

The application of warm compress to reduce pain in post-laparotomy appendicitis patients in the ICU

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ABSTRACT

Pain is one of the complaints that often arise in post-operative patients, including patients after laparotomy for appendicitis. One non-pharmacological method that can be used to reduce pain is warm compress therapy. Warm compresses work by increasing local blood flow, relaxing muscles, and stimulating pain impulses to the brain's nervous system. The application of warm compresses was carried out for 3 consecutive days after the nurse carried out independent intervention for 3 days, there was a decrease in pain in Mrs. I where the first day with a pain scale of 7 after the application of warm compresses the pain scale was still 7, on the second day Mrs. I's pain scale decreased quite a bit to a scale of 5, Mrs. I felt comfortable with the administration of non-pharmacological therapy of warm compresses, and on the third day Mrs. I's pain scale decreased to 3 the patient said there was still a little pain but it was not as painful as on the first day and she was a little free to move her body.

Keywords: Appendicitis, Pain, Post-Laparotomy, Warm Compress

INTRODUCTION

Appendicitis is an inflammation of the vermiform appendix. This condition usually appears acutely, within 24 hours of onset, but can also present as a more chronic condition. Classically, appendicitis initially presents with generalized abdominal or periumbilical pain that then localizes to the right lower quadrant (Deppen, 2021). Appendicitis is an inflammatory process caused by infection of the appendix, caused by blockage from undigested food deposits excreted through the appendix, fecaliths, and lymphoid follicle hyperplasia. If left untreated, complications such as perforation can occur (Mirantika et al., 2021).

Globally, the age-adjusted prevalence and incidence rates of appendicitis in 2019 were 8.7 (95% UI 6.9 to 11.0) and 229.9 (95% UI 180.9 to 291.0) per 100,000 population, with an increase of 20.8% (95% UI 18.9 to 23.0%) and 20.5% (95% UI 18.7 to 22.8%), respectively, from 1990 to 2019. In addition, the age-standardized YLD rate was 2.7 (95% UI 1.8 to 3.9) in 2019, with an increase of 20.4% (95% UI 16.2 to 25.1%) from 1990 to 2019. In 2019, the prevalence,

incidence, and Age-standardized YLDs peaked in the 15-19 age group in both males and females. However, no statistically significant differences were observed between males and females across all groups. Ethiopia, India, and Nigeria showed the largest increases in age-standardized prevalence rates between 1990 and 2019 (Guan et al., 2023).

In Indonesia, the prevalence of appendicitis in 2020 was 596,132 people (3.36%), an increase from 3,236 in 2019. The incidence of appendicitis in North Sumatra, particularly at Haji Adam Malik General Hospital in Medan, was 62.8% in 2020. The Indonesian Ministry of Health considers appendicitis a priority health issue at the local and national levels due to its significant impact on public health (Kemenkes RI, 2020).

Perforated appendicitis occurs due to the rupture of an injured appendix, causing pus in the appendix to enter the abdominal cavity, so that immediate treatment with laparotomy surgery is needed (Erianto et al., 2020). Laparotomy is a major surgical procedure in the form of an incision in the layers of the abdominal wall to obtain parts of the abdominal organs that are experiencing problems with hemorrhage, perforation, cancer, and obstruction (RN Utami & Khoiriyah, 2020). Laparotomy is performed in cases such as perforated appendicitis, inguinal hernia, gastric cancer, colon and rectal cancer, intestinal obstruction, chronic intestinal inflammation, cholecystitis, and peritonitis (Kasanova et al., 2021).

Pain management in post-laparotomy patients requires pain management with pharmacological and non-pharmacological therapy techniques (Nadianti & Minardo, 2023). Non-pharmacological pain management includes relaxation, hypnosis, position and change, cutaneous, hydrotherapy, hot/cold therapy, music, acupressure, aromatherapy, imagery techniques, distraction, and warm compresses with lavender scent (Afrianti & Widaningsih, 2023). One non-pharmacological action that can reduce pain is a warm compress (Yuniarti et al., 2023).

According to several studies, pain is a common complaint among post-operative patients, including those who underwent laparotomy for appendicitis. One non-pharmacological method that can be used to reduce pain is warm compress therapy. Warm compresses work by increasing local blood flow, relaxing muscles, and stimulating pain impulses to the brain's nervous system. Warm compresses are also very easy to administer, both at home and in the hospital. Therefore, applying warm compresses as a nursing intervention is essential to reduce patient pain levels.

METHOD

This research uses a descriptive method with a case study approach. It was conducted in the ICU of Royal Prima Medan Hospital in May 2025 using 1 patient who experienced pain after laparotomy for appendicitis. Data were obtained from patient interviews and from using a pain scale observation sheet to

monitor the patient's progress. The application given to the patient was non-pharmacological therapy of warm compresses to reduce pain after laparotomy for appendicitis. Before administering warm compress therapy, the pain scale was first measured using a pain scale observation sheet, and then the results were recorded on the pain scale observation sheet. After measuring the pain scale, warm compress therapy was given to the abdominal area for 15 minutes, after which the pain scale was measured again and recorded on the pain scale observation sheet to see changes in the reduction in the pain scale felt by the patient.

RESULTS AND DISCUSSION

Table of changes in pain scale before and after being given non-pharmacological therapy of warm compresses

Initials	Pre-Application	Post	Post-Warm	Post Warm
	of Warm	Applying Warm	Compress	Compress
	Compress	Compresses on the	Application Day	Application Day
		First Day	Two	Three
	Pain Scale	Pain Scale	Pain Scale	Pain Scale
Mrs. I	7	7	5	3

An assessment of Mrs. I was conducted on May 1, 2025, in the post-operative care room after undergoing an exploratory laparotomy and appendectomy due to a medical diagnosis of perforated appendicitis. Based on the results of subjective and objective assessments, it was found that the patient complained of severe pain in the lower right abdomen with a pain scale of 7, body aches, and there was a stitch wound from the epigastrium to the lower right abdomen.

Based on the results of the assessment and data analysis carried out using the SDKI (Indonesian Nursing Diagnosis Standards) approach, the nursing diagnosis was concluded as acute pain related to the disruption of tissue continuity characterized by complaints of pain in the abdomen after surgery, a pain scale of 7, and the patient appeared to be grimacing.

Nursing interventions planned and implemented according to SIKI (Indonesian Nursing Intervention Standards) for acute pain are expected to decrease the level of pain within 3x24 hours with interventions, identifying the location, quality, and scale of pain, providing non-pharmacological therapy (warm compresses), facilitating comfortable positions and rest, educating patients about breathing relaxation techniques, and collaborating on providing analgesics according to the medical program. Implementation of pain management by providing warm compresses and relaxation education.

The evaluation was carried out for 3 consecutive days after the nurse carried out independent intervention for 3 days, there was a decrease in pain in Mrs. I

where the first day with a pain scale of 7 after giving a warm compress the pain scale was still 7, on the second day Mrs. I's pain scale decreased quite a bit with a scale of 5, Mrs. I felt comfortable with the administration of non-pharmacological therapy with a warm compress, and on the third day Mrs. I's pain scale decreased to 3 the patient said there was still a little pain but it was not as painful as on the first day and she was a little free to move her body. The evaluation used SOAPIER, and from the intervention carried out, it could be concluded that there was a decrease in the pain scale after giving a warm compress, and the evaluation was continued.

CONCLUSION

An assessment of Mrs. I was conducted on May 1, 2025, in the post-operative care room after undergoing an exploratory laparotomy and appendectomy procedure due to a medical diagnosis of perforated appendicitis. Based on the results of subjective and objective assessments, it was found that the patient complained of severe pain in the lower right abdomen with a pain scale of 7, the body felt feverish, and there was a stitch wound from the epigastrium to the lower right abdomen. The patient appeared weak and was not yet able to carry out daily activities independently. Physical examination showed signs of pain, seeping surgical wounds, and increased body temperature. The nursing diagnoses that emerged were acute pain, risk of infection, hyperthermia, and impaired physical mobility. Nursing interventions were arranged based on the nursing diagnoses found and in accordance with the SDKI, SIKI, and SLKI, including pain management, hot compresses, hyperthermia management, infection prevention, and mobilization support. The implementation of nursing care carried out to patients in accordance with the action plan that has been prepared includes identifying the pain scale, providing non-pharmacological techniques to reduce pain, explaining the procedure for using hot compresses, monitoring signs and symptoms of local and systemic infections, identifying the causes of hyperthermia, identifying the presence of pain or other physical complaints. The results of the evaluation carried out for three days in the form of SOAPIER and against three nursing diagnoses obtained results, the patient said the pain began to decrease with a scale of 3 TTV still within normal limits, and further interventions were continued by the room nurse.

LIMITATIONS

This study has several limitations that need to be considered in interpreting the results of The study was only conducted on one patient with post-laparotomy appendicitis, so the results of nursing care cannot be generalized to the entire population of post-laparotomy patients. Limited Intervention Time: Nursing interventions were implemented in a relatively short time (3 days), so they cannot yet describe the long-term effectiveness of the nursing actions provided.

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