

Pain in patients undergoing appendectomy*

Dor em pacientes submetidos à apendicectomia

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ABSTRACT

BACKGROUND AND OBJECTIVES: Pain is a subjective manifestation of unpleasant, personal and untransferable experience, produced by tissue injury involving physical and chemical body mechanisms. This study aimed at identifying the presence of acute pain in the postoperative period of appendectomy, at checking pain records, at describing postoperative complications and at comparing pain management and the adequacy of analgesia.

METHODS: This is a transversal, descriptive and quantitative study. Sample was made up of 41 patients submitted to appendectomy. A semi-structured interview was carried out with information about use of analgesics, presence of postoperative pain, pain site, consequences of pain and visual analog scale. To evaluate pain management and the quality of analgesia, the Pain Management Index proposed by the World Health Organization was calculated.

RESULTS: From total sample, 61% were males, mean age was 34.36±11.64 years, 70.7% were married and all patients have referred pain. In 90.2% of cases there was no pain recording in medical charts. Surgical incision was the major pain site and its primary consequence was impaired physical mobility. As to pain intensity, 22.2% of patients had moderate pain and were inadequately treated according to Pain Management Index.

CONCLUSION: There has been considerable inadequacy of analgesia, pain recording in medical charts was scarce and no nursing professional has recorded pain. Surgical incision was major pain complaint site and impaired mobility was the primary complication. Our data bring about the need for investments in health professionals qualification with regard to pain management.

Keywords: Analgesia, Appendectomy, Pain, Pain measurement.

RESUMO

JUSTIFICATIVA E OBJETIVOS: A dor é uma manifestação subjetiva de experiência desagradável, pessoal e intransferível, produzida por uma lesão tecidual envolvendo mecanismos corporais físicos e químicos. Os objetivos da pesquisa são identificar a presença da dor aguda no pós-operatório de apendicectomia, verificar o registro da dor, descrever as complicações da dor pós-cirurgia e comparar o manuseio da dor e a adequação da analgesia.

MÉTODOS: Estudo transversal, descritivo e quantitativo. A casuística foi constituída por 41 pacientes submetidos a apendicectomia. Foi realizada entrevista semiestruturada, com informações sobre o uso de analgésico, presença de dor pós-cirúrgica, local da dor, consequências da dor e a escala analógica visual. Para avaliar o manuseio da dor e o padrão da analgesia foi calculado o Índice de Manuseio da Dor proposto pela Organização Mundial de Saúde.

RESULTADOS: Sessenta e um por cento eram do gênero masculino, a média de idade foi de 34,36±11,64 anos, 70,7% casados, todos os pacientes referiram dor. Em 90,2% dos casos não havia registro da dor em prontuário. A incisão cirúrgica foi o principal local da dor e a mobilidade física prejudicada sua principal consequência. Quanto à intensidade da dor, 22,2% dos pacientes sentiram dor moderada e foram inadequadamente tratados de acordo com o Índice de Manuseio da Dor.

CONCLUSÃO: Observou-se inadequação considerável da analgesia, o registro da dor em prontuário foi muito escasso e nenhum profissional da enfermagem registrou o fenômeno doloroso. A incisão cirúrgica foi o principal local da queixa de dor e a dificuldade para deambular foi a principal complicação. Os dados desta pesquisa suscitam a necessidade de investimentos na capacitação dos profissionais da saúde quanto ao manuseio adequado do fenômeno doloroso.

Descritores: Apendicectomia, Analgesia, Dor, Medição da dor.

INTRODUCTION

Pain is a subjective manifestation of unpleasant, personal and untransferable experience, produced by tissue injury involving physical and chemical body mechanisms. In 2001, the Joint Commission Accreditation of Healthcare Organizations¹ has described pain as the fifth vital sign. Due to its importance, pain should be evaluated and recorded similarly to other vital signs by the health team.

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A study has shown that although pain is described as the fifth vital sign, its recording by the nursing team was scarce². Among health professionals, nursing is the category remaining in continuous shifts with patients, thus playing a critical role in the evaluation of pain.

Adequate appendectomy postoperative pain management provides early recovery and return to daily life activities. For adequate pain management, it is necessary the implementation of analgesia protocols, acute pain centers and the qualification of health professionals on the adequate management of pain³.

This study aimed at identifying the presence of appendectomy postoperative pain, at checking pain records on medical charts of such patients, at describing postoperative pain complications and at comparing pain management and adequacy of analgesia according to World Health Organization (WHO) protocol⁴.

METHODS

This is a transversal, descriptive and quantitative study carried out in a state public hospital, reference for trauma assistance and abdominal surgeries, located in the city of Aracaju, State of Sergipe, Northeastern Brazil.

Sample was non-probabilistic by accessibility and was made up of 41 people meeting the following inclusion criteria: patients submitted to appendectomy, aged above 18 years and who were in the first postoperative day. Exclusion criteria were patients below 18 years of age and who were submitted to a different surgical procedure.

Data were collected from August to November 2013. Previously, medical charts of all patients were analyzed to check inclusion criteria. Then, individuals were submitted to a semi-structured interview with a tool with information about values of vital signs, use of analgesics, presence of postoperative pain, pain site, pain consequences, in addition to visual analog scale (VAS), which is a straight line with no numbers, where left edge indicates no pain and right edge the worst pain referred by patients. This scale was chosen for being easy to use and for needing just a bit of patients' cooperation. After the interview, patients' vital signs were evaluated and values were recorded in the data collection tool.

To compare pain management and the analgesic protocol proposed by the WHO (1996)⁴ Pain Management Index (PMI) was calculated as follows: analgesic potency is subtracted from pain intensity referred by patients. PMI varies from -3 to +3; negative scores point to the use of inadequate analgesics and zero or positive scores indicate adequate analgesia. According to their potency, analgesics are classified in four levels: zero – lack of analgesic drug; 1 – simple analgesic (dipyrone and paracetamol) and non-steroid anti-inflammatory analgesics (NSAIDs); 2 – weak opioid (codein, tramadol) and strong opioid (morphine, meperidine). Pain intensity is classified in three levels: zero (no pain); 1 mild pain (1-3); 2 moderate pain (4-7) and 3 severe pain (8-10).

An example of Pain Management Index calculation is given below:

Prescribed drug = dipyrone 1

Pain intensity referred by patient = 9 = 3

Pain Management Index (PMI) = prescribed drug - patient's pain

PMI = 1 - 3 = -2

All information obtained was coded and entered in a database. Then, exploratory data analyzes were carried out for categorical variables with absolute and percentage frequencies. Data were analyzed with the software Social Package for Health Sciences (SPSS) version 20.0. No variable had statistically significant differences.

The study was approved by the Ethics Committee for Research with Human Beings, Federal University of Sergipe (protocol 0553.0.107.000-11). All patients agreed to participate in the study and have signed the Free and Informed Consent Term – FICT. The whole study was in compliance with Resolution 466/2012 of the National Health Council.

RESULTS

Participated in the study 41 patients submitted to appendectomy. From these, 61.0% were males, aged between 18 and 40 years, mean age of 34.36 ± 11.64 years, 56.1% came from the countryside of Sergipe, 70.7% were married and 48.8% had 5 to 8 years of education. As to previous diseases, 75.6% of patients referred having no disease, 39.0% had already been submitted to some type of surgery, of which 14.6% gynecological-obstetric surgeries and 9.8% abdominal surgeries (Table 1). All patients have referred pain. However, according to VAS, 29.3% were classified as no pain, 58.8% as mild pain and 21.9% as moderate pain; 92.8% of patients have referred pain at surgical incision. Impaired physical mobility was the consequence of pain for 90.2% of patients, and 2.4% of patients had ineffective respiratory pattern. As to pain recording in medical charts, it was identified that in 90.2% of cases there were no records, and when there were records, these were made by physicians (Table 2).

All patients have received painkillers, being that 34.1% have used simple analgesics and NSAIDs; 63.4% have used simple analgesics, NSAIDs and weak opioids; and just 2.4% of patients have used strong opioids.

Pain intensity classification distribution according to type of analgesia as proposed by the WHO⁴ is shown in table 3. As from data analysis by PMI it was possible to observe that 22.2% of patients with moderate pain were inadequately treated.

DISCUSSION

For the adequate assistance of patients in the postoperative period of appendectomy it is necessary a multiprofessional approach, considering that after surgery there may be pain and health professionals shall promptly intervene to prevent pain-induced noxious effects⁵. Health professionals play a critical role in pain management by preventing and acting to control pain.

In our study, patients' age was 34.36 ± 11.64 years. A study⁶ evaluating removed appendices due to acute appendicitis

Table 1. Sociodemographic characteristics of patients submitted to appendectomy, Aracaju/SE, Brazil 2013

Variables	n	%
Gender		
Male	25	61.0
Female	16	39.0
Age group (years)		
18 to 40	30	73.2
41 to 60	10	24.4
Above 60	1	2.4
Origin		
Aracaju	17	41.5
Countryside of Sergipe	23	56.1
Different State	1	2.4
Marital status		
Single	12	29.3
Married	29	70.7
Education level (years)		
0 to 4	16	39.0
5 to 8	20	48.8
9 or above	5	12.2
Previous diseases		
None	31	75.6
Hypertension	3	7.3
Diabetes	1	2.4
Diabetes and hypertension	1	2.4
Neoplasia		
Other	4	9.8
Previous surgery		
None	25	61.0
Gynecological and obstetric	6	14.6
General surgery	4	9.8
Trauma	2	4.9
Gynecological and obstetric + trauma	2	4.9
Gynecological and obstetric + general surgery	1	2.4
Neoplasia	1	2.4

Table 2. Pain characteristics and recording for patients submitted to appendectomy, Aracaju/SE, Brazil 2013

Variables	n	%
Pain		
No pain	12	29.3
Mild pain	20	48.8
Moderate pain	9	21.9
Pain site		
Surgical incision	38	92.7
Other	2	4.9
None	1	2.4
Pain consequences		
Impaired physical mobility	37	90.2
Difficulty to sleep, walk and move	3	7.3
Ineffective respiratory pattern	1	2.4
Pain record on medical chart		
Yes	4	9.8
No	37	90.2

Table 3. Matching of analgesia in patients submitted to appendectomy, Aracaju/SE, Brazil 2013

Pain	Types of analgesia						Total	
	Simple analgesic + NSAID		Simple analgesic + NSAID + weak opioid		Simple analgesic + NSAID + strong opioid		n	%
	n	%	n	%	n	%	n	%
No pain	2	16.7	10	83.3	0	-	12	100
Mild pain	10	50.0	9	45.0	1	0.5	20	100
Moderate pain	2	22.2	7	77.8	0	-	9	100

NSAID: non-steroid anti-inflammatory analgesics.

has identified that most patients had mean age of 20 years, similar to our data. Appendectomy postoperative period is a social problem, since for surgical recovery it is necessary to interrupt daily activities, in addition to the hospitalization process, which may induce emotional stress and physical injury.

Most patients had mean of 5 to 8 years of study. A research⁷ confirms our study data where people with lower education levels have less effective methods to cope with pain.

In our study, all patients submitted to appendectomy had postoperative pain. Moderate pain was present in 21.9% of cases, and 22.2% of patients with this pain were inadequately treated, which is in disagreement with what is proposed by the WHO⁴, which indicates the use of the analgesic ladder for the choice of the adequate therapy. According to it, weak opioid associated to non-opioid analgesic or NSAID and adjuvant drugs should be used to manage moderate pain. Systematic pain evaluation and relief contribute for the maintenance of physiological functions and prevent noxious effects for the organism. Adequate analgesia brings benefits for circulatory and respiratory systems⁸.

Surgical incision was the primary pain site for 92.8% of patients. There are several factors which contribute to worsen pain: surgical incision extension, surgical procedure complexity² and inadequate pain measurement and management. There are several methods to control postoperative pain: preventive analgesia and multimodal combination therapy; however, patients of our study were not benefited from these resources which provide pain relief and avoid distress.

In our study, impaired physical mobility was the consequence of pain for 90.2% of patients. Early postoperative ambulation allows for the faster return of basic physiological functions and decreases the risk of cardiopulmonary system-related complications¹⁰. It is necessary to emphasize that adequate pain control allows for early mobility and, as a consequence, surgical evolution improvement.

Results show that 2.4% of patients had ineffective respiratory pattern due to postoperative pain. Pain limits ventilation and as consequence increases the risk of respiratory complications. There is increased oxygen demand in the postoperative period, which may trigger respiratory failure in patients with decreased pulmonary reserve¹¹. Strict observation by health professionals

of the imminent evidence of dyspnea allows actions to control this postoperative complication.

All patients received analgesics to control postoperative pain and just one patient received morphine. Although medical charts had analgesics prescription, it was observed that analgesia was ineffective to control postoperative pain since patients, even medicated, have referred pain. Brazil is considered a country with low morphine use, in spite of its proven efficacy to control postoperative pain. Morphine is also considered the standard drug to manage acute and chronic pain. It has the advantage of not having ceiling dose, as NSAIDs and mixed opioids, it concentrates efficacy for the management of severe postoperative pain and does not induce nausea or any other undesirable effect^{12,13}. This drug provides patients with faster recovery and return to basic physiological functions, as well as fast return to social activities.

For the adequate management of postoperative pain, it is necessary to administer analgesics before pain is installed or as soon as it appears aiming at avoiding hyperanalgesia. One very important factor for adequate pain management is duration and efficacy of analgesic therapy¹⁴. It is believed that adequate postoperative pain control provides more satisfaction to patients and faster return to daily life activities.

It was identified that 90.2% of cases had no pain recording, and the few existing records were made by physicians. A study evaluating pain in patients submitted to craniotomy has identified similar data¹⁵. Adequate pain evaluation and recording are critical to prevent surgical complications and patients' distress. Nursing actions on patients' medical charts are a duty of all professionals of the category. However, data of our study differ from this statement since there has been no recording by the nursing team.

We believe that the lack of recording in our study might also be related to fail in measuring and evaluating pain. Since the 1990s, the Joint Commission on Accreditation of Healthcare Organizations¹ considers pain the fifth vital sign and determines that it should be systematically measured, evaluated and recorded by health professionals.

Individual pain recording decreases patients' discomfort and improves the quality of assistance; however, it is necessary that health professionals systematically measure, evaluate and record pain aiming at assuring adequate assistance.

CONCLUSION

It was observed considerable inadequacy of analgesia, pain recording in medical charts was very scarce and no nursing professional has recorded pain. Surgical incision was the primary pain complaint site and difficulty to walk was the primary pain complication, followed by insomnia and dyspnea.

A limitation of this study is its sample size. However, data portray the reality of the studied hospital, considering that all methodological criteria proposed for the study were followed.

Our results show that untreated postoperative pain may further worsen surgical outcome. So, they bring about the need for investments in the qualification of health professionals in adequate pain management.

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