

# Anesthesia for abdominal myomectomy - A five years audit of a Federal Medical Centre in Owerri, Nigeria.

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## Abstract

**Background:** Anesthesia for abdominal myomectomy remains a challenge in the developing countries. Easy adaptability and proper utilization of available resources are essential features desired for the Anesthetists working in developing countries, in there to provide anesthetic services. Thus, there is a need to audit the anesthetic practice for abdominal myomectomy over the period of 5 years in our institution.

**Methods:** This retrospective study was done, following the approval of Research and Ethics Committee of Federal Medical Centre Owerri. The surgical theatre registers recordings were used, and we reviewed all our patients who had abdominal myomectomy from 1st January 2009 to 31st December 2013 in Federal Medical Centre Owerri, Imo State - Nigeria, and the type of anesthesia they received were recorded.

**Results:** A total of 202 anesthetic services were offered for abdominal myomectomy during the period of January 1<sup>st</sup>,2009 to December 31<sup>st</sup>,2013 in our Institution. Seventy nine percent of them were general anesthesia, while 15%, 4.5% and 1.5% were spinal anesthesia, spinal with general anesthesia combination, and combination of spinal and epidural anesthesia respectively.

**Conclusion:** This study revealed that in our Institution the most available anesthetic service for abdominal myomectomy is general anesthesia. In the recent time, combined spinal epidural anesthesia is emerging, and this offers the benefit of analgesia even in prolong surgery and post-operative period.

*Accepted on June 20, 2017*

## Introduction

Abdominal myomectomy is a surgical removal of fibroid from uterine wall, with subsequent reconstruction and repair of the incisions made on the uterine and abdominal walls [1,2]. This is facilitated using anesthesia, which could be a general or regional anesthesia [3,4].

Anesthesia for abdominal myomectomy remains a challenge in the developing countries because of several factors, which includes the growing population and number of persons presenting with uterine fibroid, and the need for surgical and anesthesia intervention and socioeconomic issues like religious beliefs, literacy, poverty and poor remuneration of the Anesthetists [5]. Other influencing factors are the insufficient number of trained physician anesthetists, nurse anesthetists and technicians, poor operation theatre infrastructure and unavailability of equipment, lifesaving drugs and anesthetic agents [5]. Poor educational resources like non-popularity of anesthesia as a specialty, lack of proper audit, research, publications and guidelines and inadequate water, transportation, electricity, oxygen and blood banks are also found to be contributory to the challenges [5].

The problems of human, technical, investment and educational resources are the main factors that require more attention before developing safe anesthesia care services for abdominal myomectomy in the developing countries [5,6]. Patients often present very late with huge uterine fibroid for surgical treatment because of fear and poor socioeconomic status, with strong

choice of retaining their uterus and possibility of being able to bear children after surgery [1,7].

The type of anesthesia given to the patient during abdominal myomectomy may be affected by the level of training of the medical personnel, poor operation theatre infrastructure and unavailability of equipment, lifesaving drugs and anesthetic agents [5,8]. Sometimes the physicians also face problems associated with resource limited working environment like unreliable electricity, unavailability of compressed oxygen and other gases, sophisticated machines and modern drugs [9-11].

Easy adaptability and proper utilization of available resources are essential features desired for the Anesthetists working in developing countries, in other to be able to provide anesthetic services [10,11]. Thus, there is a need to audit the anesthetic practice for abdominal myomectomy over the period of five years in our Institution, and formulate possible practice guideline.

## Methodology

After obtaining approval from the Research and Ethics Committee of Federal Medical Centre Owerri, Imo State (FMC/OW/HREC/15), we reviewed the data of patients who had abdominal myomectomy from 1<sup>st</sup> January 2009 to 31<sup>st</sup> December 2013 in our institution, by accessing the departmental hospital records. The study was done over the period of 6 months, and we reviewed the type of anesthesia given to all the patients who

had abdominal myomectomy over the period of 5 years studied and data collected were entered Excel Spread sheet version 2011 (Microsoft Corp, Redmond, WA). Tables and figures were used to present the results, and expressed as proportion and percentages.

**Results**

A total of 202 anesthetic services were offered for abdominal myomectomy during the period of January 1<sup>st</sup>, 2009 to December 31<sup>st</sup>, 2013 in our institution.

Figure 1 shows the yearly distribution of anesthetic care for abdominal myomectomy. In 2009 a total of 27 anesthetic services were provided for abdominal myomectomy, however 78% of that services were general anesthesia, while 15% and 7% of such services were in the form of subarachnoid block alone and in combination with general anesthesia respectively. In 2010 out of the 28 patients were anesthetized for abdominal myomectomy, 71.4% received general anesthesia, 14.3% had subarachnoid block alone and 14.3% received subarachnoid block in combination with general anesthesia. In 2011 general anesthesia (77%) also dominated over spinal anesthesia alone (21%) and spinal anesthesia combined with general anesthesia (2%) in the 44 anesthetic services that were rendered for abdominal myomectomy. In 2012, out of 60 patients that received anesthesia for abdominal myomectomy, 82% were given general anesthesia, while spinal anesthesia alone and in combination with general anesthesia were given to 15% and 3% of the patients respectively. In 2013 general anesthesia, spinal anesthesia and combined spinal-epidural anesthesia were given to 81%, 12%, and 7% of the 44 patients who had abdominal myomectomy respectively (Figure 1).

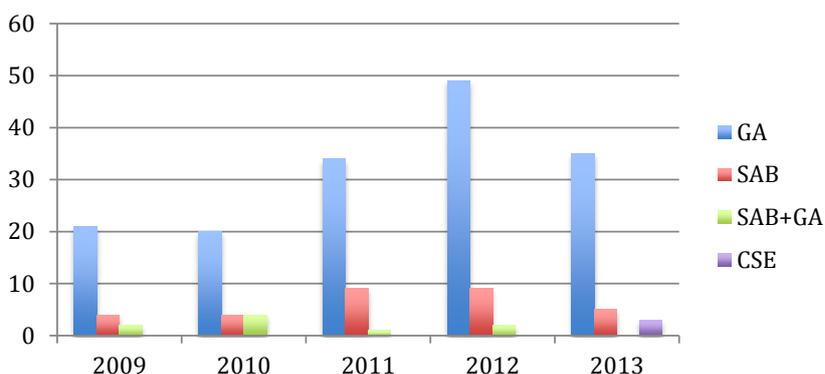
Figure 2 shows the total distribution of anesthetic services over the period of study. The total of 79% of the patients received general anesthesia for abdominal myomectomy, while 15% had spinal anesthesia. Also 4.5% of the abdominal myomectomies were done with spinal anesthesia in combination with general anesthesia, while 1.5% of the cases were with a combination of spinal anesthesia and epidural anesthesia (Figure 2).

**Discussion**

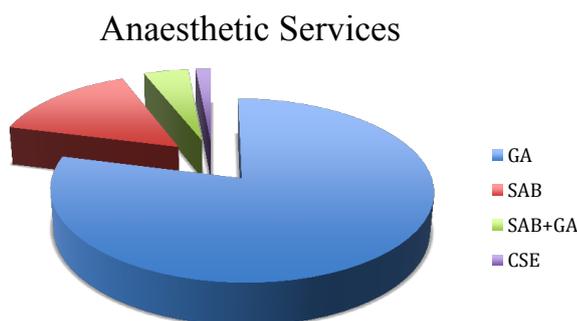
Safe anesthesia and surgery initiative is focused on reducing the morbidity and mortality associated with surgery, and helps improve outcome [12,13]. However, this goal remains a challenge in developing countries because of limited manpower, poor operation theatre infrastructure and unavailability of equipment, lifesaving drugs and anesthetic agents [5,8].

Anesthesia service for abdominal myomectomy can be in the form of general, spinal, or epidural anesthesia [3,4]. Sometimes different techniques like general and spinal anesthesia or spinal and epidural anesthesia can be combined to achieve the task of ensuring a pain free surgery, especially when surgery is prolonged.

We discovered in our study that, the most common anesthetic service available for patients who had abdominal myomectomy in our Institution was general anesthesia (79%). This is not unusual, as it has been demonstrated in other studies that general anesthesia can be used as a technique of choice in abdominal myomectomy [4,14,15]. In a study that retrospectively audited the indication and outcome of 248 abdominal myomectomies done in University of Maidugiri Teaching Hospital in Nigeria, general anesthesia was found to be one of the choices of anesthesia for their patients [14], however, the rate was not



**Figure 1.** Yearly distributions of anesthetic care for abdominal myomectomy.



**Figure 2.** Total distribution of anesthetic services during the period of study.

indicated. In another study conducted by Aggo et al. [4] in University of Port Harcourt Teaching Hospital, that focused on the differential impact of anesthesia on cortisol level of surgical patients, they observed that there was 53% rate of general anesthesia utilization for abdominal myomectomy. Sinha et al. in their study focused on laparoscopic myomectomy, and found general anesthesia to be the technique of choice [16].

General anesthesia has been found to limit perception of sensations to surgical stimuli, but it does not completely subdue the neuroendocrine response to surgery, even when either the intravenous or inhalational anesthetic agent is used [17]. General anesthesia sometime can be associated with some morbidity like airway mishap, awareness, pain, cardiovascular collapse and respiratory depression. In some environment, lack of equipment and monitors can negatively influence the use of general anesthesia for surgeries [5].

We also observed that some of the patients had their surgeries done with spinal anesthesia (31%). This is not new, as it has been demonstrated in other studies. In a study conducted by Sule et al. [16], spinal anesthesia was demonstrated as a technique for abdominal myomectomy. This was also shown in the study conducted in a tertiary hospital in Nigeria [14]. Spinal anesthesia has the advantage of preventing airway related morbidities associated with general anesthesia, and it's cost effective, however, it can be associated with some complications like hypotension, bradycardia, headache, and urinary retention. Establishing spinal anesthesia service also require one to have resuscitative equipment and drugs, however, this is usually lacking in most health institutions in developing countries [5].

Spinal anesthesia sometimes does not outlast the duration of the surgery, thereby necessitating the need to provide other means of ensuring analgesia and possible hypnosis during the rest of the period of surgery. In our audit, we discovered that some patients (4.5%) received spinal anesthesia in combination with general anesthesia, while some (1.5%) of the audited patients had a combination of spinal and epidural anesthesia.

In the group of patients that had a combination of general and spinal anesthesia, the general anesthesia component was started following the regression of sensory blocks of the spinal anesthesia while the surgery was on going. This could explain why we recorded a high rate of utilization of general anesthesia for abdominal myomectomies (79%), as most clinicians preferred general anesthesia only, with the believe that it can help them maintain a steady management even when it requires them to take into consideration the speed and skill of the surgeon, the size of the uterine fibroid and duration of surgery.

In the group of patients that received the combination of spinal and epidural anesthesia, subarachnoid block was given and epidural catheter inserted without activation. The spinal anesthesia initiates early onset of sensory and motor blocks, necessitating pain free surgery, and following regression of the sensory blocks, epidural anesthesia is activated. This prolongs sensory block and provides analgesia in prolonged surgery, and it can be beneficial in postoperative pain management. This appears to be an emerging anesthetic technique in our environment, as it was observed only in 2013. The technique is also valuable in

our environment where patients present late, with huge uterine fibroid and refusing hysterectomy, with chances of surgery being prolonged [1,8]. However, this technique requires elevated level of training and skill to perform it.

Epidural anesthesia alone is another choice of anesthetic technique for abdominal myomectomy. However, this was not demonstrated in our audit. It has been found to be valuable in providing analgesia during surgery, even in prolonged operation and postoperative period. Local anesthetic agent is injected into the epidural space through the epidural catheter in a continuous infusion or intermittently. However, its onset of sensory block can be delayed, and at times offer patchy sensory blockade. It also requires elevated level of skill to perform the procedure. A different study done in Port Harcourt, Nigeria [4] showed utilization rate of epidural anesthesia for abdominal myomectomy of 47%.

## Conclusion

This study revealed that in our Institution the most available anesthetic service for abdominal myomectomy is general anesthesia. Spinal anesthesia is another option, but in some conditions, it does not outlast the period of surgery, thereby necessitating its combination with another technique. In the recent time, combined spinal epidural anesthesia is emanating, and this offers the benefit of analgesia even in prolong surgery and postoperative period. We strongly recommend epidural anesthesia or its combination with spinal anesthesia for abdominal myomectomy in the absence of any contraindication, considering that this will help to avert all the airway related complications associated with general anesthesia. This practice however requires elevated level or skill and training.

## References

1. Uba FA. Uterine fibroid: Which treatment? Niger Med J. 2011; 52: 149.
2. Stern V. Operations: Spinal anaesthesia versus general anaesthetics – A patient's view. Br Med J 2000; 321: 1606-1607.
3. Aggo AT, Fyनेface-Ogan S, Mato CN. The differential impact of two anesthetic techniques on cortisol levels in Nigerian surgical patients. Niger J Clin Pract. 2012; 15: 68-74.
4. Bharati SJ, Chowdhury T, Gupta N, et al. Anaesthesia in underdeveloped world: Present scenario and future challenges. Niger Med J. 2014; 55: 1-8.
5. Hodges SC, Mijumbi C, Okello M, et al. Anaesthesia services in developing countries: Defining the problems. Anesthesia. 2007; 62: 4-11.
6. Obed JY, Bako B, Kadas S, et al. The benefit of myomectomy in women aged 40 years and above: Experience in an urban teaching hospital in Nigeria. Niger Med J. 2011; 52: 158-162.
7. Okezie O, Ezegwui HU. Management of uterine fibroids in Enugu, Nigeria. J Obstet Gynaecol. 2006; 26: 363-365.
8. Dubowitz G, Evans FM. Developing a curriculum for anaesthesia training in low and middle-income countries. Best Pract Res Clin Anaesthesiol. 2012; 26: 17-21.

9. Petroze RT, Nzayisenga A, Rusanganwa V, et al. Comprehensive national analysis of emergency and essential surgical capacity in Rwanda. *Br J Surg.* 2012; 99: 436-443.
10. Edwards J. Taking the pulse of pulse oximetry in Africa. *Can Med Assoc J.* 2012; 184: 244-245.
11. Mgbakor AC, Adou BE. Plea for greater use of spinal anaesthesia in developing countries. *Trop Doct.* 2012; 42: 49-51.
12. Haynes AB, Weiser TG, Berry WR, et al. Safe Surgery Saves Lives Study Group: A surgical safety checklist to reduce morbidity and mortality in a global population. *N Engl J.* 2009; 360: 491-499.
13. Merry AF, Cooper JB, Soyannwo O, et al. International Standards for a Safe Practice of Anesthesia 2010. *Can J Anesth.* 2010; 57: 1027-1034.
14. Geidam AD, Lawan ZM, Chama C, et al. Indications and outcome of abdominal myomectomy in University of Maiduguri Teaching Hospital: Review of ten years. *Niger Med J.* 2011; 52: 193-197.
15. Sinha M, Chiplonkar S. Anesthesia concerns in laparoscopic myomectomy. *J Gynecol Endosc Surg.* 2011; 2: 18-20.
16. Sule AZ, Isamade ES, Ekwempu CC. Spinal anaesthesia in lower abdominal and limb surgery: A review of 200 cases. *Nig J Surg Res.* 2005; 7: 226-230.
17. Velickovic I, Yan J, Gross JA. Modifying the neuroendocrine stress response. *Semin Anaesth Perioper Med Pain.* 2002; 21: 16-25.

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