Original Article

A study of effect of type of anesthesia on post operative cesarean section pain in Tawam Hospital, Al ain, United Arab Emirates

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Objective: To evaluate the effect of type of anesthesia for cesarean section on postoperative cesarean section pain in Tawam Hospital.

Methodology

A retrospective study of 100 consecutive women undergoing cesarean section in Tawam hospital, Al Ain, UAE from 1st January 2008 to 30 th April 2008. A purpose built performa was used to collect the data including, type of cesarean section, types of anesthesia, intra operative additional analgesia and analgesia used at end of surgery.

Results

Regional anesthesia which included spinal and epidural was given in 59 cases while 41 cases had general anesthesia. Analgesia requirement was lower after regional anesthesia. 52% had a pain score of zero and only 2% had a pain score of six to ten. With general anesthesia, 15% had a pain score of zero, 13% had a pain score from 1-5 and 9% had pain score from 6-10.

Conclusion

Regional anesthesia was associated with less post operative pain after cesarean section. A clinical practice guideline is issued for detailed counseling of patients during their antenatal visits for regional anesthesia for cesarean section. (Rawal Med J 2013;38: 139-142).

Key words: Postoperative pain score, LSCS, NSAIDS.

INTRODUCTION

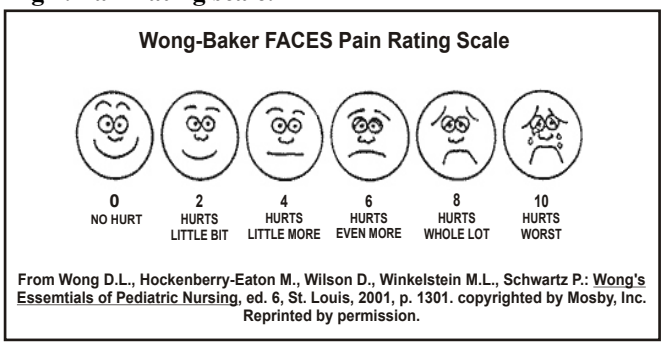
Cesarean section (CS) is the most commonly performed surgical procedure. The strict guidelines for anesthesia have resulted in the dramatic decline in maternal mortality related to anesthesia. In the U.K and USA, regional anesthesia is given to 95% of the patients while only 5% receive general anesthesia.[1,2] The efficacy of regional and general anesthesia for CS has been studied.[3] In Tawam Hospital which is a JCIA accredited hospital, pain is the fifth vital sign according to the JCIA standards and all adult in-patients are assessed for pain. Wong-Baker visual pain chart is used to assess the intensity of pain as perceived by the patient (Fig 1).

For adequate pain relief, it is advisable that patient-controlled analgesia using opioid analgesics should be offered after LSCS.[4] If there is no contraindication, non-steroidal anti-inflammatory drugs should be offered as an adjunct to other analgesics, because they reduce the need for opioids.[5]Regular and preemptive analgesia is advised to have early mobility and patient recovery. The study was conducted to determine the effectiveness of type of anesthesia and it's effect on postoperative analgesia in CS.

METHODOLOGY

The study was conducted at the department of obstetrics and gynecology, Tawam Hospital, Al Ain, UAE from 1st January 2008 to 30th April 2008. A total of 100 consecutive patients undergoing all types CS were included in the study. A purpose built performa was used and the detailed data were collected from the patient's medical records. Type of cesarean section, types of anesthesia, need for intra operative additional analgesia and analgesia at end of operation were recorded.

Fig 1. Pain rating scale.



From Wong D.L., Hockenberry-Eaton M., Wilson D., Winkelstein M.L., Schwartz P.: Wong's Essemtials of Pediatric Nursing, ed. 6, St. Louis, 2001, p. 1301. copyrighted by Mosby, Inc. Reprinted by permission.

The data were analyzed using SPSS v 14. Relationship of pain score to the type of anesthesia received was studied for all the 4 categories.

RESULTS

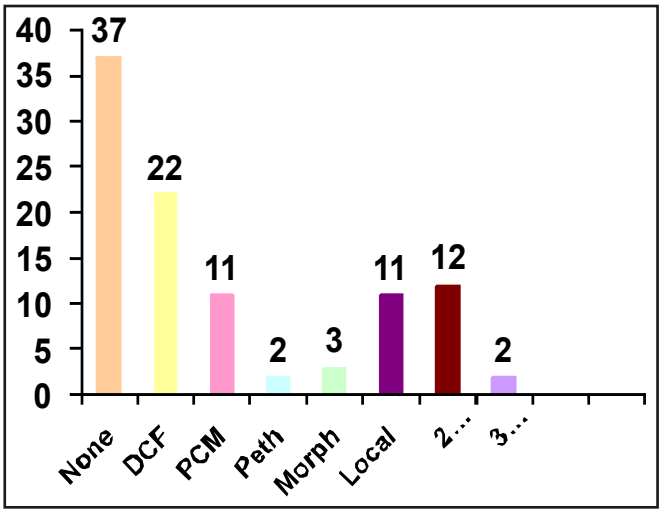
Out of total of 100 patients, 60 underwent emergency CS while 40 underwent elective CS. 55 patients received spinal anesthesia, 37 received general anesthesia, 4 received top up of epidural and 4 patients had a failed spinal anesthesia and needed to convert to general anesthesia (Table 1).

Table 1. Types of anesthesia (n=100).

Types of anesthesia	Number of patients
Spinal anesthesia	55 patients
General anesthesia	37 patients
Epidural anesthesia	4 patients
Failed spinal /General anesthesia	4 patients

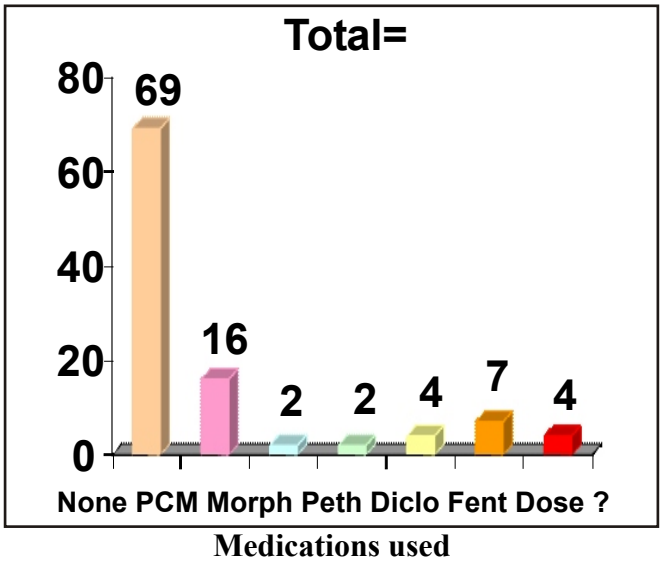
Out of 100 patients, 69 had no analgesia,16 received paracetamol and 4 patients received some analgesic but it was not documented (Fig 2).

Fig 2. Intra operative additional analgesia.



Thirty seven patients did not receive any analgesics while others used various agents (Fig 3).

Fig 3. Analgesia at end of surgery.



Of 100 patients, 59 received regional anesthesia [spinal + epidural]. 52 (88%) had a pain score of zero, 3 (5%) had a pain score between 1-5 and only 3 (3.3%) had a score between 6-10. Out of 41 patients who received general anesthesia, only 15 (36.5%) had a pain score of zero, 13 (31.7%) had a score between 1-5 and 3 (21.9%) had a score between 6-10 (Table 2).

Table 2. Relation of pain score to type of anesthesia (n=100).

Pain score	Spinal patients (n=55)	General patients (n=37)	Epidural patients (n=4)	Failed spinal/Gen (n=4)
Zero	49 patients	15 patients	3 patients	4 patients
1 to 5	3 patients	10 patients	-	3 patients
6 to 10	2 patients	9 patients	-	-
Recovery no score	1 patient	1 patient	-	1 patient
Unknown pain score	-	2 patients	1 patient	-

DISCUSSION

The anesthetic plan for cesarean delivery should take into account the well-being of two patients: the mother and the fetus. Regional anesthesia is the most common method of anesthesia for delivery

because it allows the mother to be awake and immediately interact with her baby. It is also safer for the mother than general anesthesia. In the most recent report of anesthesia-related maternal mortality in the United States (1991-2002 period), the majority of women who died were undergoing a cesarean delivery and there were no deaths associated with vaginal delivery.[1] Maternal mortality associated with general anesthesia was 6.5 per million, while that associated with regional anesthesia was 3.8 per million, a risk ratio of 1.7.[2,3] Even though overall anesthesia-related maternal mortality continues to decrease, rates for regional anesthesia are rising.

The goal for postoperative pain management is to reduce or eliminate pain and discomfort with a minimum of side effects as cheaply as possible. Postoperative pain relief must reflect the needs of each patient and this can be achieved only if many factors are taken into account.[4,5] These may be summarized as clinical factors, patient-related factors and local factors. In the final analysis the ultimate determinant of the adequacy of pain relief will be the patient's own perception of pain.[6]

The World Health Organization Analgesic Ladder was introduced to improve pain control in patients with cancer pain. However, it has lessons for the management of acute pain in post surgical cases as it employs a logical strategy to pain management. As originally described, the ladder has three rungs.[3]

Emergency cesareans are high risk patients.[7] The surgery is usually performed out of hours and patients have been laboring for some duration and already in pain in the pre operative period. These patients require adequate pre emptive analgesia. The elective CS patients are mentally more prepared to cope with pain and type of anesthesia can be planned.[6]

Regional techniques can block or reduce pain anywhere from several hours to several days, depending on the technique used. Pre-emptive pain management may reduce subsequent pain in the days to weeks following surgery. Greater pain control has the potential to allow for earlier hospital discharge and may improve the patient's ability to tolerate physical therapy.[7,8]

General anesthesia has two parts which includes amnesia and analgesia. In most of the patients, intra operative analgesics were used in the general anesthesia group, especially fentanyl, morphine and pethidine. Most of the patients undergoing regional anesthesia, received only paracetamol and diclofenac.

When reviewed for type of anesthesia and pain score, it is evident that in the regional anesthesia group the pain control was far superior to the general anesthesia group. The majority of the group who received regional anesthesia had a first pain score of zero while only one third of the general anesthesia group had no pain. Similarly, patients with mild pain were six times higher in the general anesthesia group. The same group had severe pain in seven times the number of patients compared to the regional group.

We have to encourage our patients to have more regional anesthesia as the benefits are evident and the misconceptions should be addressed. It has now been documented that there is an additional benefit of reduction in blood loss in patients with regional as compared to general anesthesia.[9,10] Moreover, high risk patients like those with severe preeclampsia are recommended for regional anesthesia.[11,12]

Keeping the WHO criteria for 3 step pain relief and the effectiveness of regional analgesia for CS, we have introduced guidelines in our Hospital for uniformity of care in anesthesia and analgesia in obstetric patients. Patients are encouraged and counseled in the antenatal clinic to take regional anesthesia which is documented in the patient's notes. An anesthesia clinic consultation for all the patients planned for elective CS which documents the consent and patient preference for type of anesthesia is recommended.

The surgeon should document post operative care which includes adequate analgesia according to the type of anesthesia received by the patient and the pain score. The guidelines advise local infiltration of the CS wound with 20 ml of 1% lignocaine at end of surgery in cases of general anesthesia. Also recommended is use COX 2 inhibitors, NSAIDS and paracetamol by the parenteral, oral or rectal routes for pain scores of 1-5 and to use Inj Morphine in doses of 2.5 mg to 5 mg slow intravenous every 4 to 6 hours for pain relief for pain scores 6-10.

CONCLUSIONS

From our study, regional anesthesia is preferable for women undergoing cesarean sections as it is associated with better pain control. Plan of anesthesia and counseling is to be documented in patient's notes. Analgesics need to be given according to hospital guidelines.

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REFERENCES

1. Grant GJ, Hepner DL, . Anesthesia for cesarean delivery. 2012 [updated 2012 Oct 19; cited 2012 Dec 15].Available from:www.who.int/anesthesia/publications/pdf.
2. National Institute of Clinical Excellence. Cesarean section 132 [2004] NICE guidance by topic www.nice.org.uk/Guidance/Topic
2. World Health Organization Guideline for postoperative care and pain relief [PDF] Postoperative care. www.who.int/entity/surgery/publications/Postoperative care.pdf
3. Barclay L, Vega CP. Postoperative Pain Relief for Caesarean Delivery. Reviewed 20 July 2009
4. Magnani E, Corosu R. Source Department of Gynecology, University of Rome "La Sapienza", Rome, Italy Postoperative analgesia after cesarean section by continued administration of levobupivacaine with the On-Q Painbuster system over the fascia vs ketorolac + morphine i.v. Clin Exp Obstet Gynecol 2006;33:223-5.
5. Nadhima H. h. al-hakim, zahra'a m. s. alidreesi. The effect of local wound infilteration on postoperative pain after cesarean section . J Surg Pak 2010;15:131-4.
6. Schug SA, Manopas A. Update on the role of non-opioids for postoperative pain treatment. Best Pract Clin Anaesthesiol 2007;21:15-30.
7. Manopas A. Recent Advances in Postoperative Pain Management Yale J Biol Med 2010;83: 11-25.
8. Siddik-Sayyid SM, Nasr VG, Taha SK,Zbeida RA, Shehade JM, AlAlami AA, et al. A randomized trial comparing colloid preload to coload during spinal anesthesia for elective cesarean delivery. Anesth Analg 2009;109:1219-24.
9. Kanazi GE, Khatib MI, Siddik-Sayyid SM. The Analgesic Efficacy of Subarachnoid Morphine in Comparison with Ultrasound-Guided Transversus Abdominis Plane Block after Cesarean Delivery: A Randomized Controlled Trial. Anesth Analg 2010;111:475-81.
10. Carvalho B, Chu L, Fuller A, Riley ET. Valdecoxib for Postoperative Pain Management After CesareanDelivery: A Randomized, Double-Blind, Placebo-Controlled Study. Anesth Analg 2006;103:664-70.
11. Visalyaputra S, Rodanant O, Saengchote W. Spinal Versus Epidural Anesthesia for Cesarean Delivery in Severe Preeclampsia: A Prospective Randomized, Multicenter Study. Anesth Analg 2005;101:862-8.
12. Butwick A, Ting V, Riley E. The Association Between Thromboelastographic Parameters and Total Estimated Blood Loss in Patients Undergoing Elective Cesarean Delivery. Anesth Analg 2011;112:1041-7.