SSR Journal of Medical Sciences (SSRJMS)

OPEN ACCESS

Volume 1, Issue 2, 2024 Journal homepage: https://ssrpublisher.com/ssrjms/ ISSN: 3049-0375
Email: office.ssrpublisher@gmail.com

Spinal Anaesthesia for Hysteroscopic Myomectomy: Efficacy and Safety in a Fertility Hospital in South-South, Nigeria

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Received: 21.12.2024 | **Accepted:** 29.12.2024 | **Published:** 29.12.2024

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DOI: *10.5281/zenodo.15389319*

Abstract **Original Research Article**

Background: Submucosal uterine fibroids are a leading cause of abnormal uterine bleeding and infertility in women of reproductive age. Hysteroscopic myomectomy has emerged as a minimally invasive, uterus-sparing technique for their management.
Aim: This study evaluates the efficacy and safety of spinal anaesthesia for hysteroscopic myomectomy performed over four years in a busy private health facility in Port Harcourt, Nigeria.
Methods: A retrospective review was conducted on 150 women who underwent hysteroscopic myomectomy between January 2019 and December 2023. Data were extracted on demographics, indications, intraoperative parameters postoperative complications, hospital stay, analgesic requirements, and Descriptive statistics were used to summarise the findings.
Results: The mean age of patients was 39.3 ± 6.2 years. Abnormal uterine bleeding (53.3%) and pelvic pain (36.7%) were the most common indications. Spinal anaesthesia using 10mg heavy bupivacaine with 25micrograms of fentanyl was administered in all the cases, and the mean fluid deficit remained below 1000 mL in all cases. No major anaesthetic complications except pruritus from glycine and or fentanyl. All patients were discharged within three days.
Conclusion: Hysteroscopic myomectomy, supported by careful anaesthetic planning and perioperative management, is a safe and effective option for the treatment of submucosal fibroids. This study affirms its feasibility and favourable outcomes in resource-constrained settings, advocating for its broader adoption in similar environments.

Keywords: Spinal Anaesthesia, Hysteroscopic Myomectomy, Submucosal Fibroids.

Citation: Otokwala, J. G., & Uyoata, J. U. (2024). Spinal anaesthesia for hysteroscopic myomectomy: Efficacy and safety in a fertility hospital in South-South, Nigeria. SSR Journal of Medical Sciences, 1(2), 41-45.

INTRODUCTION

Submucosal fibroids, a subtype of uterine fibroids, are a significant gynaecological concern that can substantially impact a woman's physical, emotional, and reproductive health. These fibroids, which are located within the uterine cavity, are known to cause a variety of distressing symptoms, such as abnormal uterine bleeding, pelvic pain, and infertility. The severity of these symptoms can vary, but in many cases, they can significantly impair a woman's ability to maintain a normal, healthy lifestyle. The complications associated with submucosal fibroids can negatively affect a woman's quality of life by leading to chronic discomfort, emotional distress, and, in some cases, the inability to conceive. Therefore, the management of these fibroids is crucial not only for improving a woman's physical health but also for enhancing her overall well-being and reproductive potential[1,2].

Historically, the treatment of submucosal fibroids often involved traditional open surgery, which, despite its efficacy, came with substantial drawbacks. These included long recovery times, significant postoperative discomfort, and a higher risk of complications. In recent years, however, hysteroscopic myomectomy has emerged as the preferred treatment for submucosal fibroids. This minimally invasive surgical technique allows for the removal of fibroids through the cervix using a hysteroscope, a thin, lighted instrument that provides clear visualisation of the uterine cavity. Hysteroscopic myomectomy offers several advantages over traditional surgery, including reduced recovery time, less postoperative pain, and a lower risk of complications, such as infections or adhesions. These benefits have led to the increasing adoption of hysteroscopic myomectomy as a first-line treatment for women with symptomatic submucosal fibroids[3,4].

However, the success of hysteroscopic myomectomy is not

solely determined by the technology or the skill of the surgeon performing the procedure. It is equally dependent on the quality of the perioperative care provided. Perioperative care encompasses all stages of a patient's surgical journey, from preoperative planning to postoperative recovery, and plays a vital role in the overall success of the procedure[5]. A well-coordinated and comprehensive perioperative management plan, which includes preoperative evaluation, anaesthetic technique and postoperative monitoring, is essential to optimise patient outcomes[6],[7].

Preoperative assessment typically involves a thorough history to rule out allergy to local anaesthetics, opioid and latex and clinical assessment. Preoperative assessment could be done on the phone and basic laboratory investigations. In some cases, medication may be administered prior to surgery to improve the surgical environment. For example, misoprostol can be used for cervical priming, and gonadotropin-releasing hormone (GnRH) agonists or antagonists may be prescribed to reduce the size of the fibroids and thin the endometrial lining. These treatments can improve the visibility during surgery and make it easier to access and remove the fibroids. However, these preoperative medications are not without limitations and may not be effective in cases involving significantly enlarged uteri or fibroids that are deeply embedded within the uterine wall[8],[9].

The choice of anaesthesia is another important consideration in hysteroscopic myomectomy. Depending on the patient's preferences, and the characteristics of the fibroid. Anaesthesia must be carefully tailored to ensure the patient's comfort while maintaining optimal conditions for the surgeon to perform the operation safely and efficiently[10]. Hysteroscope requires the use of higher insulflation pressures using irrigation fluids like normal saline or glycine.

Intraoperative care also plays a crucial role in the success of hysteroscopic myomectomy. Ensuring adequate hemostasis (control of bleeding) during the procedure is a key factor in minimizing complications and improving surgical outcomes. In some cases, surgeons may also use electrosurgical resectoscopes, lasers, or mechanical morcellators to excise the fibroids. The use of these tools requires precision and careful intraoperative coordination to prevent injury to surrounding tissues and ensure the best possible outcomes for the patient[11],[12].

Postoperative care is equally important to ensure a smooth recovery and minimize the risk of complications. Monitoring the patient for signs of infection, managing pain effectively, and providing appropriate discharge instructions are all critical aspects of postoperative care. Furthermore, long-term follow-up may be necessary to monitor for the recurrence of fibroids or other complications, such as adhesions[13].

Despite the growing use of hysteroscopic myomectomy in Nigeria, research on the perioperative management strategies employed in different healthcare facilities remains limited. Most of the available studies focus on general outcomes or surgical techniques, with little attention paid to the specific perioperative protocols followed by hospitals. This study seeks to fill that gap by evaluating the perioperative management practices at Gynaescope Specialist Hospital in Port Harcourt, Nigeria.

METHODS

This retrospective descriptive study was conducted at Gynaecoscope Specialist Hospital, Port Harcourt, Nigeria, between period 01 January 2019 to December 2023. The study aimed to evaluate perioperative management strategies and postoperative outcomes in women who underwent hysteroscopic myomectomy for submucosal fibroids. Ethical approval was obtained from the Gynaecoscope Specialist Hospital Health Research Ethics Committee and the Ministry of health. All patients included had a confirmed diagnosis of submucosal uterine fibroids through preoperative imaging (transvaginal or transabdominal ultrasound), clinical evaluation, and were deemed fit for surgery.

A total of 150 patient records were reviewed. Data extracted included age, duration of anaesthesia, complications and postoperative recovery metrics. Exclusion criteria comprised patients with incomplete documentation, those who had concurrent gynaecologic procedures, or who were deemed unfit for surgery based on anaesthetic risk assessments.

Preoperative Evaluation and Risk Stratification: All patients underwent a standard preoperative assessment including full blood count, coagulation profile, serum electrolytes, and pelvic imaging. Anaesthetic risk was categorised using the American Society of Anesthesiologists (ASA).

Anaesthetic Techniques and Monitoring: The choice of anaesthesia was tailored based on fibroid complexity, duration of surgery, and patient comorbidities. Standard intraoperative monitoring included non-invasive blood pressure, pulse oximetry, electrocardiography, and capnography. All patients had intravenous access and minimal preloading with crystalloids to maintain haemodynamic stability.

Fluid Management and Intraoperative Protocols: Hysteroscopic myomectomy was performed using normal saline or glycine as the distension medium. Fluid input and output were meticulously recorded, and procedures were halted if fluid deficit exceeded 1000 mL or duration of resection.

Postoperative Management and Follow-Up: Pain control was managed using a multimodal strategy: oral paracetamol and NSAIDs were initiated postoperatively, with parenteral analgesics (tramadol or diclofenac) reserved for breakthrough pain. Antiemetic ondansetron were administered as needed, although routine documentation of postoperative nausea and vomiting (PONV) was inconsistent. Patients were monitored for at least 24 hours post-surgery, with extended stays for complications or comorbidities. Discharge criteria included stable vital signs, effective pain control with oral medication, and absence of active bleeding or infection. Data were entered into SPSS version 25.0. Descriptive statistics were used to summarise demographic variables, clinical characteristics, intraoperative interventions, and postoperative outcomes. Results were compared with

findings from existing literature. Statistical significance was considered at $p < 0.05$.

RESULTS

A total of 150 women who underwent hysteroscopic myomectomy for submucosal fibroids between January 2019 and December 2023 were included in this study. The majority of patients were between 31–40 years (30.0%) and 41–50 years (26.7%), with the most common presenting symptom was abnormal uterine bleeding (53.3%), followed by pelvic pain (36.7%) and infertility (10.0%).

Table 1: Demographic and Clinical Characteristics

Variable	Frequency (n)	Percentage (%)
Age (years)		
18–30	35	23.33
31–40	45	30.00
41–50	40	26.67
51–60	20	13.33
>60	10	6.67
Symptoms		
Abnormal uterine bleeding	80	53.33
Pelvic pain	55	36.67
Infertility	15	10.00
Fibroid Size (cm)		
<3	50	33.33
3–5	75	50.00
>5	25	16.67

Table 2. Spinal Block Characteristics During Hysteroscopic Myomectomy

Parameter	Value
Maximum sensory block level	T8
Bromage motor block score	3 (complete block)
Time to sensory regression to S2	185 minutes
Duration of procedure (mean)	45 minutes

Spinal anaesthesia provided effective and sustained anaesthetic coverage for hysteroscopic myomectomy. The sensory block extended to the T8 dermatome, ensuring adequate coverage for pelvic procedures. A Bromage score of 3 indicated complete motor blockade, contributing to patient immobility and optimal surgical conditions. Sensory regression to the S2 level occurred at a mean of 185 minutes, offering a comfortable margin above the average procedure time of 45 minutes. These findings support the safety, adequacy, and clinical suitability of spinal anaesthesia for selected cases, particularly those with moderate surgical complexity and shorter operative duration.

Table 3: Postoperative Recovery and Long-Term Outcomes

Pruritus	128	85.3%
Hypotension	2	1.3%
Length of Hospital Stay (days)		
1–3	85	56.67
4–7	45	30.00
>7	20	13.33

Among the patients who underwent hysteroscopic myomectomy, pruritus was the most frequently reported postoperative complication, affecting 85.3% of cases. This was likely associated with the use of intrathecal or perioperative opioids in patients who received spinal anaesthesia. Hypotension, observed in only 1.3% of cases, was mild and managed effectively without escalation of care. Hospital stay was brief for most patients: 56.7% were discharged within 1–3 days, 30.0% within 4–7 days, and 13.3% after more than 7 days.

DISCUSSION

This study presents a four-year review of hysteroscopic myomectomy for submucosal fibroids done under spinal anaesthesia with fentanyl. and contributes valuable evidence on its perioperative and postoperative safety profile within a Nigerian clinical context. The findings affirm that hysteroscopic myomectomy, when performed with meticulous preoperative planning, modern anaesthetic techniques, and strict intraoperative safety protocols, offers significant clinical benefits including reduced blood loss, minimal postoperative discomfort, and shortened hospitalisation.

The demographic profile of the study population is consistent with the known epidemiology of uterine fibroids. The majority of patients were between 31–50 years, which corresponds with peak reproductive age and supports existing data indicating that fibroids are most symptomatic during a woman's reproductive years[1]. The predominant presenting symptom, abnormal uterine bleeding (53.3%), reflects the classical impact of submucosal fibroids on endometrial architecture, causing menorrhagia, dysmenorrhoea, and intermenstrual bleeding[2]. The incidence of pelvic pain (36.7%) and infertility (10.0%) further underscores the significant reproductive and quality-of-life burden imposed by fibroids[3].

The use of regional (spinal) anaesthesia in this study demonstrates its feasibility and safety in select patients undergoing short, low-complexity resections. Studies have shown that spinal anaesthesia in hysteroscopic surgery may enhance early recovery, reduce postoperative nausea and vomiting (PONV), and improve patient satisfaction[7].Electrosurgical resectoscopes were used in these procedures, underscoring their pivotal role in fibroid dissection with minimal thermal injury to surrounding endometrium. Critically, the surgical team closely monitored intrauterine distension fluid balance using normal saline or glycine, with none of the patients exceeding the 1000 mL deficit threshold. This is particularly important as unchecked fluid absorption can lead to dilutional hyponatraemia, pulmonary oedema, and, in severe cases, TURP-like syndrome[9]. Cautious use of preloading fluid is advocated to reduce provoking fluid overload.

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Hospital stay was ≤3 days for 56.7% of patients, reaffirming the minimally invasive nature of hysteroscopic myomectomy and its compatibility with short-stay or ambulatory surgical models[2,11,13]. From a health systems perspective, this study demonstrates that safe, effective hysteroscopic surgery is achievable in low- and middle-income countries with trained personnel, structured perioperative pathways, and investment in endoscopic infrastructure. The integration of anaesthesia protocols with surgical planning and nursing care was pivotal to the success of this programme.

LIMITATIONS

The retrospective nature of the study limited control over data completeness and the inclusion of nuanced clinical parameters such as body mass index, parity, or socioeconomic status. Postoperative complications like PONV and thromboembolic events were not systematically captured.

RECOMMENDATIONS

Future studies should consider prospective design

CONCLUSION

Hysteroscopic myomectomy under spinal anaesthesia is effective and safe.

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