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Short-Wave Diathermy and Pelvic Floor Training in Post-Polypectomy Adnexitis: A Case Report

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Abstract

Background: Post-polypectomy adnexitis may contribute to persistent pelvic pain, lumbopelvic dysfunction, and reduced functional capacity. Evidence regarding combined physiotherapy management using Short-Wave Diathermy (SWD) and Pelvic Floor Muscle Training (PFMT) in post-polypectomy adnexitis remains limited.
Objective: This case report aimed to evaluate the effects of combined SWD and PFMT on pain reduction and functional improvement in post-polypectomy adnexitis.
Methods: A single-case report was conducted in a 41-year-old woman with persistent pelvic pain following bilateral fallopian tube polypectomy. Pain intensity was assessed using the Numeric Rating Scale (NRS), while functional limitation was evaluated using the Pelvic Pain Impact Questionnaire (PPIQ). The intervention consisted of pulsed SWD (27.12 MHz; pulse duration 100 µs; 15 minutes/session) combined with supervised PFMT based on the Frequency, Intensity, Time, and Type principle. Five physiotherapy sessions were administered.
Results: Resting pain decreased from 6 to 0, tenderness pain decreased from 6 to 1, and movement pain decreased from 7 to 1 on the NRS. The PPIQ total score improved from 20 to 8, indicating reduced pelvic pain-related functional limitation. Improvements were also observed in sitting tolerance, sleep quality, physical activity, and daily functional performance. No adverse events were reported.
Conclusion: Combined SWD and PFMT demonstrated positive clinical effects on pelvic pain reduction and functional improvement in post-polypectomy adnexitis. Integrated physiotherapy rehabilitation may provide beneficial complementary management for chronic pelvic pain associated with gynecological inflammatory conditions.

Keywords
Case Reports; Diathermy; Exercise Therapy; Pelvic Floor; Pelvic Inflammatory Disease; Pelvic Pain

Introduction

Pelvic inflammatory disease (PID) remains a significant reproductive health problem among women of reproductive age because of its substantial clinical, functional, and psychosocial consequences. Recent Global Burden of Disease analyses demonstrated that PID continues to contribute considerably to gynecological morbidity worldwide, with persistent inflammation potentially leading to chronic pelvic pain, pelvic adhesions, infertility, tubo-ovarian abscess, and long-term functional impairment.[1,2] These complications may negatively affect quality of life, daily activity performance, occupational productivity, and psychological well-being, thereby increasing both individual and healthcare burdens.[3]

PID is characterized by inflammatory involvement of the upper female reproductive tract, including the uterus, fallopian tubes, ovaries, and surrounding pelvic structures.[4] One common manifestation associated with PID is adnexitis, which refers to inflammatory involvement of the adnexal structures, particularly the ovaries and fallopian tubes.[5] Persistent inflammatory processes within the adnexal region may contribute to tissue damage, pelvic adhesion formation, and peripheral nociceptor sensitization, which subsequently promote chronic pelvic pain development.[6] In some patients, pelvic pain may persist despite completion of gynecological intervention, including hysteroscopy or polypectomy procedures.[7,8]

Chronic pelvic pain associated with adnexitis is increasingly recognized as a multidimensional condition involving not only gynecological pathology but also musculoskeletal and neuromuscular dysfunctions. Persistent inflammatory stimulation may induce protective muscle guarding, pelvic floor hypertonicity, altered lumbopelvic biomechanics, and impaired neuromuscular coordination.[6,9] These changes may contribute to reduced mobility, impaired sitting tolerance, sleep disturbance, decreased physical activity, and limitations in activities of daily living.[10] In addition, chronic pelvic pain may influence emotional well-being, movement confidence, and psychosocial function, thereby supporting the importance of comprehensive rehabilitation approaches within women's health physiotherapy practice.[11]

Current management of PID and adnexitis primarily focuses on pharmacological therapy and surgical intervention to control infection and remove pathological lesions.[4,8]However, some patients continue to experience persistent pelvic pain and functional limitation following medical management because of secondary musculoskeletal dysfunction and altered pelvic floor function.[9] This condition highlights the importance of integrating physiotherapy rehabilitation into multidisciplinary chronic pelvic pain management to address pain modulation, movement dysfunction, and functional recovery more comprehensively.[11]

Short-Wave Diathermy (SWD) is an electrotherapeutic modality commonly used in physiotherapy to reduce pain and improve tissue healing through thermal and non-thermal physiological effects. Pulsed SWD may improve local circulation, reduce muscle spasm, increase tissue metabolism, and modulate nociceptive transmission through neurophysiological pain inhibition mechanisms.[12,13] Previous studies have demonstrated beneficial effects of SWD in chronic musculoskeletal pain conditions; however,

evidence regarding its application in gynecological inflammatory pain conditions remains limited.[11] In addition to electrotherapy, Pelvic Floor Muscle Training (PFMT) has been recognized as an important rehabilitation strategy for women with pelvic floor dysfunction and chronic pelvic pain. PFMT aims to improve pelvic floor muscle strength, endurance, coordination, and lumbopelvic stability, thereby supporting pelvic organ function and reducing pain-related movement dysfunction.[14] Studies have shown that pelvic floor rehabilitation combined with breathing control and stabilization exercise may improve neuromuscular coordination, physical function, and quality of life in women with chronic pelvic disorders.[15,16]

The combination of SWD and PFMT may provide synergistic therapeutic effects because SWD may facilitate pain reduction and tissue relaxation, while PFMT may improve lumbopelvic stability, neuromuscular control, and pelvic floor coordination associated with chronic pelvic pain conditions.[14,16] [17]Nevertheless, evidence regarding integrated physiotherapy management combining SWD and PFMT in post-polypectomy adnexitis remains scarce. Most previous studies have focused on generalized chronic pelvic pain, musculoskeletal disorders, or pharmacological management rather than specifically addressing physiotherapy rehabilitation following gynecological inflammatory conditions.[18]

Therefore, this case report aimed to evaluate the effects of combined SWD and PFMT on pelvic pain reduction and functional improvement in a patient with post-polypectomy adnexitis. This report also sought to contribute preliminary clinical evidence regarding integrated physiotherapy rehabilitation in women's health physiotherapy practice.

Methods

This study was conducted using a single-patient CARE case report design to describe the physiotherapy assessment, intervention, and clinical outcomes in a patient with post-polypectomy adnexitis presenting with chronic pelvic pain and functional limitation**.** The report was prepared in accordance with the CARE reporting guideline for clinical case reports.[19]

The patient was a 41-year-old woman with obstetric history G0P0A0 who was referred to physiotherapy because of persistent lower pelvic pain and movement-related discomfort following bilateral fallopian tube polypectomy. The patient reported difficulty performing prolonged sitting, transitional movement, and household activities after surgery despite receiving routine gynecological management. The patient predominantly performed sedentary daily activities and reported reduced tolerance during prolonged functional activity. Prior to physiotherapy referral, the patient underwent laparoscopic and hysteroscopic examinations, which demonstrated inflammatory involvement of the adnexal region accompanied by bilateral fallopian tube polyps. Bilateral fallopian tube polypectomy was subsequently performed; however, pelvic pain and functional limitation persisted after surgery.

No previous history of recurrent pelvic inflammatory infection, malignancy, neurological disorder, implanted electronic device, or metal implant placement was reported. The patient also denied progressive neurological symptoms, unexplained bleeding, bowel incontinence, fever, or systemic infection symptoms during physiotherapy screening. Because the case was managed within routine clinical physiotherapy practice, detailed pelvic floor grading assessment, electromyography, and objective lumbopelvic range-of-motion measurements were not performed.

A comprehensive physiotherapy examination was conducted through history taking, physical examination, functional assessment, and patient-reported outcome evaluation. Observation revealed guarded lower abdominal movement and mild antalgic movement behavior during transitional activities. Palpation demonstrated tenderness in the lower abdominal and pelvic regions accompanied by increased muscle tension around the lumbopelvic area. Mild protective abdominal guarding was also identified during palpation and movement assessment. Functional examination showed movement-provoked pain during trunk mobility and positional transfer activities involving lumbopelvic coordination. No severe postural deformity or neurological abnormality was identified during clinical examination.

Pain intensity was evaluated using the Numeric Rating Scale (NRS), a validated outcome measure commonly used in musculoskeletal and pelvic pain assessment.[20] The NRS uses an 11-point scale ranging from 0 (no pain) to 10 (worst imaginable pain). Pain was assessed under three conditions, including resting pain, tenderness pain, and movement pain. Functional impairment associated with pelvic pain was assessed using the Pelvic Pain Impact Questionnaire (PPIQ), a validated patient-reported outcome measure designed to evaluate the multidimensional impact of pelvic pain on physical function, emotional well-being, sleep quality, and activity participation.[15] Previous studies reported good validity and reliability of the PPIQ for evaluating pelvic pain-related disability in women with pelvic floor disorders.[15] Higher PPIQ scores indicate greater functional limitation and pain-related disability. Outcome evaluations were performed at baseline (T0) and during each treatment session until the fifth physiotherapy session (T4).

Before initiation of electrotherapy, contraindication screening for Short-Wave Diathermy (SWD) was conducted to ensure patient safety**.** The patient did not present with pregnancy, active bleeding, sensory deficit, malignancy, implanted electronic devices, or acute systemic infection, which are considered contraindications or precautions for SWD application.[12] Skin integrity and thermal sensitivity around the treatment area were also assessed before each session. The intervention was temporarily postponed during menstruation to minimize excessive pelvic sensitivity and treatment discomfort.

To improve reproducibility and intervention standardization, the physiotherapy program was structured according to the Frequency, Intensity, Time, and Type (FITT) principle. The overall intervention framework is summarized in Table 1.

Table 1. FITT-Based Physiotherapy Intervention Program

Component	Description
Frequency	Five physiotherapy sessions
Intensity	Adjusted according to patient tolerance and symptom response
Time	SWD: 15 minutes/session; exercise program: 30–40 minutes/session
Type	Pulsed SWD, PFMT, breathing exercise, mobility exercise, lumbopelvic stabilization exercise
Progression	Gradual progression of neuromuscular control, movement tolerance, and functional activity

Table 1 summarizes the FITT-based intervention parameters used throughout the rehabilitation program. The intervention was designed to improve reproducibility while maintaining individualized progression according to patient tolerance and symptom response.

Pulsed SWD was administered using a frequency of 27.12 MHz with pulse duration of 100 µs for 15 minutes per session. The intervention used pulsed mode to emphasize non-thermal physiological effects while minimizing excessive heat accumulation within the pelvic region.[12] The patient was positioned comfortably in supine lying during treatment. Electrode placement was performed using the coplanar technique, in which both electrodes were positioned parallel on the same side of the lumbopelvic segment to optimize electromagnetic field distribution and tissue penetration.[16] Continuous monitoring was performed throughout

treatment to identify excessive thermal sensation, dizziness, discomfort, or adverse reactions. No therapy-related adverse event was identified during the intervention period.

In addition to electrotherapy, PFMT and lumbopelvic stabilization exercises were implemented as the active rehabilitation component. Exercise selection was based on clinical reasoning related to pelvic floor dysfunction, altered neuromuscular coordination, impaired lumbopelvic stability, and movement-provoked pain frequently observed in chronic pelvic pain conditions.[6,10] All exercises were supervised directly by the physiotherapist to ensure movement accuracy, breathing coordination, and symptom monitoring throughout the rehabilitation process. The patient also received activity modification education, including avoidance of prolonged static sitting posture and excessive movement provoking pelvic discomfort.

The initial phase of rehabilitation focused on improving pelvic mobility, neuromuscular activation, and pain-free movement control. Pelvic tilting exercise was performed in the supine position with both knees flexed and feet positioned shoulder-width apart. The patient was instructed to perform controlled anterior and posterior pelvic movements synchronized with diaphragmatic breathing. The exercise was performed for 8–10 repetitions with a 5-second holding phase at the end range.[21]

Side clamshell exercise was subsequently introduced to improve pelvic and hip stabilizer activation. The patient performed the exercise in side-lying position with slight hip and knee flexion while maintaining pelvic stability during hip abduction and external rotation movement.[22,23] Modified child pose exercise was also incorporated to facilitate relaxation, gentle lumbopelvic stretching, and pelvic floor relaxation. Both exercises were performed for 8–10 repetitions in 2–3 sets according to patient tolerance.

To improve neuromuscular coordination and pelvic floor activation, diaphragmatic breathing was integrated into each exercise session. The patient was instructed to coordinate pelvic floor contraction during expiration phases to facilitate co-contraction between the diaphragm, abdominal musculature, and pelvic floor muscles.[24] Progressive stabilization exercises were then introduced through bridging and bird dog exercises to improve core stability, pelvic control, postural coordination, and functional movement tolerance.[25] Exercise intensity and repetition were adjusted progressively according to symptom response and movement tolerance throughout the intervention period.

Clinical outcomes were analyzed descriptively by comparing changes in pain intensity and PPIQ scores between baseline evaluation (T0) and the final treatment session (T4). Trends in symptom reduction and functional improvement were interpreted clinically based on sequential outcome progression across treatment sessions**.** Because this study was designed as a single case report, no inferential statistical analysis or effect size calculation was performed.

To improve transparency and facilitate future visual conversion, the chronological clinical timeline of the patient is summarized on Figure 1.

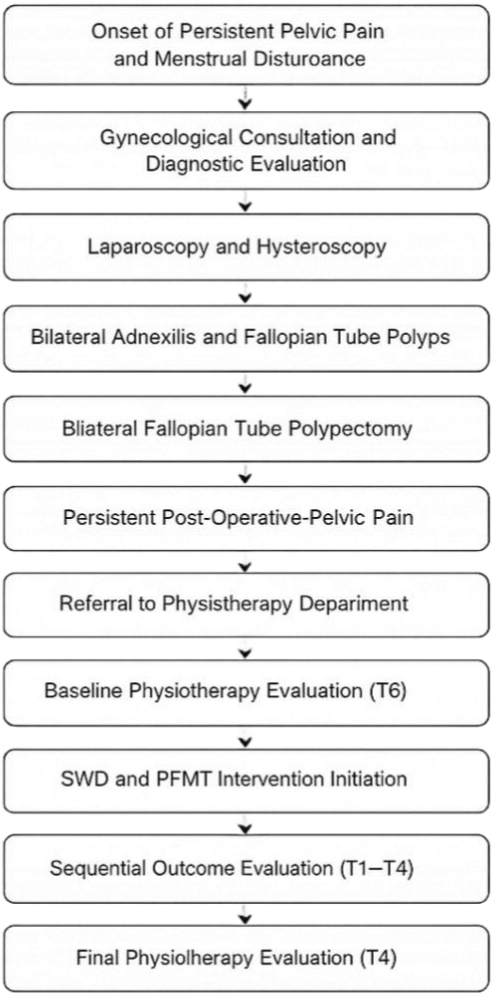

Figure 1. Clinical Timeline of Diagnostic Evaluation, Surgical Management, and Physiotherapy Intervention

Figure 1. clinical timeline above summarizes the sequence of diagnostic evaluation, surgical management, physiotherapy intervention, and clinical outcome progression throughout the rehabilitation period. This timeline was included to improve reporting transparency according to CARE guideline recommendations.

Written informed consent was obtained from the patient for participation and publication of anonymized clinical information and accompanying images**.** All patient-identifiable information was removed to maintain confidentiality and ethical compliance during manuscript preparation.

Results

Clinical outcomes were evaluated sequentially from baseline assessment (T0) until the final physiotherapy session (T4) to determine changes in pelvic pain intensity and functional limitation following the combined Short-Wave Diathermy (SWD) and Pelvic Floor Muscle Training (PFMT) intervention program. Outcome assessment focused on changes in pain intensity using the Numeric Rating Scale (NRS) and functional impact using the Pelvic Pain Impact Questionnaire (PPIQ).

To improve clarity and consistency of pain outcome reporting, the progression of resting pain, tenderness pain, and movement pain across all intervention sessions is summarized in Table 2. The table was included to demonstrate the sequential clinical response observed throughout the rehabilitation period.

Table 2. Changes in Numeric Rating Scale (NRS) Scores During Intervention

Pain Parameter	T0	T1	T2	T3	T4	Total Reduction
Resting pain	6	5	3	2	0	−6
Tenderness pain	6	5	4	2	1	−5
Movement pain	7	5	3	2	1	−6

As presented in Table 2, progressive reductions in pain intensity were observed across all pain parameters throughout the intervention period. Resting pain demonstrated complete resolution at the final session, while movement pain and tenderness pain also showed substantial reductions after completion of five physiotherapy sessions. The most prominent improvement occurred between T1 and T3, particularly in movement-related pain during transitional activities and prolonged sitting tolerance.

Clinically, gradual symptom improvement was observed beginning at the second treatment session (T2), particularly during transitional movement and prolonged sitting activities. By the final session (T4), the patient reported improved tolerance during daily functional activities and reduced discomfort during movement-related tasks. No adverse events, excessive pain exacerbation, thermal discomfort, dizziness, or exercise intolerance were identified throughout the intervention period.

To evaluate the multidimensional functional impact of pelvic pain, the PPIQ was administered sequentially during the intervention period. The following scoring interpretation was included to facilitate understanding of the functional severity classification used in this study.

Table 3. Interpretation of Pelvic Pain Impact Questionnaire (PPIQ) Scores

Score	Interpretation
0	No difficulty
1	Mild difficulty
2	Moderate difficulty
3	Severe difficulty
4	Very severe difficulty

Higher PPIQ scores indicate greater pelvic pain-related functional limitation and quality-of-life impairment.[15] Detailed changes in each functional domain throughout the rehabilitation period are summarized in Table 4.

Table 4. Changes in Pelvic Pain Impact Questionnaire (PPIQ) Scores During Intervention

Functional Indicator	T0	T1	T2	T3	T4
Energy level	3	3	2	2	2
Mood	3	3	3	2	2
Sleep quality	3	3	2	1	1
Bowel and digestive function	2	1	1	0	0
Sitting tolerance >20 minutes	3	2	2	2	1
Ability to perform daily activities	2	2	1	1	0
Ability to perform physical activity	3	3	2	1	1
Ability to wear certain clothing	1	1	1	1	1
Total Score	20	18	14	10	8

Table 4 demonstrates progressive improvement in pelvic pain-related functional limitation across multiple domains during the intervention period. The total PPIQ score improved from 20 at baseline to 8 at the final evaluation, indicating substantial reduction in pain-related disability and improvement in functional capacity. Functional improvements were particularly observed in sleep quality, sitting tolerance, bowel function, physical activity participation, and daily activity performance.

At baseline, the patient demonstrated considerable impairment in multiple functional domains, particularly energy level, mood, sleep quality, prolonged sitting tolerance, and physical activity participation. Sequential improvement was observed in most indicators throughout the rehabilitation process. Sleep quality improved from severe difficulty at baseline to mild difficulty at T4, while bowel and digestive function improved completely by T3 and remained stable thereafter. Daily activity performance also improved progressively, reaching a score of 0 at the final evaluation, indicating absence of significant activity limitation in this domain.

Functional improvements were also identified in prolonged sitting tolerance and physical activity participation, both of which demonstrated gradual reduction in symptom severity during the intervention period. However, the ability to wear certain clothing demonstrated minimal change and remained stable at mild difficulty throughout all evaluations. Overall, the sequential reduction in PPIQ scores suggested improvement not only in pain intensity but also in multidimensional aspects of functional performance and quality of life.

To improve transparency of clinical progression and facilitate future graphical conversion, the outcome progression observed during rehabilitation is summarized on Figure 2.

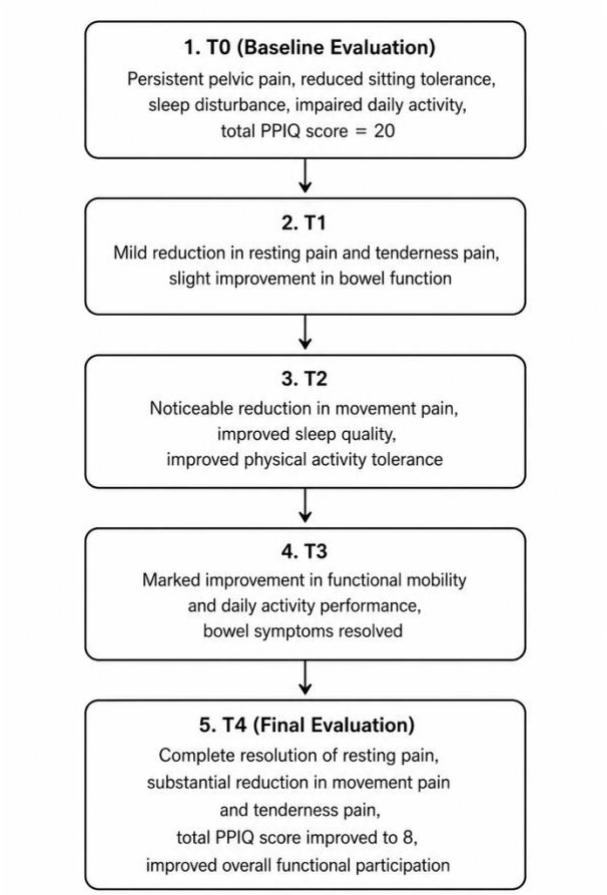

Figure 2. Clinical Outcome Progression During Combined Short-Wave Diathermy and Pelvic Floor Muscle Training Intervention

The clinical flowchart above summarizes the sequential progression of pain reduction and functional improvement observed from baseline evaluation until completion of the physiotherapy program. The flowchart was included to improve clarity of outcome reporting according to CARE guideline recommendations. Because long-term follow-up assessment was not available, sustainability of clinical improvement and recurrence risk after completion of physiotherapy intervention could not be determined.

Discussion

This case report demonstrated that the combination of Short-Wave Diathermy (SWD) and Pelvic Floor Muscle Training (PFMT) was associated with clinically meaningful improvements in pelvic pain intensity and functional performance in a patient with post-polypectomy adnexitis. Following five physiotherapy sessions, reductions were observed across all Numeric Rating Scale (NRS) parameters, including resting pain, tenderness pain, and movement pain. In parallel, the Pelvic Pain Impact Questionnaire (PPIQ) score improved progressively from 20 to 8, indicating reduced pain-related disability and improved daily functional capacity. These findings suggest that integrated physiotherapy rehabilitation may contribute positively to multidimensional symptom management in patients with chronic pelvic pain associated with gynecological inflammatory conditions.

The reduction in pain intensity observed in this case may be associated with the physiological effects of pulsed SWD on nociceptive modulation and tissue recovery. Chronic pelvic pain associated with adnexitis frequently involves persistent inflammatory stimulation, peripheral nociceptor sensitization, muscle guarding, and altered neuromuscular activity within the lumbopelvic region.[6,9] Pulsed SWD has been reported to improve local circulation, reduce muscle spasm, increase tissue metabolism, and facilitate pain modulation through neurophysiological inhibition mechanisms.[12,13] Electromagnetic stimulation generated by SWD may also influence pain threshold response and nociceptive transmission pathways, thereby contributing to progressive pain reduction during movement and resting conditions.[26] These mechanisms may partially explain the sequential reduction in resting pain, tenderness pain, and movement-provoked pain observed throughout the intervention period.

The relatively rapid improvement observed after five physiotherapy sessions may also be associated with the integration of active rehabilitation through PFMT and lumbopelvic stabilization exercise. Chronic pelvic pain is increasingly recognized as a condition involving impaired coordination between the pelvic floor muscles, diaphragm, abdominal musculature, and deep spinal stabilizers.[10] Dysfunction within this integrated neuromuscular system may contribute to impaired pelvic stability, altered postural control, and persistence of pain during movement-related activities.[14] In this case, exercises such as pelvic tilting, diaphragmatic breathing, bridging, bird dog, and cat-cow stretch were selected to improve neuromuscular coordination, pelvic floor activation, and lumbopelvic movement control.[27] These exercises may facilitate co-contraction mechanisms between the pelvic floor musculature and core stabilizers, thereby improving dynamic pelvic stability and reducing movement-related pain provocation.[15,16]

Previous studies have demonstrated that PFMT combined with breathing control and stabilization exercise may improve pain perception, physical function, and quality of life in women with pelvic floor dysfunction and chronic pelvic disorders.[14,16,28] Although most previous evidence has focused on urinary dysfunction, nonspecific chronic pelvic pain, or endometriosis rather than post-polypectomy adnexitis specifically, the underlying rehabilitation principles remain relevant because chronic pelvic pain commonly involves shared musculoskeletal and neuromuscular dysfunctions.[10] Therefore, this case contributes preliminary evidence supporting the potential role of integrated physiotherapy rehabilitation in women experiencing persistent pelvic symptoms following gynecological intervention.

An important finding in this report was that functional improvement occurred concurrently with pain reduction. Improvements were identified in sitting tolerance, sleep quality, bowel function, physical activity participation, and daily activity performance. These findings suggest that the intervention may have influenced not only pain perception but also broader dimensions of functional performance and quality of life. Chronic pelvic pain is widely recognized as a multidimensional condition involving interaction between biological, psychological, and social factors.[10] Persistent pain may contribute to movement fear, emotional stress, sleep disturbance, decreased physical activity, and fear-avoidance behavior, all of which may perpetuate long-term functional disability.[29] Consequently, rehabilitation approaches targeting both symptom reduction and movement restoration are considered essential within women's health physiotherapy practice.

The biopsychosocial rehabilitation perspective may further explain the multidimensional improvements observed in this case. Reduction in pain intensity likely facilitated improved movement confidence and reduced protective movement behavior, allowing the patient to gradually resume functional activities with less discomfort**.** In addition, supervised physiotherapy intervention may have contributed to therapeutic reassurance, improved self-efficacy, and better body awareness during movement performance.[29] These mechanisms may partially explain improvements observed in mood, energy level, and physical activity participation throughout the intervention period. However, because psychological outcomes were not objectively measured, these interpretations should be approached cautiously.

Another important consideration is the possibility of natural post-operative recovery contributing to symptom improvement. Because physiotherapy intervention was initiated after surgical management, some degree of spontaneous tissue recovery may have occurred independently from the rehabilitation program. Therefore, the observed clinical improvement cannot be attributed solely to SWD and PFMT intervention. Placebo response, therapeutic alliance, and increased clinical attention may also influence perceived symptom improvement in chronic pain rehabilitation settings.[30] Acknowledging these factors is important to maintain balanced interpretation and avoid overestimation of intervention effects within a single-case design.

Interestingly, despite improvement in pain and functional performance, structural abnormality remained present because previous hysterosalpingography evaluation still demonstrated right fallopian tube non-patency. This finding suggests that physiotherapy intervention in this case primarily addressed secondary musculoskeletal and functional consequences associated with pelvic inflammation rather than directly reversing gynecological structural pathology. This observation supports current understanding that functional recovery and symptom improvement may occur despite persistence of structural abnormality.[10] Consequently, physiotherapy should be considered a complementary component within multidisciplinary chronic pelvic pain management rather than a replacement for gynecological intervention.

Compared with previous reports involving electrotherapy or stabilization exercise in musculoskeletal pain conditions, this case provides a more specific women's health physiotherapy perspective focusing on post-polypectomy adnexitis and chronic pelvic pain rehabilitation.[13,16,31] Although evidence regarding SWD application in gynecological rehabilitation remains limited, this report suggests that combining symptom-modulating electrotherapy with active pelvic floor rehabilitation may provide clinically relevant benefits in selected patients. The integration of passive and active rehabilitation strategies may be particularly valuable because pain reduction alone may not sufficiently restore neuromuscular coordination and functional movement stability in chronic pelvic pain conditions.[32]

This case report has several limitations that should be acknowledged. First, the study involved only one patient, thereby limiting external validity and generalizability to broader populations. Second, the intervention period consisted of only five physiotherapy sessions without long-term follow-up evaluation. Consequently, sustainability of treatment effects and recurrence risk could not be determined. Third, outcome assessment primarily relied on subjective patient-reported measures without additional objective evaluation such as pelvic floor strength assessment, electromyography, movement analysis, or lumbopelvic range-of-motion testing. Fourth, no control condition was available, making it difficult to differentiate intervention effects from spontaneous recovery, placebo response, or natural healing processes. Finally, psychological variables associated with chronic pelvic pain were not formally assessed despite their potential contribution to symptom persistence and rehabilitation outcomes.

Despite these limitations, this report provides several practical implications for women's health physiotherapy practice. Integrated rehabilitation combining pain modulation, pelvic floor rehabilitation, breathing control, and lumbopelvic stabilization may be considered as part of conservative multidisciplinary management in patients with persistent pelvic pain following gynecological intervention. Future studies using controlled experimental designs, objective neuromuscular assessment, larger sample sizes, and longer follow-up periods are required to strengthen evidence regarding the effectiveness of combined SWD and PFMT in chronic pelvic pain rehabilitation associated with gynecological inflammatory conditions.

Conclusion

This case report demonstrated that the combination of Short-Wave Diathermy (SWD) and Pelvic Floor Muscle Training (PFMT) was associated with clinically meaningful reductions in pelvic pain and improvements in functional performance in a patient with post-polypectomy adnexitis. Following five physiotherapy sessions, reductions were observed in resting pain, tenderness pain, movement-related pain, and pelvic pain-related functional limitation as measured using the Numeric Rating Scale (NRS) and Pelvic Pain Impact Questionnaire (PPIQ).

The findings suggest that integrated physiotherapy rehabilitation combining electrotherapeutic pain modulation and active lumbopelvic stabilization exercise may provide beneficial complementary management for chronic pelvic pain associated with gynecological inflammatory conditions. Improvements in sitting tolerance, sleep quality, physical activity participation, and daily functional performance further emphasize the importance of multidimensional rehabilitation approaches within women's health physiotherapy practice.

However, because this report involved only a single patient with short-term follow-up and predominantly subjective outcome measures, the findings should be interpreted cautiously and cannot be generalized broadly. Future studies using controlled experimental designs, objective neuromuscular assessment, larger sample sizes, and longer follow-up periods are required to establish stronger evidence regarding the effectiveness of combined SWD and PFMT in chronic pelvic pain rehabilitation associated with gynecological inflammatory conditions.

Study Limitation

Several limitations should be considered when interpreting the findings of this case report. First, the study involved only one patient, thereby limiting generalizability to broader clinical populations. Second, no long-term follow-up assessment was available after completion of the physiotherapy intervention; therefore, sustainability of clinical improvement and recurrence risk could not be

determined. Third, outcome evaluation primarily relied on subjective patient-reported measures without additional objective assessment such as lumbopelvic range-of-motion testing, pelvic floor strength evaluation, electromyography, or movement analysis. Fourth, because no control condition was included, intervention effects could not be separated completely from spontaneous post-operative recovery, placebo response, or therapeutic alliance effects. Finally, psychosocial and psychological variables associated with chronic pelvic pain were not formally evaluated despite their potential influence on rehabilitation outcomes.

Clinical Implication

This case report highlights the potential role of integrated physiotherapy rehabilitation in managing chronic pelvic pain associated with gynecological inflammatory conditions. Combination therapy involving SWD, PFMT, breathing control, and lumbopelvic stabilization exercise may be considered as part of conservative multidisciplinary management for patients experiencing persistent pelvic pain following gynecological intervention. The findings also emphasize the importance of addressing chronic pelvic pain not only from a structural gynecological perspective but also through functional and biopsychosocial rehabilitation approaches within women's health physiotherapy practice.

Patient Perspective

The patient reported gradual improvement in pelvic pain intensity and movement comfort throughout the physiotherapy program. The patient particularly experienced improved sitting tolerance, better sleep quality, and greater confidence in performing daily activities after completing the intervention sessions. The patient also expressed satisfaction with the rehabilitation program because the exercises were perceived as manageable and progressively improved functional comfort during movement activities.

Author Contribution

Tsania Haifa' Kurniahadi: Conceptualization, Literature review, Data curation, Formal analysis, Investigation, Writing original draft.
Tiara Fatmarizka: Supervision, Methodology, Validation, Writing review and editing.
Sudarmi: Clinical supervision, Project administration, Final approval of the manuscript.

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Conflict of Interest Statement

The authors declare that there are no conflicts of interest related to the publication of this case report.

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Ethics Statement

Ethical approval was not required because this study was conducted as a clinical case report within routine physiotherapy management and did not involve experimental intervention beyond standard clinical practice. Written informed consent was obtained from the patient for participation and publication of anonymized clinical information and accompanying images. All patient-identifiable information was removed to maintain confidentiality and ethical compliance during manuscript preparation. This case report was prepared in accordance with CARE guideline recommendations for clinical case reporting.

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