

Section: General Nursing

Acupressure therapy to reduce pain in patient with post laparotomy

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Abstract

Appendicitis is an inflammation of the appendix that requires immediate surgical intervention to prevent perforation. To avoid this complication, laparotomy is a commonly performed procedure. This study focuses on a 14 years old female patient experiencing post-laparotomy pain. Patients after laparotomy often experience pain that may cause discomfort and hinder the healing process. The pain can result from tissue damage and may affect the patient's breathing and mobility. To alleviate the pain, both pharmacological and non-pharmacological interventions can be applied, such as acupressure, deep breathing relaxation, distraction techniques, and mobilization. Non-pharmacological pain management can help reduce pain perception through cognitive-behavioural interventions, which may alter pain perception, increase comfort, and provide the patient with a sense of control over their pain. Among the commonly used non-pharmacological techniques is acupressure therapy, which involves applying massage-like pressure to specific points on the body to help relieve symptoms. The results showed a significant decrease in pain intensity, reduced abdominal pain, decreased restlessness, and a reduction in grimacing. These improvements demonstrate that non-pharmacological pain management, particularly acupressure therapy, is effective in controlling post operative pain.

Keywords: Acupressure, complementary therapy, nursing care, pain management, surgery

Introduction

Appendicitis is a pathological condition characterized by obstruction of the appendix lumen, which leads to inflammation and is the most common cause of acute abdomen (Krzyzak & Mulrooney, 2020; Salminen et al., 2025). The incidence of appendicitis can occur at any age and in both genders, but individuals between the ages of 10 and 30 are more likely to experience this condition. Appendicitis is caused by luminal obstruction that triggers bacterial overgrowth, necrosis, and perforation (Giudici et al., 2018; Makama et al., 2017). Perforation occurs in 16–40% of cases, with a higher risk in children and the elderly. Perforated appendicitis increases mortality rates up to 5%, whereas the risk of death in non-gangrenous appendicitis is very low (less than 0.1%), but increases to 0.6% in gangrenous appendicitis. According to study, the symptoms of appendicitis vary depending on its stage. Acute appendicitis is characterized by symptoms such as high fever, vomiting, and lower right abdominal pain that makes walking difficult. In contrast, chronic appendicitis presents symptoms similar to gastritis, such as vague pain around the navel, intermittent fever, nausea, and vomiting. The pain may shift to the lower right abdomen and mimic acute appendicitis, though it tends to be milder and recurrent. According to study, appendicitis can cause serious complications such as perforation, which may lead to peritonitis or abscess formation. To prevent these complications, laparotomy is a common surgical procedure performed (Casciola et al., 2002; Jaschinski et al., 2018). Laparotomy is a major surgery involving the opening of the abdominal cavity to access and treat problems in the gastrointestinal, urinary, or gynaecological systems. By making an incision in the abdominal wall, the surgeon can directly access the problematic area.

Post-laparotomy patients often experience pain, which can cause discomfort and hinder the healing process. This pain may result from tissue damage and can affect the patient's breathing and mobility. To alleviate pain, both pharmacological and non-pharmacological interventions can be used, such as acupressure, deep breathing relaxation, distraction, and mobilization. Acupressure is a simple method with many benefits. With proper touch, acupressure can relieve fatigue, improve blood circulation, and stimulate the body to eliminate toxins. By applying pressure to specific points on the skin's surface, acupressure can have positive effects on a person's physical, mental, and social well-being. Based on this background, the author conducted a case study on the application of acupressure therapy in a post-laparotomy patient with acute pain at Muntilan Regional General Hospital.

This case study is significant for nursing care because it provides evidence-based support for integrating non-pharmacological interventions into the standard post-operative recovery protocol for pediatric patients. Laparotomy is a major surgical procedure that often results in complex, multi-dimensional pain that cannot always be fully managed

by analgesics alone. By documenting the successful use of acupressure, this study highlights a safe, non-invasive, and cost-effective tool that nurses can use to bridge the gap between clinical pain and patient comfort. Furthermore, it emphasizes the nurse's role as an educator and advocate, demonstrating how involving the family in the healing process can ensure continuity of care and improve the patient's psychological outlook. Ultimately, this case study validates the move toward holistic nursing, showing that biological mechanisms like endorphin release can be triggered through simple manual therapy to enhance both physical recovery and emotional well-being.

Case Description

This case study centers on a 14-year-old female admitted to Muntilan Regional General Hospital on January 26, 2025, presenting with a one-day history of abdominal pain, nausea, vomiting, fever, and distension. Notably, while the patient could defecate and urinate, she reported an inability to pass gas since the onset of symptoms. Following her surgical procedure, a nursing assessment on post-laparotomy day 4 revealed persistent abdominal pain at the incision site, accompanied by restlessness, difficulty concentrating, and frequent grimacing. Based on these clinical findings, three nursing diagnoses were established: Acute Pain (D.0077), Risk for Infection (D.0142), and Impaired Physical Mobility (D.0054). Acute pain was identified as the primary priority, with the goal of reducing pain intensity, restlessness, and visible distress according to SIKI and SLKI standards. The management plan integrated both pharmacological and non-pharmacological approaches, including pain characteristic identification, the administration of paracetamol, and a specific focus on acupressure therapy. Over three consecutive days, acupressure was applied using 30 clockwise circular strokes at targeted points. The intervention demonstrated a progressive positive impact: by the first day, the patient appeared more relaxed; by the second, she was noticeably calmer; and by the third day, the patient reported a sustained sense of relaxation while her family successfully demonstrated their ability to perform the technique independently.

Despite these improvements, the nursing evaluation on day 4 indicated that the patient still experienced intermittent abdominal pain, particularly during movement, recording a score of 5 on the Visual Analog Scale (VAS). However, a significant shift in the patient's baseline distress was observed throughout the treatment period. While she initially presented with expressions of sadness and acute discomfort, the consistent application of acupressure facilitated a transition to a neutral facial expression. These results suggest that while post-operative pain remains a challenge during mobilization, the integration of acupressure provides a valuable non-pharmacological tool for reducing pain intensity and improving the psychological well-being of paediatric post-laparotomy patients.

Discussion

This case study follows a 14-year-old female recovering from an appendectomy on her fourth day post-laparotomy. Her initial admission was prompted by severe abdominal pain, nausea, vomiting, and fever, alongside clinical signs of abdominal distension and an inability to pass gas. Dietary assessments revealed a frequent consumption of instant noodles and a significant lack of fibre, a known risk factor for appendicitis (Arnbjörnsson, 1983; Echevarria et al., 2023). As noted by study, low-fiber diets can lead to constipation and increased intra-abdominal pressure, which triggers appendiceal obstruction and subsequent bacterial growth (Reijonen et al., 2022; O'Keefe, 2019). While chronic cases may sometimes be managed with antibiotics, acute inflammation typically requires prompt surgical intervention to prevent life-threatening complications such as perforation, peritonitis, or abscess formation. To address these risks, a laparotomy was performed—a major surgical technique used to access the gastrointestinal system through an abdominal wall incision. While effective for treating the underlying pathology, laparotomy often results in post-operative complications, including cardiovascular issues, electrolyte imbalances, and significant pain. Post-laparotomy pain is a complex combination of sensory and emotional discomfort resulting from surgical trauma and is often associated with intense autonomic and behavioral responses. The primary goals of post-operative care are to reduce these complications and accelerate functional recovery through a combination of pharmacological and non-pharmacological strategies, such as deep breathing exercises, early mobilization, and acupressure.

Acupressure serves as a non-invasive, highly effective method for pain modulation by applying targeted pressure to specific points on the skin (Li et al., 2024; Yao et al., 2025). This technique stimulates the body's endogenous opioid system and increases endorphin levels, which naturally blocks pain transmission and restores energy balance without adverse side effects. In this clinical case, after three days of consistent acupressure intervention, the patient's acute pain was not entirely eliminated but was significantly reduced. Observations using the Visual Analogue Scale (VAS) reflected this progress, as the patient transitioned from a state of visible distress to appearing relaxed and able to smile. These findings align with study, confirming that acupressure is a safe and potent supportive therapy for periodic pain reduction in post-surgical patients (Liu et al., 2022; Chang et al., 2012).

In this case study, the nurse plays a pivotal role as a clinical practitioner and an educator by bridging the gap between high-tech surgical intervention and holistic recovery. Initially, the nurse serves as a primary assessor by utilizing the Visual Analogue Scale (VAS) to quantify the 14-year-old patient's pain intensity and monitor for post-laparotomy complications like abdominal distension. As a care provider, the nurse is responsible for the precise execution of the nursing care plan, which integrates pharmacological paracetamol with the systematic application of non-pharmacological acupressure. By applying targeted pressure to specific points for 30 clockwise strokes, the nurse

directly facilitates the release of endogenous opioids to naturally modulate the patient's pain response. Furthermore, the nurse acts as an essential educator by teaching the patient's family how to perform these acupressure techniques independently to ensure continuity of care. The nurse also assumes the role of a counsellor, providing emotional support that helps transition the patient from a state of visible distress to a more relaxed and positive psychological outlook. Throughout the four-day process, the nurse continuously evaluates the effectiveness of the therapy by observing behavioural changes such as reduced grimacing and improved focus. By documenting these physiological shifts, the nurse provides evidence-based validation for using complementary therapies in a paediatric surgical ward. Finally, the nurse coordinates with the multidisciplinary team to ensure that the patient's recovery milestones, such as early mobilization and the return of bowel function, are met safely. Ultimately, the nurse's multifaceted involvement ensures that the patient receives a comprehensive, patient-centred healing experience that addresses both physical trauma and spiritual comfort.

Conclusion

The comprehensive nursing process—consisting of assessment, diagnosis, planning, and implementation over four sessions—demonstrated that non-pharmacological interventions are highly effective in managing post-laparotomy recovery. The integration of these therapies led to a significant reduction in acute pain intensity, visible grimacing, and post-operative anxiety. Beyond physiological stabilization, the intervention enhanced the patient's psychological well-being by improving their sense of safety and overall comfort. These results underscore the importance of incorporating non-pharmacological strategies into holistic nursing care to achieve superior clinical outcomes and a more patient-centered recovery experience.

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