



# Complementary Therapy: Foot and Hand Massage on Reducing Post Laparotomy Pain Levels with Adenomyosis (Case Study)

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## ABSTRACT

Adenomyosis is a disorder of the reproductive system characterized by tissue that lines the uterus growing into the muscular wall of the uterus. At the time after the postoperative patient complained of pain postoperative laparotomy cystectomy. The application of the intervention that will be given to treat pain is the application of foot and hand massage to reduce post-laparotomy pain. The aim of the study was to apply foot and hand massage to reduce post-laparotomy pain levels with adenomyosis. The research method is in the form of evidence based practice. The intervention was carried out for 3 days, with 2 sessions each morning and evening, with pain scale measurements using the NRS and WBFPRS. Intervention is carried out before the administration of medical therapy. Intervention is only done with one sample. The results of the study described a decrease in pain levels after massage. The results obtained by the patient seemed relaxed and able to do activities independently. It can be concluded that foot and hand massage can reduce pain levels in post-laparotomy patients, with a pain scale of NRS 2 and WBFPRS 2.

## INTRODUCTION

Adenomyosis is a disorder of the reproductive system which is characterized by the tissue lining the uterus growing into the muscular wall of the uterus (Iskandar, 2021). Two other common disorders of the uterus, endometriosis and uterine fibroids are also estrogen dependent and, like adenomyosis, are accompanied by symptoms of dysmenorrhea, pelvic pain, abnormal uterine bleeding and infertility, and the two often coexist, 18% of women with adenomyosis have endometriosis together and 47% had uterine fibroids (Zhai et al., 2021). Women who experience adenomyosis show pain manifestations before surgery due to the physiology of the disease and after surgery due to the surgical procedure itself (Gunther & Walker, 2022). It was reported that the annual incidence of adenomyosis was based on the use of surgical procedures, namely 1.6 cases per 1000 women aged 15–49 years. Women with complaints of dysmenorrhea are 40–80%, while women with infertility are around 20–50% (Padaka et al., 2020).

Management of adenomyosis according to Putra & Anggraini, (2022) medical therapy and operative therapy, medical therapy is only dealing with signs and symptoms which are in the form of non-steroidal anti-inflammatory drugs (NSAIDs) and hormones. Most of the management is most often in the form of operative therapy, where this adenomyomectomy is in the form of laparotomy or laparoscopic surgery, usually the patient experiences severe pain as a result of the operation.

Pain has a detrimental effect that can prolong the body's recovery after surgery, difficulty mobilizing, impaired activity of daily living (ADL) in postoperative mothers (Salamah & Astuti, 2020). Therefore, it is important to provide management or intervention that can reduce complications and increase mobility in postoperative patients. The biological impact that can be caused is that the patient has limitations to move, changes in some of the patient's vital signs, and changes in the patient's facial expressions. The psychological impact that can be caused by pain is stress, in which pain can cause encouragement to stress so that it has an impact on suppressing the immune system, inflammation, and can inhibit healing (Sri et al., 2018).

According to Salamah & Astuti, (2020) there are non-pharmacological pain management methods or complementary therapies, one of which is massage techniques. Massage techniques or massage are felt

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to be more effective in reducing or eliminating discomfort, the actions taken are very simple and can be done by oneself or with the help of others. Massage techniques are very effective in reducing postoperative acute pain. In a study by Abbaspoor et al., (2014) that foot and hand massage as a complement to effectively reduce post-caesarean section pain and can reduce the number of drugs and their side effects.

According to Kumari & Mary, (2023) Apart from caesarean operations, foot massage can be performed in patients with post-laparotomy or abdominal surgery. The advantage of this massage technique is that it can stimulate the nerves (A-Beta) in the feet and skin layers which contain tactile and receptors. Receptors transmit nerve impulses to nerve centers. The gate control system is activated through inhibitory interneurons where interneuron excitability is inhibited, resulting in the inhibitory function of the T-cell closing the gate. Pain messages are not transmitted to the central nervous system. Therefore, the brain does not receive pain signals or messages, so pain is not interpreted (Chanif et al., 2013). According to Salamah & Astuti, (2020) there are pharmacological and non-pharmacological pain management methods or complementary therapies, for non-pharmacology one of which is massage techniques. Massage or massage techniques are considered more effective in reducing or eliminating discomfort.

## **METHOD**

This study uses evidence based practice research methods that apply foot and hand massage to one patient. The intervention was in the form of foot and hand massage. Foot massage is a massage technique to inhibit pain and reduce postoperative pain (Wang et al., 2022). Massage is a light touch and massage technique that can improve relaxed conditions. Hand massage itself means providing stimulation under the dermis skin tissue by providing gentle touch and pressure to provide a sense of comfort (Fadillah & Astuti, 2019). This therapy is given 2 times a day, namely morning and evening starting at 09.00 and 14.00 WIB with an interval of every 20 minutes. The measuring scale used is NRS and WBFPRS.

This intervention is given before the administration of medical therapy with the result of reducing the patient's pain level. To find out how effectively it can reduce the level of post-laparotomy pain. The intervention was carried out in the patient's bed using a towel as a base in foot and hand massage therapy and olive oil as an essential oil. The author does massage starting from the right foot for 5 minutes, and the left foot is done for 5 minutes, the right hand is 5 minutes, and the left hand is 5 minutes. After doing this foot and hand massage, the authors evaluate the patient regarding feelings of comfort, and the authors measure BP and measure pain levels using the numbering rating scale and the Wong Baker Pain Rating Scale.

## **RESULT**

At 09.00 Wednesday, 03 May 2023 prior to the foot and hand massage intervention, Subjective obtained: Mrs. S said the pain was because he had just finished surgery O: Pain in the post-op area, pain like aching and cutting, pain in the abdominal area, pain felt when moving (repeated-repeated) looked grimacing, pain scale 6 using the NRS and wong baker rating scale. BP : 99/79 mmHg, N : 109 x/min, RR : 20 x/min. After the foot and hand massage intervention was carried out, the results were obtained, S: said he looked relaxed, pain in the post op area was reduced and comfortable. O: pain like aching and cutting, pain in the stomach area, pain scale 4 has decreased, pain is felt when moving (repeats and turns) pain scale using the NRS and wong baker rating scale. BP : 120/80mmHg, N : 99 x/min, RR :16 x/min, S : 36.7°.

**Table 1.** Results of the implementation of the intervention

Day/date/time	Before intervention	After intervention
Wednesday, 03 May 2023 9:00 a.m	<p><b>S:</b> Mrs. S said the pain was because he had just finished surgery and the patient said he had difficulty sleeping last night</p> <p><b>O:</b> Pain in the post-op area, pain like aching and cutting, pain in the abdominal area, pain felt when moving (comes and goes), pain scale 6 using NRS and WBFPRS, the patient looks grimacing, being protective, the client looks uneasy and restless, lying in bed, unable to turn right and left</p> <p>-BP : 99/79mmHg, -N : 109 x/min, -RR : 20 x/min, -S : 36.7°C</p>	<p><b>S:</b> the patient says the pain has decreased, the patient says the difficulty sleeping has decreased</p> <p><b>O:</b> the patient looks relaxed, the patient looks calm, the patient is cooperative, the patient looks comfortable during the massage, the pain scale is measured using the NRS and WBFPRS, the pain scale decreases 4 out of 6, the patient performs left and right tilts independently</p> <p>-TD : 120/80mmHg, -N : 99 x/min, -RR :16 x/min, -S : 36.7°</p>
14.00 a.m	<p><b>S:</b> the patient says that pain appears little by little when moving, the client says that if you sneeze or cough it still hurts</p> <p><b>O:</b> the patient can sit up, the patient can tilt left and right on his own, grimacing is still there. Pain scale 4 was measured using the NRS and WBFPRS. Still being protective.</p> <p>-BP : 108/88mmHg, -N : 99 x/min, -RR : 18 x/min, - S : 36.7°C</p>	<p><b>S:</b> the patient says that after the massage the pain has decreased, the pain scale is 3, the patient says it still hurts when moving and sitting</p> <p><b>O:</b> the patient looks relaxed, the patient looks calm, the patient is cooperative, the patient looks comfortable during the massage, the pain scale is measured using the NRS and WBFPRS, the pain scale has decreased by 3, the patient performs left and right tilts independently, the client is able to sit up, grimaces decrease, demeanor no protection</p> <p>-BP : 101/77mmHg, -N : 82 x/min, -RR : 20 x/min, -S : 36.7°</p>
Thursday 04 May 2023 09.00 a.m	<p><b>S:</b> the patient says that he still feels pain when he stands or sneezes, he still feels pain when he gets out of bed, the scale of pain he feels has started to decrease, namely 2 out of 4 using the NRS and WBFPRS</p> <p><b>O:</b> the protective attitude towards pain is reduced, the patient looks calm, there is no grimace, the patient can go to the toilet independently, the gait still looks hunched over and holds the stomach area</p> <p>-BP : 108/88mmHg, -N : 87 x/min, -RR : 18 x/min, - S : 36.7°C</p>	<p><b>S:</b> the patient said it would be better if after the massage he slept longer, said he could go to the toilet independently and tried it independently today, the patient said the pain had decreased on scale 2 using NRS and WBFPRS, the pain still comes and goes, pain sometimes comes suddenly if moving too fast.</p> <p><b>O:</b> The patient looks relaxed and calm, there is no grimace, he can go to the toilet independently, his posture when walking is still slightly</p>

		bent by holding his stomach. -BP : 122/92 mmHg, -N : 80 x/min, -RR : 18 x/min, - S : 36.7°C
14.00 a.m	<p><b>S:</b> the patient says it hurts still felt when getting up or sneezing, still feeling pain when getting out of bed and when going to the toilet, the patient says the pain comes and goes, it is still felt every time he moves. The patient said that the current pain scale had improved 1-2 using the NRS and WBFPRS and was still being felt. Patient complains just dizzy right now.</p> <p><b>O:</b> the patient looks calm and relaxed, the patient is sitting upright, the protective attitude towards pain is gone, there is no grimace</p>	<p><b>S:</b> the patient says the pain is gone, patient said there were no complaints of dizziness. The patient said the pain scale was 1-2 using the NRS and WBFPRS, occasionally he still felt pain like being stabbed, but not often, the patient said it was easier to see pictures of the WBFPRS pain scale than the NRS.</p> <p><b>O:</b>the patient looks relaxed and calm, there is no grimace, can go to the toilet independently, the patient can get up and down from bed</p>

## DISCUSSION

Nursing problems obtained in evidence based nursing priority nursing diagnoses are acute pain associated with physical injury agents/post-laparotomy surgery. The problem obtained from this case is acute pain after laparotomy surgery. According to Fitriyanti & Machmudah, (2020) acute pain appears related to the presence of major symptoms and signs in patients with acute pain problems based on subjective data, namely patients who complain of pain. Acute pain that arises as a result of post-laparotomy surgery where there is an area that is injured due to an incision, where this area of the wound does not get blood supply because there is no nutrition to the wound in the area around the surgery, as a result the pain response appears where the tissue is cut off because the supply of oxygen to the tissue is reduced the wound is not fulfilled which results in an inflammatory reaction or pain (Putra & Anggraini, 2022).

The implementation is carried out in accordance with Evidence Based Nursing, carried out in an appropriate, safe and appropriate way for the patient's condition. Actions taken to reduce post-laparotomy pain are in accordance with evidence-based nursing foot and hand massage, namely in the form of non-pharmacological therapy. This massage therapy was carried out for two days, where the researchers adjusted the patient's condition, carried out in the morning and evening for 20 minutes, each extremity was carried out for 5 minutes. Measuring pain intensity the authors use two measurements, namely using the NRS and WBFPRS. According to Meena & Sandhiya, (2019) it was carried out for 3 consecutive days given hand and foot massages for 20 minutes, every morning and evening, in line with the main journal. Pain evaluation was carried out before and after the intervention using the NRS pain scale. This is in line with research (Kumari & Mary, 2023) which was carried out for 20 minutes, each extremity was carried out for five minutes every day in the morning and evening, for three days.

There is a difference between the authors and previous researchers where the authors added pain measurements using the Wong Baker pain rating scale. This scale consists of 6 faces that differ in describing pain. This scale is usually performed on adult patients and children > 3 years who cannot describe pain with numbers (Andarmoyo, 2013) (Andarmoyo, 2013). In the patient the author did foot and hand massage therapy, this was done two hours before administration of analgesic drugs. The study is in line with that conducted by (Kumari & Mary, 2023) Hand and foot massage was given to the Experimental group with the help of coconut oil for five minutes on each extremity, a total duration of 20 minutes, twice a day in the morning and evening, for the first three days (performed before and after two hours of pain medication administration). The implementation was carried out after the massage to measure the pain scale using the NRS and WBFPRS. Where patients with NRS measurements mention pain levels with the numbers mentioned. Research by Anita et al., (2022) states that the number 0 means no pain, the number 1-3 is categorized as mild pain, the number 4-6 is categorized as moderate pain, the number 7-10 is severe pain.

In a study by Pratitdya et al., (2020) postoperative patients two hours after the effects of the anesthetic wore off, pain levels were measured. There is a significant difference from the pain score of the VAS scale to the NRS scale, as well as the WBFPRS scale. The conclusion from this study is that the NRS, WBFPRS or VAS all work well in measuring pain. WBFPRS has the best scale interpretation value in the respondent's understanding. In addition to foot and hand massage therapy, the author also provides deep breathing relaxation therapy to reduce pain. Based on Lailiyah's research (2019) for post-cesarean mothers, the research conducted by this researcher provided deep breathing relaxation techniques and massage techniques for 15 minutes in 1 day, post-SC mothers were able to reduce the pain scale so that mothers felt more relaxed, comfortable and calm.

Researchers involved families to do foot and hand massage. The results obtained by the family can understand the foot and hand massage process which can reduce pain, the family can mention the duration of giving foot and hand massage, the family can explain again regarding the procedure to be carried out foot and hand massage. The material used for foot and hand massage of patients and families only has lotion, and can be used for foot and hand massage. Related to the main journal Meena & Sandhiya, (2019) the material used is in the form of lotion or essential oil or coconut oil. In the study of Hariyanto et al., (2023) reflexology in the areas of the hands and feet which empowers families as executors of massage gives a direct touching effect on family members who are undergoing hemodialysis. Based on observations of the involvement of family empowerment in the implementation of light exercise and reflexology, it has a positive impact on anxiety responses, namely systolic blood pressure, diastolic blood pressure, pulse, and more stable respiration.

Evaluations obtained during the 2 days of intervention every morning and evening found: pain in the post-op area decreased, pain like aching and cutting decreased, pain in the abdominal area decreased, scale 2 pain felt when moving or standing and coughing BP: 120 /88mmHg, N : 78 x/min, RR : 18 x/min, S : 36.7°C. In accordance with the outcome criteria to be achieved, there was a significant reduction in the level of post-laparotomy pain every day using the NRS and WBFPRS pain scales. In line with the research by Marselina et al., (2022) evaluated post-sectio caesarea mothers on the third day and found that the client's pain scale had decreased to a scale of 3, before the foot and hand massage was performed, the client's pain was on a scale of 6. Meanwhile, in respondent two, after foot and hand massage was carried out on the third day, an evaluation of the pain scale was also carried out and on Mrs. A also experienced a decrease, namely the pain to a scale of 1, the client said the pain was almost gone but there was still a little compared to before the foot hand massage therapy was carried out. The patient's pain scale was on a scale of 4. Evaluation of the family accompanying the patient showed that the family could re-implement this foot and hand massage therapy to reduce postoperative pain. Where the family can carry out family functions, where the family is able to care for sick family members. Families that can carry out health care functions for sick families can help sick family members achieve better conditions physically and psychologically (Kusumaningrum et al., 2016).

## CONCLUSION

*The results obtained by the patient seemed relaxed and able to do activities independently. It can be concluded that foot and hand massage can reduce pain levels in post-laparotomy patients, with a pain scale of NRS 2 and WBFPRS 2.*

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## CONFLICT OF INTEREST

The authors declare that they have no conflict of interest

## ETHICAL CLEARANCE

The patient has given informed consent prior to the procedure

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