysis involving 28 studies and 1,877 patients found that ethanol sclerotherapy was associated with better preservation of AMH compared with cystectomy [7].The analysis also suggested favourable IVF-related outcomes in selected patients.Sclerotherapy may be especially relevant for women with reduced ovarian reserve, recurrent endometrioma, previous ovarian surgery, bilateral disease, or an imminent plan for IVF/ICSI.Nevertheless, protocols differ substantially in ethanol concentration, exposure time, aspiration technique, and recurrence definitions.

3.11. Surgery Before IVF/ICSI

Whether an ovarian endometrioma should be surgically removed before ART has historically been controversial.Contemporary evidence increasingly argues against routine pre-IVF surgery in the absence of an independent indication.A 2026 systematic review and meta-analysis of 22 studies involving 3,590 participants compared surgery followed by IVF/ICSI with direct IVF/ICSI [9].

In women with ovarian endometriomas, prior surgery did not significantly improve live-birth rate or clinical pregnancy rate.

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Importantly, surgery was associated with a mean reduction in AMH of approximately 0.57 ng/mL and with approximately 1.24 fewer retrieved oocytes [9].These findings strongly support avoidance of routine surgical removal solely to improve ART outcomes.Surgery may nevertheless be appropriate when substantial pain, atypical imaging characteristics, concern regarding malignancy, clinically relevant progression, or technical interference with oocyte retrieval provides a separate indication.

3.12. Fertility Preservation

Fertility preservation is increasingly incorporated into the management of women with extensive ovarian endometriosis.ESHRE recommends discussing the advantages and disadvantages of fertility preservation with women who have extensive ovarian disease, while acknowledging that the true magnitude of benefit remains uncertain [1].

Strategy	Effect on ovarian reserve	Disease/recurrence control	Reproductive implications	Most appropriate context
Cystectomy	Greatest concern for postoperative AMH decline	Strong lesion and recurrence control	May decrease later ovarian response	Clinically indicated surgery, significant symptoms, selected lesions
CO_2 laser/ablation	Generally less ovarian reserve damage	Recurrence may be higher	Pregnancy rates broadly comparable with cystectomy	Surgery required but ovarian preservation prioritized
Dienogest	No surgical follicular loss	Reduces symptoms and cyst dimensions	Prevents conception during therapy; may avoid surgery/reoperation	Symptomatic women delaying pregnancy
Combined hormonal contraceptives	No direct surgical damage	Effective symptom and recurrence suppression	Contraceptive during use	Long-term suppression when pregnancy is postponed
GnRH analogues	No tissue removal but induce temporary ovarian suppression	Strong symptom suppression	Not a direct fertility treatment	Selected second-line or short-term indications

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Ethanol sclerotherapy	Potentially better preservation than cystectomy	Recurrence dependent on protocol	Potentially favourable before ART in selected women	Low reserve, recurrent disease, previous surgery
Direct IVF/ICSI	Avoids pre-ART surgical ovarian damage	Does not directly treat the cyst	No demonstrated live-birth advantage from routine prior surgery	Infertility without independent surgical indication
Oocyte/embryo cryopreservation	Preserves reproductive material before further ovarian loss	Does not treat endometriosis	Provides future reproductive opportunity	Bilateral/recurrent disease, reduced reserve, planned ovarian surgery

Oocyte vitrification currently represents the principal fertility-preservation strategy for women wishing to preserve reproductive autonomy. Embryo cryopreservation may also be appropriate depending on individual circumstances.The timing of fertility preservation is particularly important.

A 2025 systematic review found that previous surgery for endometriosis was associated with lower oocyte yield during fertility-preservation cycles [8].

A subsequent 2026 systematic review similarly reported lower numbers of retrieved oocytes among previously operated women. Reported oocyte yields were approximately 8–14 per cycle in non-operated women compared with approximately 4.5–7 in previously operated patients [11].These findings support counselling before rather than after repeated ovarian intervention whenever feasible.

Routine oocyte cryopreservation for every patient with an endometrioma is not currently supported by sufficient evidence.The strongest rationale exists in women with bilateral disease, recurrent endometrioma, low ovarian reserve, previous ovarian surgery, anticipated repeat or bilateral surgery, and reproductive plans that are likely to be postponed.

4. Discussion

The principal finding of this review is that fertility-preserving management of ovarian endometriomas cannot be reduced to a binary decision between surgery and observation.Optimal management requires integration of disease control with preservation of the remaining follicular pool.Historically, complete surgical excision was frequently considered the most definitive treatment. This paradigm is increasingly challenged by evidence demonstrating measurable postoperative deterioration of ovarian reserve.The clinical significance of this effect depends on the patient's baseline reproductive potential.A modest decline in AMH may have limited practical consequences in a young woman with a high ovarian reserve and unilateral disease. The same decline may be highly

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relevant in a woman aged over 35 years with bilateral endometriomas, low baseline AMH, or previous ovarian surgery.

This distinction underlies the need for individualized treatment.The comparison between cystectomy and ablation illustrates this principle clearly. Ablation appears to preserve AMH more effectively, whereas cystectomy provides better recurrence control [3]. Neither approach can therefore be universally classified as superior.Treatment selection should reflect which outcome carries the greatest clinical importance for the individual patient.

The role of hormonal therapy should also be reconsidered from a fertility perspective.Hormonal treatment is sometimes regarded as incompatible with fertility preservation because it suppresses ovulation during use. This interpretation overlooks its potential long-term value.Medical therapy can reduce pain and endometrioma dimensions, postpone or eliminate the need for immediate surgery in selected women, and reduce postoperative recurrence.Avoidance of a second or third ovarian operation may protect more follicles than an aggressive initial surgical strategy.Thus, fertility preservation should be understood more broadly than cryopreservation alone.It also includes prevention of unnecessary surgery, careful surgical technique, control of recurrent disease, rational use of medical therapy, and timely referral for ART.

This concept is particularly relevant when considering treatment before IVF/ICSI.

The 2026 meta-analysis showing no improvement in live birth after routine surgery, alongside reduced AMH and reduced oocyte yield, provides strong evidence against automatic surgical treatment of endometriomas before ART [9].The objective should instead be to determine whether the lesion itself creates a clinically meaningful problem requiring intervention.A similar principle applies to fertility preservation.Oocyte cryopreservation should not be automatically recommended to every woman with an endometrioma. Nevertheless, counselling should occur before irreversible loss of ovarian tissue in women with bilateral disease, recurrent endometriomas, reduced reserve, advanced reproductive age, or planned repeat ovarian surgery.Available evidence consistently demonstrates lower oocyte yields after previous ovarian surgery [8,11].

4.1. Proposed Personalized Clinical Decision Framework

A fertility-oriented approach should begin with definition of reproductive intention: immediate conception, future conception, current infertility requiring ART, or no current pregnancy plan.Baseline reproductive assessment should then include age, serum AMH, AFC, laterality of disease, previous ovarian surgery, infertility duration, and additional female or male infertility factors.

Women with bilateral disease, recurrent endometriomas, previous cystectomy, low AMH/AFC, or anticipated repeat surgery should be regarded as being at increased risk of further loss of reproductive potential.In women without an independent indication for surgery, conservative or hormonal management may be preferable when pregnancy is not immediately desired.

When pregnancy is planned immediately, prolonged suppressive hormonal treatment should generally be avoided, and the patient should proceed toward spontaneous conception or appropriately timed fertility treatment.For women requiring IVF/ICSI, the presence of an endometrioma alone should not automatically trigger surgery.When surgery

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is necessary, ovarian-tissue preservation should be regarded as a primary surgical objective. Excessive thermal coagulation and unnecessary removal of normal ovarian cortex should be avoided.Fertility-preservation counselling should occur before potentially damaging surgery in high-risk women whenever feasible.The central clinical principle can therefore be summarized as follows:Treat clinically relevant disease, preserve functional ovarian tissue, avoid unnecessary repeated surgery, and integrate ART or fertility preservation before preventable loss of reproductive potential occurs.

5. Conclusion

Personalized management of ovarian endometriomas requires a shift from lesion-centred treatment toward reproductive-life-course care.Cystectomy remains an effective option when surgery is clinically indicated, but its potential impact on ovarian reserve must be recognized, particularly in bilateral and recurrent disease.Ovarian-sparing ablative techniques may reduce postoperative loss of ovarian reserve but can be associated with a higher recurrence risk.Hormonal therapy represents an important component of fertility-preserving management. Dienogest, combined hormonal contraceptives, GnRH-based treatment, and selected other regimens can reduce symptoms and, in many cases, decrease endometrioma dimensions. Their principal reproductive benefit is indirect: prevention of recurrence, postponement of unnecessary surgery, and reduction of repeated ovarian injury.Routine surgery before IVF/ICSI should not be performed solely to improve reproductive outcomes because current evidence demonstrates no significant live-birth benefit and suggests reductions in AMH and retrieved oocyte numbers.Fertility-preservation counselling should be considered before potentially damaging ovarian surgery in women at increased reproductive risk, particularly those with bilateral or recurrent disease, low ovarian reserve, previous ovarian surgery, or delayed reproductive plans.Ultimately, successful treatment should not be defined solely by disappearance of the endometrioma.The optimal outcome is effective control of clinically relevant disease with maximal preservation of functional ovarian tissue and future reproductive potential.

References

1. Becker CM, Bokor A, Heikinheimo O, Horne A, Jansen F, Kiesel L, et al. ESHRE guideline: endometriosis. Hum Reprod Open. 2022;2022(2). doi:10.1093/hropen/hoac009.
2. Younis JS, Taylor HS. The impact of ovarian endometrioma and endometriotic cystectomy on anti-Müllerian hormone, and antral follicle count: a contemporary critical appraisal of systematic reviews. Front Endocrinol (Lausanne). 2024;15:1397279. doi:10.3389/fendo.2024.1397279.
3. Paik H, Jee BC. Impact of ablation versus cystectomy for endometrioma on ovarian reserve, recurrence, and pregnancy: an updated meta-analysis. Reprod Sci. 2024;31(7):1924–1935. doi:10.1007/s43032-024-01512-z.
4. Eberle A, Nguyen DB, Papillon Smith J, Mansour FW, Krishnamurthy S, Zakhari A. Medical management of ovarian endometriomas: a systematic review and meta-analysis. Obstet Gynecol. 2024;143(1):53–66. doi:10.1097/AOG.0000000000005444.

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www.jadr.co.in

Volume 17, Issue 04 | Received 20.09.2026 | Accepted 21.09.2026 | Online 25.09.2026

5. Thiel PS, Donders F, Kobylianskii A, Maheux-Lacroix S, Matelski J, Walsh C, Murji A. The effect of hormonal treatment on ovarian endometriomas: a systematic review and meta-analysis. J Minim Invasive Gynecol. 2024;31(4):273–279. doi:10.1016/j.jmig.2024.01.002.
6. Veth VB, Keukens A, Reijs A, Bongers MY, Mijatovic V, Coppus SFPJ, Maas JWM. Recurrence after surgery for endometrioma: a systematic review and meta-analyses. Fertil Steril. 2024;122(6):1079–1093. doi:10.1016/j.fertnstert.2024.07.033.
7. Lavadia CMM, Jeong HG, Ryu KJ, Park H. Ovarian reserve and IVF outcomes after ethanol ovarian sclerotherapy in women with endometrioma: a systematic review and meta-analysis. Reprod Biomed Online. 2025;51(1):104840. doi:10.1016/j.rbmo.2025.104840.
8. Nicolì P, Viganò P, Saccone G, Di Naro E, Vimercati A, Cicinelli E, Vitagliano A. Oocyte cryopreservation for patients with endometriosis: where are we now? A systematic review. Reprod Biomed Online. 2025;51(1):104839. doi:10.1016/j.rbmo.2025.104839.
9. Riemma G, García-Velasco JA, Abrão MS, et al. IVF/ICSI or surgery as first approach for the treatment of infertility associated with ovarian and deep infiltrating endometriosis? A systematic review and meta-analysis. Reprod Biomed Online. 2026;52(2):105178.
10. Miller KAR, Servidoni ACP, Dos Santos PL, Surmann H, da Silva DBP, Andres MP, et al. Optimal laparoscopic surgical technique for preserving fertility and ovarian reserve in patients with endometrioma: a systematic review and Bayesian network meta-analysis of randomized controlled trials. J Minim Invasive Gynecol. 2026;33(7):868–878. doi:10.1016/j.jmig.2026.01.039.
11. Téoule J, Bundschu K, Hancke K. Individualized fertility preservation counselling for women with endometriosis—a systematic review. Wien Med Wochenschr. 2026. doi:10.1007/s10354-026-01151-w.
12. Richard E, Morin J, Murji A, Lemyre M, Laberge PY, Maheux-Lacroix S. Effect of postoperative hormonal suppression on fertility in patients with endometriosis after conservative surgery: a systematic review and meta-analysis. Obstet Gynecol. 2022;139(6):1169–1179. doi:10.1097/AOG.0000000000004811.