

Application of Finger Clasp Relaxation to Reduce Pain Intensity in Post Pyelolithotomy Patients at PKU Muhammadiyah Hospital Yogyakarta: A Case Study

Jihan Purbadewi, Wulan Noviani

Ners Professional Education Study Program, Faculty of Medicine and Health Sciences,
Universitas Muhammadiyah Yogyakarta, Indonesia
jihanpdewi27@gmail.com, wulan.n@umy.ac.id

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Abstract

Introduction: Nephrolithiasis or kidney stone disease is a condition in which the formation of stone-like masses in the kidneys caused by the presence of certain substances such as salts and minerals. Kidney stones can form and move through the urinary tract which includes the kidneys, bladder, and urethra. **Objective:** Finger grip relaxation therapy is a non-pharmacological technique for pain management that can be done independently with the aim of reducing pain by reducing muscle tension that causes pain. **Method:** This study adopts a descriptive method with a case study approach that focuses on nursing care. Case study subjects with one patient postoperative pyelolithotomy. **Result and Discussion:** Finger grip relaxation can be used as another therapy to reduce pain levels in patients who have undergone surgery for the treatment of kidney stones. **Conclusion:** The results of this case study showed a decrease in scale where initially patients complained of pain on a scale of 8 after three days of therapy there was a decrease to a scale of 4.

Keywords: Finger Grip Therapy; Finger Grip Relaxation; Pain Management; Pyelolithotomy;

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Introduction

Nephrolithiasis Or kidney stone disease is a stone-like formation that originates in the kidneys due to calcium and oxalic acid that accumulates. Kidney stones can occur in parts such as the urinary tract, from the kidneys, ureters, bladder, and urethra. The longer it settles, the harder the substance becomes and resembles the shape of a stone (Exsa Hadibrata & Wardhana, 2021).

According to WHO worldwide there are 1-2% of the population experiencing kidney stone disease. Of the hundreds of sufferers, the disease is the most common disease found in the field of urology (Fadhila, 2021).

Nephrolithiasis is a problem that occurs throughout the world. The incidence of each year is in the range of 3-5% and the estimated incidence that occurs in a lifetime in the range of 15-25%. Nephrolithiasis can recur, where in the first year as much as 10%, in 5-10 years as much as 50% and in 20 years in the range of 75%. (E Hadibrata & Suharmanto, 2022). The incidence of kidney stone cases in Indonesia is approximately 6 in 1000 Indonesians who experience kidney stones (Exsa Hadibrata & Wardhana, 2021).

Literature Review

Nephrolithiasis also known as kidney stones is a type of clinical infection that can be caused by various component factors of clogging crystal stones that slow down the work of the kidneys in the calyx or back, which can be caused by disruption of solubility and deposition of salts in the urinary tract (Fikriani & Wardhana, 2018). Symptoms that appear vary depending on the size of kidney stone formation such as severe pain that causes fever or chills, there is a sense of nausea, vomiting and stomach disorders to blood coming out of the urine or blockage in the urinary tract (Nengsi, 2018).

Pyelolithotomy itself is a surgical procedure to remove stones from the kidneys through an incision in the upper part of the renal pelvis. This procedure involves making an incision in the renal pelvis and removing the kidney stone manually or using assistive devices such as lasers (Aslim et al., 2016).

After the patient is performed *pyelolithotomy* will feel postoperative pain. Postoperative pain requires comprehensive non-pharmacological and pharmacological treatment, one of which is finger grip relaxation therapy. Relaxation is a technique to relax the skeletal muscles with the aim of lowering pain by reducing muscle tension that causes pain. The finger grip relaxation technique is one of the non-pharmacological techniques in pain management by combining deep breath relaxation and finger grip. In addition, finger grip relaxation techniques can be done easily without the need for special equipment, so they can be done anywhere and anytime (Hasaini, 2020).

There is a relaxation technique known as "finger hold" or "tapping", which involves fingers and acupressure points on the body to drain energy in the body (Astutik & Kurlinawati, 2017). Relaxation therapy techniques grasping fingers can be done independently in a sitting position or lying comfortably and calmly for approximately 3-5 minutes. When performing this technique, focus on the sensations that appear on the

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hands and fingers and notice how the tension in the muscles of the hands and fingers is reduced, so as to help reduce physical and emotional tension (Wati & Ernawati, 2020).

Method

This research applies a descriptive approach with a case study design that focuses on nursing care. The study subjects consisted of one patient who had undergone *pyelolithotomy surgery*. Previous research subjects were asked to fill out a consent sheet willing to be the subject of a case study with *informed consent*, after that, an assessment of the level of pain, placed the patient in a comfortable position, measured vital signs, and then provided therapy in the form of finger grip relaxation techniques. An evaluation will be conducted and the results will be documented. The finger grip relaxation technique will be performed three times a day or when the patient complains of pain, and is done for three days after the patient performs *pyelolithotomy surgery*.

This case report has the contents of managed patient case data consisting of case descriptions and *settings*, explanations of cases which include complaints, location, intensity, and signs and symptoms. Then the third explains related to the history of the disease and the process of disease development that occurs as well as the nursing problems faced. Furthermore, the fourth is an explanation related to factors that aggravate and reduce the severity of the condition. While the last is the patient's and family's medical history.

Results and Discussion

Result

The results of the intervention after the patient is given finger grip relaxation therapy can help reduce the intensity and scale of postoperative pain of kidney stones in addition to pharmacological therapy or drugs. Finger grip relaxation therapy techniques can be done by patients sitting or lying comfortably and calmly for approximately 30-50 minutes by grasping one finger at a time and focusing pressure on the fingers. Before giving finger grip relaxation therapy beforehand, patients are taught how to do deep breath relaxation which will be combined with finger grip therapy.

Before doing finger grip therapy, the nurse gives an example first regarding how to do finger grip therapy. When given finger grip relaxation therapy with a combination of deep breath relaxation, the patient can immediately do it independently and does not need help because the patient's upper extremity is no problem. To check the effectiveness of finger grip therapy, before and after giving finger grip therapy, the nurse asks the patient's pain intensity.

After 3 days of finger grip relaxation therapy, the patient's pain scale which was initially 8 decreased to a scale of 4 on the third day. When the first day of finger grip relaxation therapy, the patient's pain scale was 8 and after finger grip relaxation therapy the pain scale was obtained to 7. While on the second day of finger grip relaxation therapy, the patient's pain scale decreased to 6. On the last day of finger grip relaxation therapy,

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the patient's pain scale dropped again to 4. From the results of giving finger grip relaxation therapy for 3 days, it can be said that finger relaxation therapy can help to reduce the scale of pain in patients after kidney stone surgery. Before the patient was given hand-held relaxation therapy, the patient complained of pain on a scale of 8, after three days of hand-held finger therapy intervention, the pain scale decreased by a scale of 4.

Discussion

Kidney stone disease or nephrolithiasis is caused by genetic or congenital although rare. The next cause is the factor of food and drinks that contain ingredients that can cause deposits in the urine. One example is foods rich in calcium, such as oxalate and phosphate.

Not only that, work and physical activity factors can also affect the development of kidney stone disease. Individuals who do work that involves a lot of sitting have a higher risk of developing kidney stone disease than those who rarely move. In addition, lack of physical activity, both in the form of exercise and daily activities, can lead to decreased blood circulation and smooth flow of urine in the body. The importance of physical exercise can be used to improve and improve overall body health (Relawati et al., 2018)

Patients who have undergone incision surgery often experience pain. The majority of patients who have had surgery experience acute pain and it can worsen if inflammation or infection occurs. Therefore, treatment techniques are needed that can help reduce pain, one of which is the finger grip relaxation technique. In Wati & Ernawati's research, (2020) it was found that finger grip relaxation techniques can reduce pain levels in postoperative patients. This therapy is done by grasping the fingers while relaxing deep breath which can increase tolerance to pain.

Another study from Hasaini, (2020) also explained that patients who were given finger grip relaxation technique therapy reported a decrease in pain. This technique is performed for 30-50 minutes on the first day after pyelolithotomy surgery and has proven effective in pain management. This therapy provides comfort so that patients can control pain. Finger grip touch gives a good response to the body such as can relax the body's muscles, increase blood and lymph flow circulation, so that it can eliminate lactic acid found in muscle fibers and can reduce fatigue and stress in postoperative patients .

The use of finger-grip relaxation techniques gives a positive response to the body with the effect of relaxing muscles, improving blood circulation and the lymphatic system. This can help eliminate lactic acid accumulated in muscle fibers, reduce fatigue, and reduce stress and tension levels.

Conclusion

Finger grip relaxation therapy can be done to help reduce the intensity of pain in patients postoperative kidney stones. It can be characterized by a decrease in the scale which initially patients complain of pain on a scale of 8 after 3 days of therapy there is a decrease to a scale of 4. This therapy can be chosen as an independent nursing measure to reduce pain levels in patients who have undergone *pyelolithotomy* surgery. Healthcare

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professionals can apply finger grip relaxation therapy as a complementary approach to reduce pain on the patient's first day postoperatively *pyelolytomy*.

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