American Journal of Medicine and Medical Sciences 2025, 15(8): 2475-2478
DOI: 10.5923/j.ajmms.20251508.10

Improving the Diagnosis of External Genital Endometriosis: The Laparoscopic Approach

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Abstract External genital endometriosis remains a challenging condition to diagnose due to its variable presentation and nonspecific symptoms, often leading to misdiagnosis or delayed treatment. This paper explores the role of laparoscopy as a gold standard in improving the accuracy of diagnosing external genital endometriosis. The study reviews current diagnostic limitations, highlights the advantages of minimally invasive laparoscopic techniques, and discusses the visualization of endometriotic lesions that are not detectable through clinical examination or imaging alone. Laparoscopy allows for direct inspection of pelvic and genital structures, enabling not only precise diagnosis but also simultaneous therapeutic intervention. Through a comprehensive review of clinical cases and recent studies, this paper emphasizes the importance of incorporating laparoscopy into the diagnostic algorithm for suspected endometriosis, especially in patients with persistent symptoms and inconclusive non-invasive test results. Early and accurate diagnosis through laparoscopy significantly enhances patient outcomes, reduces chronic pain, and preserves reproductive health.

Keywords External genital endometriosis, Laparoscopy, Diagnosis, Minimally invasive surgery, Pelvic pain, Endometriotic lesions, Gynecologic imaging, Reproductive health

1. Introduction

Endometriosis is a chronic, estrogen-dependent gynecological disorder characterized by the presence of endometrial-like tissue outside the uterine cavity. It affects approximately 10% of women of reproductive age globally, with significant implications for their quality of life, fertility, and mental health. Among the various subtypes, external genital endometriosis —though less commonly diagnosed—presents unique diagnostic and therapeutic challenges. External genital endometriosis refers to the involvement of vulvar, perineal, and perianal regions, and is often underrecognized due to its atypical presentation and the limitations of conventional diagnostic methods.

In recent years, there has been increasing attention toward minimally invasive approaches in gynecological diagnostics, particularly laparoscopy. Laparoscopy has revolutionized the field by providing direct visualization of pelvic and genital structures, facilitating accurate diagnosis and enabling simultaneous treatment of endometriotic lesions. This advancement is particularly relevant for conditions like external genital endometriosis, where superficial or deep lesions may not be detected through imaging or physical examination alone.

The Diagnostic Challenge of External Genital Endometriosis

Received: Jul. 11, 2025; Accepted: Aug. 1, 2025; Published: Aug. 2, 2025
Published online at http://journal.sapub.org/ajmms

Unlike pelvic endometriosis, which often presents with dysmenorrhea, chronic pelvic pain, and infertility, external genital endometriosis may manifest with nonspecific symptoms such as localized vulvar pain, dyspareunia, cyclical bleeding from perineal scars, or subcutaneous nodules. These symptoms may mimic other dermatologic or infectious conditions, leading to misdiagnosis or inappropriate treatment. Additionally, the rarity of the condition contributes to a general lack of awareness among both general practitioners and gynecologists.

The standard diagnostic tools such as ultrasound and MRI offer limited utility in identifying external genital endometriotic lesions, especially when they are small or superficially located. Histopathological confirmation through biopsy remains the gold standard, but the challenge lies in accurately identifying the suspicious area for sampling. As such, many cases are either missed or diagnosed late, leading to prolonged suffering and reduced quality of life for patients.

Limitations of Conventional Imaging and Clinical Diagnosis

Clinical examination may reveal tender nodules, discoloration, or swelling in affected areas, particularly in cases associated with previous perineal trauma or episiotomy scars. However, these signs are often subtle and can be mistaken for cysts, abscesses, or dermatological conditions. Similarly, imaging modalities like transvaginal ultrasonography or MRI may fail to detect superficial lesions or lack the resolution to differentiate endometriotic tissue from surrounding fibrous or inflamed tissues.

The delay in diagnosis for endometriosis, in general, ranges between 7 to 10 years from the onset of symptoms, and in cases of external genital endometriosis, this delay may be even longer. Misdiagnosis can lead to unnecessary surgeries, inappropriate antibiotic use, or neglect of the underlying pathology. Therefore, a more reliable and direct diagnostic approach is necessary to improve early detection and management.

The Role of Laparoscopy in Diagnosis

Laparoscopy offers a significant advantage in diagnosing various forms of endometriosis due to its ability to visualize the pelvic and genital anatomy in real time. Through the laparoscope, the surgeon can inspect regions that are not easily accessible through conventional methods, including the posterior vaginal wall, perineal area, and adjacent peritoneal surfaces. Moreover, laparoscopy allows for the identification of subtle lesions, such as clear or red vesicular implants, fibrotic nodules, or powder-burn marks that are characteristic of endometriosis.

For patients presenting with unexplained vulvar pain, cyclical swelling or bleeding at episiotomy scars, and unremarkable imaging results, diagnostic laparoscopy should be considered a valuable tool. This procedure can confirm the presence of external genital endometriosis and offer the opportunity for immediate excision or ablation of lesions, providing symptomatic relief and reducing disease progression.

Advances in Laparoscopic Techniques and Instrumentation

Technological advancements in laparoscopic equipment, including high-definition cameras, narrow-diameter scopes, and enhanced energy sources, have improved the diagnostic accuracy and safety of laparoscopic procedures. The ability to perform mapping biopsies, targeted excision, and even reconstructive procedures using minimally invasive techniques has expanded the therapeutic potential of laparoscopy.

Furthermore, laparoscopy enables the identification of concurrent pelvic endometriosis, which is common in patients with external genital lesions. This holistic approach helps guide comprehensive treatment strategies that address both local and systemic disease manifestations.

Laparoscopy versus Non-Invasive Methods

While non-invasive methods such as clinical examination and imaging continue to play a role in the initial assessment of patients, their limitations underscore the need for a more definitive diagnostic modality. Laparoscopy, despite being a surgical procedure, provides both diagnostic confirmation and therapeutic benefit in a single session. The risk-benefit ratio is favorable, especially in patients with recurrent or debilitating symptoms who have not responded to medical therapy or conservative management.

In contrast, reliance on non-invasive methods alone may lead to underdiagnosis or delayed diagnosis, perpetuating patient suffering and increasing healthcare costs due to repeated consultations and ineffective treatments. Therefore, timely referral for laparoscopic evaluation should be a priority in managing suspected external genital endometriosis.

Impact on Patient Outcomes

Early and accurate diagnosis through laparoscopy has a profound impact on patient outcomes. It reduces the time to effective treatment, prevents unnecessary interventions, and improves symptom control. Additionally, it contributes to preserving reproductive health, especially in women of childbearing age. Psychological well-being is also enhanced when patients receive a clear diagnosis and feel validated in their symptoms, countering the frustration that often accompanies chronic pain disorders.

Conclusion and Rationale for the Study

The diagnostic approach to external genital endometriosis requires a paradigm shift from passive observation and symptomatic treatment to proactive, minimally invasive investigation. Laparoscopy stands as a pivotal tool in this transition. The present study aims to explore the effectiveness, reliability, and clinical outcomes associated with the use of laparoscopy in diagnosing and managing external genital endometriosis. By consolidating current evidence and clinical experience, this research seeks to provide a comprehensive framework for integrating laparoscopic evaluation into routine gynecologic practice, ultimately enhancing patient care and advancing the field of endometriosis management.

2. Materials and Methods

Study Design and Setting

This prospective clinical observational study was conducted between January 2021 and December 2023 at the Department of Gynecology and Minimally Invasive Surgery, Medion a tertiary care center specializing in advanced gynecological disorders. Ethical approval was obtained from the institutional review board, and informed consent was secured from all participants.

Study Population

A total of **54 female patients** aged 18–45 years who presented with persistent perineal, vulvar, or external genital pain—suspected to be associated with endometriosis—were enrolled. Inclusion criteria were: [1, 765]

Cyclical or chronic pain in the external genital region,

Previous history of perineal trauma or episiotomy,

Negative or inconclusive findings on imaging (ultrasound/MRI),

Failure to respond to empirical hormonal therapy.

Patients with known pelvic inflammatory disease, neoplastic lesions, or unfit for general anesthesia were excluded.

Preoperative Assessment

All patients underwent:

Physical and gynecological examination,

Baseline ultrasonography,

MRI (in 32 cases) to assess subcutaneous nodules or lesions,

Laboratory investigations including CA-125 levels.

Laparoscopic Procedure

All surgeries were performed under general anesthesia using standard laparoscopy. A 10 mm umbilical port and two 5 mm accessory ports were used. After systematic inspection of the pelvis, special attention was given to the posterior compartment, perineal reflection, and external genital tract using a retroverted scope and repositioning techniques.

Suspected lesions were biopsied, and in most cases, excised completely. Hemostasis was achieved using bipolar diathermy or harmonic scalpel. Excised tissues were sent for histopathological examination. [2, 2390]

Outcome Measures

Primary outcome:

Accuracy of laparoscopic diagnosis confirmed by histopathology.

Secondary outcomes:

Symptom relief post-surgery,
Presence of associated pelvic endometriosis,
Recurrence rates after 12-month follow-up.

3. Results and Discussion

Patient Characteristics

Out of 54 patients:

Mean age: 32.5 ± 6.1 years,
68% (n=37) had a history of episiotomy,
81% (n=44) reported cyclical perineal pain,
48% (n=26) had previously undergone hormonal therapy.

Laparoscopic Findings

External genital endometriotic lesions were visualized and confirmed in 49 cases (90.7%),

31 patients (57.4%) had concurrent pelvic endometriosis (ovarian, uterosacral ligament, or pouch of Douglas),

Lesions appeared as bluish or pigmented nodules, fibrotic plaques, and in 5 cases, hemorrhagic cysts.

Histopathological Confirmation

In 49 patients with visualized lesions, 47 samples (95.9%) were confirmed histologically as endometriosis,

Sensitivity of laparoscopy: **95.9%**, specificity (based on negative laparoscopy in 5 patients): **100%**.

Symptom Relief

At 6-month follow-up, 89.8% (n=44) of patients reported significant pain relief,

At 12 months, 7 patients (14.3%) had mild recurrence of symptoms, managed with medical therapy.

4. Discussion

The findings support that laparoscopy is a highly effective modality for both diagnosis and treatment of external genital endometriosis. It offers clear visualization, allows concurrent identification of pelvic endometriosis, and provides immediate therapeutic benefit through excision.

The high diagnostic yield emphasizes the limitations of imaging in detecting perineal or vulvar endometriotic lesions, especially in post-episiotomy scars. The study also supports the hypothesis that many cases of "idiopathic" vulvar pain may have an endometriotic etiology.

Compared to imaging modalities, laparoscopy provides superior diagnostic accuracy, particularly in superficial and small lesions. It is worth noting that concurrent pelvic endometriosis may coexist and contribute to symptomatology, warranting a comprehensive surgical approach. [3, 350]

5. Conclusions

Laparoscopy proves to be a reliable, safe, and effective tool in improving the diagnosis of external genital endometriosis. It offers both diagnostic clarity and immediate therapeutic intervention, significantly reducing symptom burden and improving the quality of life. The high correlation with histopathology confirms its diagnostic value, and its ability to detect coexisting pelvic disease underscores its comprehensive utility.

Considering the diagnostic challenges posed by this condition, especially in patients with nonspecific symptoms and inconclusive imaging, early use of laparoscopy should be considered. This approach not only enhances patient care but also contributes to the broader understanding and management of atypical endometriotic presentations.

REFERENCES

[1] Chapron, C., Fauconnier, A., Dubuisson, J. B., et al. (2003). Deep infiltrating endometriosis: relation between severity of dysmenorrhea and extent of disease. *Human Reproduction*, 18(4), 760–766.

[2] Giudice, L. C. (2010). Clinical practice: endometriosis. *New England Journal of Medicine*, 362(25), 2389–2398.

[3] Abrao, M. S., Podgaec, S., Dias, J. A., et al. (2008). Endometriosis involvement of the urinary tract and the genitals. *Best Practice & Research Clinical Obstetrics & Gynaecology*, 18(2), 349–364.

[4] Vercellini, P., Vigano, P., Somigliana, E., & Fedele, L. (2014). Endometriosis: pathogenesis and treatment. *Nature Reviews Endocrinology*, 10(5), 261–275.

[5] Hurd, W. W., & Amesse, L. S. (2003). Diagnosis of endometriosis in adolescents. *Journal of Pediatric and Adolescent Gynecology*, 16(3), S3–S6.

[6] Chapron, C., Marcellin, L., Borghese, B., & Santulli, P. (2019). Rethinking mechanisms, diagnosis and management of endometriosis. Nature Reviews Endocrinology, 15(11), 666–682. https://doi.org/10.1038/s41574-019-0245-z.

[7] Audebert, A., Petousis, S., Margioula-Siarkou, C., Ravanos,

K., & Prapas, N. (2020). Role of laparoscopy in diagnosing and treating deep infiltrating endometriosis. Journal of Minimally Invasive Gynecology, 27(5), 1024–1031. https://doi.org/10.1016/j.jmig.2020.01.011.

[8] Johnson, N. P., Hummelshoj, L., Adamson, G. D., Keckstein, J., Taylor, H. S., Abrao, M. S., & Giudice, L. C. (2017). World Endometriosis Society consensus on the classification of endometriosis. Human Reproduction, 32(2), 315–324. https://doi.org/10.1093/humrep/dew293.

[9] Vercellini, P., Vigano, P., Somigliana, E., & Fedele, L. (2014). Endometriosis: Pathogenesis and clinical perspectives. Best Practice & Research Clinical Obstetrics & Gynaecology, 28(5), 695–711. https://doi.org/10.1016/j.bpobgyn.2014.05.006.

[10] Nezhat, C., Li, A., Falik, R., Razavi, G. M., Shakiba, B., & Nezhat, C. (2021). Laparoscopic treatment of endometriosis: A review of techniques and outcomes. JSLS: Journal of the Society of Laparoscopic & Robotic Surgeons, 25(1), e2021.00008. https://doi.org/10.4293/JSLS.2021.00008.

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