

Section: General Nursing

Abdominal massage therapy to solve constipation in patient with congestive heart failure

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Abstract

Constipation poses a significant health risk to patients with heart conditions, as the excessive straining during defecation can trigger dangerous cardiovascular events and increase mortality rates. This case study investigates the effectiveness of abdominal massage as a nursing intervention to alleviate constipation in a patient diagnosed with Congestive Heart Failure (CHF). Adopting a descriptive case study design for this final scientific paper, the research focused on a single patient experiencing difficulty with bowel movements. Following the implementation of abdominal massage, the patient's Constipation Assessment Scale (CAS) score decreased from 5 to 3, indicating a measurable improvement in gastrointestinal function. These findings suggest that abdominal massage is an effective, non-invasive intervention for managing constipation in CHF clients. Consequently, this study serves as a valuable clinical reference and a foundation for future research into integrated cardiac and gastrointestinal care.

Keywords: Abdominal massage therapy, congestive heart failure, constipation, nursing care, nutrition

Introduction

Constipation is a prevalent gastrointestinal disorder characterized by infrequent bowel movements, straining, and a sense of incomplete evacuation (Andrews & Storr, 2011; Jani & Marsicano, 2018). It is a significant clinical issue, particularly among the elderly, with approximately 33% of adults aged 60 and older affected (Forootan et al., 2018; Hayashi, 2022). However, the incidence is notably higher among patients with Congestive Heart Failure (CHF), where prevalence rates range from 40% to 60% (Namiuchi et al., 2025; Isogai et al., 2024). In this population, constipation is not merely a discomfort but a serious complication that can diminish quality of life and increase cardiovascular strain. The high frequency of this condition in CHF patients is driven by a complex interplay of physical, dietary, and pathological factors. Primarily, the fatigue and dyspnoea associated with CHF severely limit a patient's physical activity, which in turn slows intestinal motility and delays transit time (Meng et al., 2024; Pavlovic et al., 2022). Dietary management of heart failure also inadvertently contributes to the problem; necessary restrictions on fluid and sodium intake often result in a deficit of the fibre and hydration required to maintain regular bowel function. Furthermore, the underlying pathophysiology of advanced CHF leads to decreased cardiac output and subsequent organ hypoperfusion. When the intestines receive inadequate blood flow, gut motility is compromised, directly triggering constipation. Finally, systemic fluid retention can cause abdominal oedema, which exerts external pressure on the intestines and further obstructs the defecation process.

Effectively managing constipation in patients with CHF requires a holistic approach that addresses lifestyle factors, medication side effects, and the physiological changes inherent to the disease. While pharmacological options include the administration of oral or rectal laxatives, nurses can play a pivotal role through non-pharmacological interventions. These include promoting high-fibre diets, encouraging the consumption of warm water, and performing abdominal massage. Extensive research has highlighted abdominal massage as a potent complementary therapy capable of preventing and alleviating gastrointestinal disorders across various populations, particularly among the elderly and those with chronic illnesses (Dehghan et al., 2020; Afitasari & Hudiawati, 2021). Abdominal massage functions by enhancing intestinal motility, stimulating the defecation reflex, and relieving abdominal muscle tension. As a non-invasive and cost-effective technique, it requires no specialized equipment, making it an ideal bedside intervention. By applying gentle, rhythmic strokes following the natural path of the colon, nurses can stimulate peristalsis, accelerate the digestive process, and reduce the physical discomfort associated with bowel movements. Given its simplicity and efficacy, abdominal massage holds significant potential as a standard non-pharmacological strategy for improving the quality of life in CHF patients.

This case study is significant for nursing because it addresses a high-risk, frequently overlooked complication in cardiac care. While nursing focus in CHF often prioritizes respiratory and hemodynamic stability, constipation represents a hidden danger; the Valsalva manoeuvre (straining during defecation) can trigger life-threatening arrhythmias or sudden cardiac arrest in weakened hearts. By investigating abdominal massage, this study provides

nurses with a validated, "heart-safe" alternative to manage bowel movements without the physiological stress of straining. Furthermore, this study empowers nurses to lead with non-pharmacological, evidence-based interventions. CHF patients are typically burdened by polypharmacy, and the addition of stimulant laxatives can sometimes lead to electrolyte imbalances or dehydration—both of which are dangerous for cardiac stability. Abdominal massage offers a cost-effective, equipment-free bedside tool that fits perfectly within the scope of independent nursing practice. It allows the nurse to move beyond simply administering medication to actively performing a therapeutic technique that improves the patient's physical comfort and metabolic health. Finally, this research contributes to the professionalization of nursing by bridging the gap between holistic care and clinical protocols. By documenting a measurable decrease in Constipation Assessment Scale (CAS) scores, the study provides a framework for hospitals to integrate abdominal massage into Standard Operating Procedures (SOPs). It serves as a vital educational resource for nursing students and practitioners, demonstrating that a simple, manual intervention can significantly improve the quality of life and safety for patients living with complex chronic conditions.

Case Description

Mrs. S, a 68-year-old female, was admitted to Budi Rahayu General Hospital on February 16, 2025, at 07:46 WIB. The primary reason for her hospitalization was a chief complaint of worsening shortness of breath, accompanied by a productive cough and a fever that had persisted for 10 days. The nursing assessment, conducted two days later on February 18, 2025, noted her vital signs as a blood pressure of 120/68 mmHg and a respiration rate of 28 breaths per minute. Her past medical history is significant for both Diabetes Mellitus and CHF. Mrs. S reports that she takes her medications regularly and her lifestyle is healthy, as she neither smokes nor drinks alcohol. Her healthcare is covered by BPJS Health Insurance. During the assessment, Mrs. S, who has a height of 150 cm and a weight of 55 kg, was found to have an ideal BMI of 24.4. She has short, greying hair. Due to her current illness, her appetite has decreased, and she is only able to finish half a meal portion. Her physical activity is severely limited and requires assistance because exertion exacerbates her shortness of breath. An abdominal examination was performed, revealing a supple but distended appearance upon inspection. Auscultation noted bowel sounds at a rate of 8 per minute, while palpation showed no enlargement or masses. Percussion of the abdomen produced a tympanic sound. On February 18, 2025, an Internal Medicine specialist initiated a new treatment plan for Mrs. S, which included: IV Fluids: Asering at 12 drops per minute, Injections Levofloxacin 500 mg every 24 hours, Ranitidine 50 mg every 12 hours, Mecobalamin 1 ampule every 12 hours, and Paracetamol 1 gram every 8 hours as needed for fever, Oral Medications: Clopidogrel 75 mg every 24 hours and N-Acetylcysteine 200 mg every 8 hours, Respiratory Therapy: Nebulization with Ventolin and Pulmicort every 8 hours.

Based on the patient's self-report, she voids urine approximately four times a day, with a clear appearance and a normal odour. Her last bowel movement was on February 15, 2025, at 05:30 WIB. She reports a feeling of abdominal fullness, bloating, rectal urgency, and infrequent flatulence. The patient also describes generalized body aches that she rates as a 2 on a 1-10 pain scale. These aches are intermittent and she attributes them to constantly lying down in bed. While she feels she gets enough rest, she must sleep in a semi-Fowler's position to alleviate her shortness of breath. Physical examination findings indicate a fair general condition. Her mucous membranes are moist, conjunctiva is not anaemic, and her skin turgor is elastic. Auscultation revealed bowel sounds at a rate of 8 per minute. Her abdomen is noted to be bloated, but she has active movement in all extremities. Her vital signs are stable: blood pressure 120/68 mmHg, pulse 82 bpm, temperature 36.5°C, respiration 24 bpm, and SpO₂ 95%. Supporting diagnostic tests provide further insight into her condition. A chest X-ray showed increased bronchovesicular markings, sharp costophrenic angles, and smooth diaphragms. The impression from the radiograph was bronchitis and cardiomegaly, with an intact visible skeletal system. An EKG revealed an arrhythmia. Laboratory results showed a low eosinophil count of 0.0, elevated creatinine at 1.45, and an SGOT level of 45.

Diagnosis: a systematic assessment is the initial and most crucial step in data collection, aiming to identify and evaluate a client's health status. This assessment process utilizes both direct interviews with the patient (auto anamnesis) and information from other sources (allo anamnesis). It encompasses a comprehensive review of the patient's biodata, medical history, functional health patterns, a head-to-toe physical examination, and an analysis of supporting diagnostic tests such as lab work, X-rays, and EKGs, as well as current medical therapies. Based on the clinical manifestations and the results of these supporting examinations, Mrs. S's medical presentation is consistent with a diagnosis of CHF. As a result of this comprehensive assessment, the following nursing diagnoses were identified: Constipation related to decreased intestinal motility, as evidenced by the client's complaint of not having a bowel movement for three days. Her last bowel movement was on February 15, 2025, at 05:30. She also reports a feeling of bloating and a sense of rectal urgency, Decreased Cardiac Output related to altered afterload, as evidenced by dyspnea (shortness of breath), Activity Intolerance related to general weakness, as evidenced by her complaint of fatigue.

Plan: Nursing care planning serves as a clear guide for a patient's treatment. This guide not only outlines the specific behaviours expected of the client but also details the actions the nurse must take. All planned interventions are designed to help the client achieve their desired health outcomes. Formulating a nursing action plan is a concrete step to help the client meet established goals and outcome criteria. This plan is comprised of several types of

interventions: observation, therapeutic, health education, and collaboration. The nursing diagnosis of Constipation is related to decreased intestinal motility. This is evidenced by the client's complaint of not having a bowel movement for three days, with the last one recorded on February 15, 2025, at 05:30. The client also reports a feeling of bloating, abdominal fullness, and a sense of rectal urgency. The goal of care is for faecal elimination to improve within 3x24 hours, with the following expected outcomes: improved stool consistency, increased frequency of bowel movements, and increased intestinal peristalsis. Intervention: Identify bowel issues and the use of laxatives to understand their impact on the client's comfort and quality of life, and to prevent complications. Educate the client on the importance of recording the colour, frequency, consistency, and volume of their stool to obtain objective data for accurate assessment. Advise the client to consume high-fibre foods to increase faecal volume and soften stool consistency, provide warm water to the client to increase intestinal peristalsis and soften the stool. Administer abdominal massage, specifically two hours after lunch, as a simple yet effective method to stimulate intestinal movement, identify any medications that may have gastrointestinal side effects for early detection and prevention of complications.

Discussion

This discussion identifies the critical alignments and discrepancies between clinical observations in the actual case of Mrs. S and established evidence-based literature. The analysis follows the structured nursing care process, encompassing assessment, diagnostic formulation, intervention planning, implementation, and a final evaluation using the SOAP (Subjective, Objective, Assessment, Plan) format. Diagnostic findings for Mrs. S were consistent with advanced cardiac dysfunction; her electrocardiogram confirmed the presence of an arrhythmia, while a thorax X-ray revealed clear impressions of both cardiomegaly and bronchitis. These findings solidified the primary medical diagnosis of CHF. However, a secondary but clinically significant assessment on February 18, 2025, revealed that the patient was also suffering from constipation. Subjectively, the client reported a three-day absence of bowel movements, characterized by abdominal bloating and rectal pressure. Objective physical examination findings further supported this, showing abdominal distension, tympanic percussion sounds, and a decrease in bowel sounds to 8 breaths/minute. Furthermore, the patient's CAS score was 5, indicating a state of moderate constipation. In the context of CHF, this gastrointestinal condition is not merely a discomfort but a high-risk trigger for cardiac arrest. The underlying physiological mechanism is the Valsalva manoeuvre; the act of straining during a difficult bowel movement causes a drastic increase in intrathoracic and intra-abdominal pressure. This surge in pressure constricts the vena cava, significantly reducing venous return to the heart. Consequently, preload is diminished, and the heart—already compromised by failure—can only maintain a severely limited cardiac output for a brief duration, potentially leading to acute hemodynamic collapse.

Beyond the mechanical obstruction of venous return, excessive vagus nerve activation represents a secondary, life-threatening mechanism for cardiac arrest in compromised patients. The elevated intrathoracic pressure associated with straining triggers a potent parasympathetic reflex; this stimulation of the vagus nerve can induce profound bradycardia and widespread vasodilation. In patients with pre-existing structural heart disease, such as Mrs. S, this sudden drop-in heart rate and systemic vascular resistance can lead to vasovagal syncope or, in extreme cases, a temporary cessation of cardiac electrical activity known as asystole. Furthermore, the cessation of straining often results in a "rebound" effect, causing a dangerous spike in arterial blood pressure. For individuals suffering from hypertension or coronary artery disease, these rapid fluctuations in afterload significantly increase the risk of myocardial infarction or acute left ventricular failure. To mitigate these risks, the nursing team initiated a specialized abdominal massage protocol on February 18, 2025. This non-pharmacological intervention was conducted in daily sessions lasting 7 to 10 minutes, specifically timed two hours after lunch to coincide with the natural gastrocolic reflex. The initial assessment using the Constipation Assessment Scale (CAS) yielded a baseline score of 5, indicating moderate distress. By the second day of the intervention (February 19), the patient reported a subjective decrease in abdominal bloating and a reduction in rectal pressure. While objective markers showed the abdomen was less distended and bowel sounds had slightly improved to 10 breaths/minute, the CAS score remained at 5, suggesting that while physiological movement had begun, the patient's perceived discomfort had not yet reached a clinical threshold for a lower score. The cumulative effect of the abdominal massage became most evident during the final evaluation on February 20. The patient's reports of bloating, fullness, and rectal urgency significantly diminished as she successfully achieved small, spontaneous bowel movements. Clinical observations confirmed a reduction in abdominal distension, and auscultation revealed that bowel sounds had normalized further to 12 breaths/minute. Most importantly, the CAS score dropped to 3, transitioning the patient from a moderate to a mild constipation status. This successful resolution not only improved the patient's comfort but, more critically, eliminated the need for the Valsalva maneuver, thereby protecting the patient from the hemodynamic instability and potential cardiac arrest associated with excessive straining.

These clinical findings are highly consistent with the evidence established by Patandung et al. (2021) in a cardiovascular ward in eastern Indonesia. Their study specifically targeted middle-aged and elderly patients with Congestive Heart Failure (CHF) who presented with activity intolerance, fluid restrictions, and a cessation of bowel movements exceeding three days. In that research, four out of five subjects received pharmacological laxatives as a baseline to prevent straining, while one participant relied solely on mechanical intervention. Utilizing the Constipation

Assessment Scale (CAS) as a standardized metric, the researchers administered daily abdominal massages for 7–10 minutes, precisely scheduled two hours post-lunch. The massage protocol employed an eight-step technique adapted from Guy's and St. Thomas' NHS Trust, utilizing olive oil as a lubricant to enhance the therapeutic effect. Notably, the study observed that while the CAS score remained at a moderate level of 5 through the tenth day of intervention, it successfully decreased to a 3 by the eleventh day, reflecting a delayed but significant physiological response. Similar clinical improvements emphasized the positive correlation between abdominal massage and normalized bowel elimination patterns in hospitalized populations (Dhiana, 2022). Patients in their study reported a heightened sense of complete evacuation and a decline in abdominal discomfort. These outcomes align with the findings which concluded that abdominal massage serves as an effective mechanical stimulant to increase bowel movement frequency, soften stool consistency, and alleviate abdominal tension (Okuyan & Bilgili, 2019). Collectively, these studies validate the use of abdominal massage as a critical non-pharmacological nursing intervention to prevent the hazardous hemodynamic consequences of constipation in cardiac patients.

Conclusion

CHF is a severe chronic condition characterized by the heart's inability to pump blood efficiently, resulting in systemic fluid congestion. While clinical focus typically centers on dyspnea and fatigue, the impact of CHF on the digestive system—specifically constipation—is a frequently overlooked complication. This issue is of critical concern because the physical strain associated with difficult bowel movements can place life-threatening stress on a weakened cardiovascular system. In a clinical case study involving a CHF patient suffering from constipation, the implementation of abdominal massage over a three-day period yielded significant positive results, with the patient's CAS score decreasing from 5 to 3. These findings demonstrate that abdominal massage is an effective, non-invasive intervention for managing gastrointestinal distress in cardiac patients. Consequently, this study serves as a vital reference for the development of holistic nursing protocols. Based on these outcomes, several recommendations are proposed to enhance patient safety. Nursing students should be encouraged to integrate abdominal massage into care plans for CHF patients to mitigate the risks associated with excessive straining. Furthermore, healthcare facilities are urged to incorporate these findings into their SOPs. Finally, educational institutions and the broader nursing profession should utilize this research as a foundational resource to improve the comprehensive, evidence-based care provided to individuals living with CHF.

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