Integrative Anesthesiology

REVIEW ARTICLE

Assessment of the Management of Postoperative Pain in the Surgery Department of Souro Sanou University Hospital Center in Bobo-Dioulasso

Barro SD[1]*, Traore IA1, Guibla I[1], Ki KB[2] and Traore I[3]

[1]Department of Souro University Hospital (CHU) Souro Sanou, Burkina Faso
[2]Department of Souro University Hospital Pediatric (CHU) Charles De Gaulle, Burkina Faso
[3]Department of Souro District Hospital of Bogodogo, Burkina Faso

Abstract

Introduction: Postoperative pain is a component of the surgical procedure. Its care is poorly documented in Burkina Faso.

Goal: To evaluate the management of the postoperative pain in the surgical departments of Souro Sanou University Hospital Center in Bobo-Dioulasso.

Methodology: It's a prospective study, transverse type referred to descriptive, covering the period from January 1st to 31st March 2017. It focused on surgical patients, aged at least 15 years old and having been hospitalized for at least 24 hours after their surgery.

Results: A total of 124 patients were included in the study . The average age was 42, 65 years old with a sex ratio of 1.82. The majority of patients (52.42%) did not attend school. According to the anesthetic risk, the patients were classified as ASA1 (62.90%); ASA II or ASA III (37.1%). The types of surgery performed were: orthopedic in 36 cases (29.03%); visceral in 40 cases (20.16%); urogenital in 29 cases (23.39%); maxillofacial in 12 cases (9.68%); ENT in 7 cases (5.65%). The frequency of the postoperative pain was 88.71%. The average pain intensity at EVA was 42.73 mm. The anesthetic technique was a general anesthesia in 66.94% and a loco regional in 33.06%. Postoperatively, multimodal analgesia was prescribed in 44.35%. Patients were satisfied with the management of their postoperative pain in 52.42%, against 22.58% unsatisfied.

Conclusion: The management of postoperative pain remains insufficient in the surgical departments. Improving the quality of care requires setting up care protocols, training staff and carrying out audits on professional practices.

Keywords: Postoperative pain; Surgery; Nalgesia; CHUSS Bobo Dioulasso; Souro Sanou University Hospital Center

Introduction

Pain is an important component of the surgical procedure. Intraoperative, advances in anesthesia have improved the conditions of intervention for both the patient and the surgeon. As for the postoperative period, we must focus on postoperative pain, especially as it remains highly variable. The management of postoperative pain is important for the well-being of the patient because it contributes to faster and better recovery after surgery. Many publications around the world and in Africa show that the postoperative pain and its management constitute a public health problem [1-4]. Indeed, the evaluation and analgesia of the postoperative pain remain insufficient [5]. In Burkina Faso, the management of postoperative pain in hospitals is poorly documented. The objective of this work was to evaluate the management of the postoperative pain in the surgical departments of Souro Sanou University Hospital Center (CHUSS) in Bobo-Dioulasso.

Patients and methods

It's a prospective study transversal type referred to descriptive, from January 1st to March 31st 2017. It took place in the various services of the Department of Surgery of Souro Sanou University Hospital Center in Bobo-Dioulasso. It covered all surgical patients, aged at least 15 years old, having had a pre anesthetic consultation which intervention required hospitalization for more than 24 hours during the study period. An investigation sheet was developed with a questionnaire. The data were collected by individual interview and examination of each patient, 24 hours after the intervention. The data were supplemented by the documentary review of the medical file and the operating protocol. The variables studied covered 18 questions divided into 5 themes: the first carried it on demographics patients (age, sex, level of education, occupation) ;the second on the type of surgery (ENT, visceral, orthopedics, urology, maxillofacial) the third on clinical variables (anesthetic risk according to ASA

Correspondence to: Barro Sié Drissa, Department of Souro, Sanou University Hospital Center in Bobo-Dioulasso, Tel: 70 27 70 43, Burkina Faso. Email: drissab[AT]yahoo[DOT]fr

Received: Apr 01, 2018; **Accepted:** Apr 03, 2018; **Published:** Apr 06, 2018

classification and factors influencing surgery or anesthetic protocol surgical history and major trauma, preoperative anxiety, preoperative counseling, duration of intervention, type of anesthesia, postoperative pain); a fourth on therapeutic variables (intraoperative analgesia, postoperative analgesia) and the fifth on patient satisfaction.

The data were entered by Epi data software in version 3.1 and analyzed with the Stata 12 software. In a first step, the proportions and averages of the different study variables were determined. Comparisons were made for proportions using the Chi 2 test or Fischer's exact test and averages using the Student's test or the Mann-Whitney test. The significance level used for the different statistical tests was $p < 0.05$.

Results

In total, 124 patients were collected. The mean age of the patients was 42.65 ± 17.64 years old (range: 15 to 82 years old). The distribution by sex was 80/124 men (64.52%) for 44 women (35.48%), a sex ratio of 1.82. Out-of-school patients accounted for (52.42%) compared to 47.58% of those in school. In our sample, farmers and housewives accounted for 33.06% and 24.19% respectively, followed by informal sector workers at 12.90%. Clinically, preoperatively 36.29% had previously undergone surgical intervention; 59.67% were anxious and 29.84% had prior postoperative pain counseling. According to the American Society Anesthesiologic classification (ASA), 62.90% were ASA I, 30.65% ASA II and 6.45% ASA III. The different types of surgery performed were: orthopedic 36 cases (29.03%); visceral 40 cases (32.25%); urology 29 cases (23.39%); maxillofacial 12 cases (9,68%); ENT 7 cases (5.65%). General anesthesia was performed in 66.94% cases against 31.54% of locoregional anesthesia (spinal anesthesia). The pain was found in 110 patients, a frequency of 88.71% of postoperative pain.

The frequency of pain according to patient characteristics is shown in Table 1

The average intensity measured at the analogue visual scale (EVA) was 42.73 mm ± 22.25 mm (range 20 to 100 mm). The intensity of the pain is listed in Table 2.

The average intensity of postoperative pain according to the characteristics of the population is shown in Table 3.

Postoperative analgesia was a monoanalgesia (Paracetamol) in 15.32% and 84.68% in multimodal cases. The main associated molecules were paracetamol, Nonsteroidal anti-inflammatory drugs (NSAIDs) and WHO level 2 products (tramadol, nefopam). Morphine has not been used. Analgesia was started after surgery in 55.65% of cases. Of the patients who had preventive analgesia, 56.36% had reported postoperative pain. There was no statistically significant link between the feeling of the postoperative pain and the preventive analgesia. p = 0.652.

The assessment of overall patient satisfaction is presented in Table 4.

Postoperative pain					
Variable	**N**	**%**	**n**	**%**	**p-value**
Total	124	100	100	88.71	-
Sex					
Man	80	64.52	70	87.5	0.56
Woman	44	35.48	40	90.91	-
Age					
≤ 45 years old	78	62.9	72	92.31	0.099
> 45 years old	46	37,10	38	82.61	-
schooling					
Not attending school	65	52.42	53	81.54	0,008
Schooled	59	47.58	57	96.61	-
Anxiety					
YES	74	59.68	70	94.59	0,010
NO	50	40,32	40	80,00	-
ASA class					
ASA I	78	62,90	68	87.18	0.483
ASA II & ASA III	46	38,18	42	91.30	-
Duration of intervention					
<= 120 minutes	68	54.84	59	86.76	0.451
> 120 mn	56	45.16	51	91.07	-
Anesthesia					
AG	83	66.94	77	92.77	0,042
Rashi & ALR	41	33,06	33	80.49	-
Types of surgery					
visceral	41	32.26	38	92.68	0.384
Other than visceral	83	67.74	72	86.75	-
Orthopedics	36	29.04	35	97, 22	0.065
Other than orthopedic	88	70.96	75	85.23	-
Urogenital	28	22.58	20	71.43	0,003
Other services except urogenital	96	77.42	90	93.75	-
maxillofacial	13	10.48	12	92.31	1.00
Other except maxillo	111	89.52	98	88.29	-
ENT	6	4.84	5	83.33	0.52
Other except ENT	118	95.16	105	88.98	-

N = Total number; n = Effective patients with pain.

Table 1: Frequency of postoperative pain according to patient characteristics.

Postoperative pain intensity	Numbers	Frequencies%
Intense	29	26.36
moderate	23	20.91
Low	58	52.73
Total	110	100

Table 2: Classification of the postoperative pain by Intensity.

Discussion

The socio-demographic characteristics (age, sex, occupation, and level of education) in our sample were uncommon compared to most African studies [4, 6, 7]. The postoperative pain remains a constant preoccupation within 24 hours following a surgical intervention. The high frequency (88.71%) of postoperative pain in our study is found in most studies [3,6,8]. Many factors are predictive of a postoperative pain. Some are related to surgery and others to the patient. In the preoperative period the literature recommends to identify

Postoperative pain							
Variable	**N**	**%**	**n**	**EVA (mm)**	**σ (mm)**	**95% CI (mm)**	**p-value**
Total	124	100	110	42.73	22.25	-	-
Sex							
Men	80	64.52	70	42.85	22.2	37.56-48.15	0.9359
Women	44	35.48	40	42.72	22.25	35.26 -49.73	-
Age							
<= 45 years old	78	62.9	72	44, 16	23.48	38.64 -49.68	0.3528
> 45 years old	36	37,10	38	40,00	19.72	33.51- 46.84	-
Instruction							
Not educated	65	52.42	53	39, 81	20.42	34.18-45.44	0.1864
Education	59	47,58	57	45.43	23.68	39.15-51.72	-
ASA class							
ASA I	78	62,90	68	41.32	21.18	36.05-46.6	0.4024
ASA II & ASA III	42	38,18	42	40.5	23.08	37.80-59.12	-
Duration of intervention							
<= 120 minutes	68	54.84	59	42.24	22.32	36.37-48.11	0.7653
> 120 mn	56	45.16	51	43.53	22.52	37.20- 49.86	-
Anaesthesia							
AG	83	66.94	77	43, 76	22.89	38.57-48.96	0.457
Rachi & ALR	41	33,06	33	40,30	20,83	32.91- 47.69	-
Type of surgery							
Visceral surgery	41	33,06	38	42.89	22.53	22.53-50, 30	0.9546
Other than visceral	83	66.94	72	42.64	22.26	37.40-47.87	-
Orthopedics	36	29.04	35	49, 14	22.14	41.53-56.75	0.0383
Other than orthopedic	88	70.96	75	39.73	21.8	34.71- 44.75	-
Urology	28	22.58	20	44, 00	25.83	31.90 -56.09	0.9011
Other except urology	96	77.42	90	42.44	21.53	37.93-46.95	-
maxillofacial	13	10,48	12	29.16	5.15	25.90-32.43	0.0368
Others except maxillo	111	89.52	98	44.53	23.04	39.89- 49.18	-
ENT	6	4.84	5	24	5, 47	17.20 -30,80	0,0172
Other ENT	118	95.16	105	43.75	22.43	39.38- 48.11	-

Table 3: Intensity of pain by patient characteristics.

Level of satisfaction	n	%
Satisfied	65	52.42
Satisfied moderately	26	20.97
Very satisfied	5	4.03
Lowly satisfied	14	11,29
Not at all satisfied	14	11.29
Total	124	100

Table 4: level of patient satisfaction.

patients most vulnerable to postoperative pain (at risk of developing severe postoperative pain and / or chronic post-surgical pain) [9]. In our study, significantly among the factors found, those related to the patient were level of education (p = 0.008) and anxiety (p = 0.010); while the factor related to surgery was the type of surgery (p = 0.003). The anesthetic technique has also been a significant factor. (p = 0.042).

The pain must always be evaluated. In fact, the evaluation of pain is the central point of the organization of the management of the postoperative pain [5]. Evaluation procedures must use simple tools that are accepted by all. In our study, EVA was used as an evaluation tool. The French Society of Anesthesia Resuscitation (SFAR) recommends numerical scale and simple verbal scale [5]. The intensity of the postoperative pain varies according to the type of surgery. It was moderate to severe in 47.27% of cases in our study. The surgical technique intervenes in the painful intensity. The invasive techniques widely used in our study, expose to a more intense postoperative pain [10]. More specifically, some evoke the role of the intraoperative neurological lesion as a factor in the increase of postoperative pain and the development of chronic postoperative pain [11-13]. Genetic characteristics such as female sex are exposed to a higher postoperative pain [14-16]. In our study, postoperative pain was present in 90.91% of women against 87.50% in men.

The treatment of fundamental postoperative pain in management. Management strategies must include three essential components: multimodal analgesia, specific analgesia of the procedure and rapid rehabilitation after surgery. In our study the pain was inadequately treated; only paracetamol and WHO type 2 molecules have been used, morphine has not been prescribed. SFAR advocates multimodal analgesia for the treatment of postoperative pain [5]. Indeed, it is recommended to combine a non-selective nonsteroidal anti-inflammatory drug (NSAID NS) or a selective cyclooxygenase type 2 inhibitor (ISCOX2) with morphine in the absence of a contraindication to use NSAIDs [9]. These associations allow an improvement in pain scores, significant morphine savings associated with a

reduction in postoperative nausea (PONV) sedation and duration of postoperative ileus [9]. Also the administration of corticoids is not used in our study (intravenous dexamethasone) before the induction of a general anesthesia in the prevention of PONV, make it possible to decrease the postoperative pain according to many authors [17,18]. Locoregional analgesic techniques, such as spinal anesthesia performed in 33.06% of cases in our series, are more effective in pain intensity than opioids [19,20]. On the other hand, the use of care protocol, absent in our study, has been identified as a positive element for the quality of care [21]. In fact, the existence of a protocol makes it possible to standardize prescriptions, train paramedical personnel and use reliable criteria for administering analgesics [3, 22, 23].

To measure the quality of the management of postoperative pain, several parameters related to structure, procedures and the patient can be evaluated. The degree of patient satisfaction is an imperfect indicator of improved practices: its sensitivity is high and its specificity is low [5]. In our study, the satisfaction rate was 56,45%. Pain scores and satisfaction scores do not measure the same thing [5]. Indeed, several studies have found that the degree of patient satisfaction does not depend solely on the intensity of the postoperative pain [19,24,25,26]. The communication, the display by the caregivers of a desire to relieve the patient, the management of the side effects of the analgesic treatment are also criteria involved in the degree of satisfaction [5].

Conclusion

The postoperative pain, an important component of the surgical procedure is insufficiently supported in the surgical departments of CHUSS Bobo-Dioulasso. This hypoanalgesia is essentially linked to organizational problems. As well as improving the quality of care should include, the establishment of care protocol, the training of staff and the regular conduct of audits of professional practices.

References

1. Makram S, Zakariya I, Enneffah W, Wartiti MA, Iouikotan I, et al. (2013) Assessment of Management of Postoperative Pain at the Hospital military training Mohammed V- Rabat. *J Pharm Clin* 32: 219-226. [View Article]
2. Benhamou D, Berti M, Brodner G, Andres JD, Draisci G, et al. (2008) Postoperative analgesic therapy observational survey (PATHOS): a practice pattern study in 7 central/southern European countries. *Pain* 136: 134-141. [View Article]
3. Fletcher D, Fermanian C, Mardaye A, Aegerter P (2008) A patient-based national survey on postoperative pain management in France persistent challenges. Bread and regional anesthesia committee of the French anesthesia and intensive care society (Sfar). *Pain* 137: 441-451. [ViewArticle]
4. Murthy S, Antwi Kusi A, Jabir AR, Komfo A, Ofori Amanfo (2012) Patient and practitioner perspectives on postoperative bread control in Kumasi, Ghana. *Afr J Anaesth Analg* 19: 102-107. [View Article]
5. Belbachir A, Fletcher D, Larue F (2009) Management of postoperative pain: evaluation and quality improvement. *Ann Fr Anesth Reanim* 28: e1-e1. [View Article]
6. Atangana R, Bahebeck J, Ngowengowe M, Eyenga VC, Hentchoya R, et al. (2006) Management of immediate postoperative pain in Post interventional care room. *Clin Mother Child Health* 3: 473-476. [View Article]
7. Chaibou MS, Toudou AN, Daddy H, Madougou M, Abdou I, et al. (2012) Management of postoperative pain: experience of the Niamey National Hospital, Niger. *J Pain Research* 5: 591-595. [View Article]
8. Apfelbaum, Connie C, Shilpa S, Mehta, Tong J (2003) Postoperative pain experience: Results from a national survey suggest post operative bread continues to be undermanaged. *Anesth Analg* 97: 534-40. [View Article]
9. Aubrun F, et al. (2016) Update of the recommendation on postoperative pain. *Naesth Reanim* [View Article]
10. Poleshuck EL, Katz J, Andrus CH, Hogan LA, Jung BF, et al. (2006) Risk factors for chronic pain following breast cancer surgery: a prospective study. *J Pain* 7: 626-34. [View Article]
11. Kehlet, H, Jensen TS, Woolf CJ (2006) Persistent postsurgical bread: risk factors and prevention. *Lancet* 367: 1618-1625. [View Article]
12. Water C, Guastella V, Morand D, Cardot JM, Aublet Cuvelier B, et al. (2011) Characteristics of the neuropatthy induced by thoracotomy: a 4-month follow-up study with psychophysical examination. *Clin J Pain* 27: 471-80. [View Article]
13. Dimitriou R, GI Mataliotakis, Angoules AG, Kanakaris NK, Giannoudis PV (2011) Complications following autologous bone graft harvesting from the iliac crest and using the RIA: a systematic review. *Injury* 42: S3-15. [View Article]
14. Yuasa H, Sugiura M (2004) Clinical postoperative findings after removal of impacted mandibular third molars: prediction of postoperative facial swelling and pain based on preoperative variables. *Br J Oral Maxillofac Surg* 42: 209-214. [View Article]
15. Craft RM (2003) Sex differences in opioid analgesia: “from mouse to man”. Clin J *Pain* 19: 175-86. [View Article]
16. Kalkman CJ, Visser K, Moen J, et al. (2003) Preoperative prediction of severe postoperative pain. *Pain* 105: 415-23. [View Article]
17. De Oliveira Jr.GS, Almeida MD, Benzon HT, McCarthy RJ (2011) Perioperative single dose systemic dexamethasone for postoperative pain: a meta-analysis of randomized controlled trials. *Anesthesiology* 115: 55-88. [View Article]
18. Waldron NH, Jones CA, Gan TJ, Allen TK, Habib AS (2013) Impact of perioperative dexamethasone on postoperative analgesia and side-effect. Systematic review and meta-analysis. Br J Anaesth 110: 191-200. [View Article]
19. Liu SS, Wu CL (2007) The effect of analgesic technique on postoperative patient-reported outcomes including analgesia: a systematic review. *Anesth Analg* 105: 789-808. [View Article]
20. Block BM, Liu SS, AJ Rowlingson, Cowman AR, Cowan JA Jr, et al. (2003) Efficacy of postoperative epidural analgesia: a meta-analysis. *JAMA* 290: 2455-2463. [View Article]
21. Fish Salomon AS, Chambine S, Lory C (2005) Explanatory factors of pain postoperative: patient characteristics and professional practices. *Rev Epidemiol Health Public* 53: 1S47-56. [View Article]
22. Bedard D, Purden MA, Sauve Larose, Certosini C, Schein C (2006) The Pain experience of postsurgical patients following the

implementation of an evidence-based approach. *Pain Manag Nur* 7: 80-92. [View Article]

23. Rond ME, Wit R, Dam Dam FS, Muler MJ (2000) Bread monitoring program for nurses: effect on the administration of analgesic. *Bread* 89: 25-38. [View Article]

24. Gordon DB, Dahl JL, Miaskowski C, McCarberg B, Todd KH, et al. (2005) American Pain society recommendations for improving quality of acute and cancer pain management: American Pain Society Quality of Care Task Force. *Arch Intern Med* 165: 1574-158. [View Article]

25. Carlson J, Younblood R, Dalton JA, Blau W, Lindley C (2003) Is patient satisfaction a legitimate outcome of pain management? *J Pain Symptom Manage* 25: 264 -75. [View Article]

26. Jensen MP, Mendoza T, Hanna DB, Chen C, Cleeland CS (2004) The analgesic effects that underlie patient satisfaction with treatement. *Pain* 110: 440-7. [View Article]

Citation: Barro SD, Traore IA, Guibla I, Ki KB, Traore I (2018) Assessment of the Management of Postoperative Pain in the Surgery Department of Souro Sanou University Hospital Center in Bobo-Dioulasso. Integr Anesthesiol 1: 001-005.