NOVATEUR PUBLICATIONS
JournalNX- A Multidisciplinary Peer Reviewed Journal
ISSN No: 2581 - 4230
VOLUME 6, ISSUE 6, June -2020

EFFECTIVITY THE PROCESS OF WOUND HEALING IN SKIN USING ABSORBABLE THREADS WITH NON-ABSORBABLE TREATH ON POST OPERASI HERNIA INGUINALIS

IDA BAGUS TATWA,

TIO ANANDA SAPUTRA,

IMAM AJIB ISPURWAH,

HARI PURNOMO,

TRI RATNANINGSIH,

[1,2,3,4,5] Sekolah Tinggi Ilmu Kesehatan Bina Sehat PPNI Indonesia
bagustatwa@yahoo.com

ABSTRACT:

The purpose of this study: to determine the difference in the process of wound healing in the skin using absorbable threads with non-absorbable threads on post op Hernia Inguinalis clients at Prof. Dr. Soekandar Mojosari

Research methods: use a comparative study design. The number of samples is 20 clients, 10 clients use absorbable yarn and 10 clients use non absorbable yarn with purposive sampling technique. Data collection was carried out by observing the wound healing process 3 times using observation sheets. Then the data were analyzed using the Mann-Whitney statistical test with the help of SPSS for windows where the value α = 0.05, obtained a significance value of p = 0.016. Because the value of p <α, Ho is rejected

The purpose of this study: to determine the difference in the process of wound healing in the skin using absorbable threads with non-absorbable threads on post op Hernia Inguinalis clients at Prof. Dr. Soekandar Mojosari

Research methods: use a comparative study design. The number of samples is 20 clients, 10 clients use absorbable yarn and 10 clients use non absorbable yarn with purposive sampling technique. Data collection was carried out by observing the wound healing process 3 times using observation sheets. Then the data were analyzed using the Mann-Whitney statistical test with the help of SPSS for windows where the value α = 0.05, obtained a significance value of p = 0.016. Because the value of p <α, Ho is rejected

Main Findings: In the inflammatory phase on the first day it was found that respondents who used absorbable yarn were 70% with no signs of infection, while respondents with non-absorbable 100% had signs of inflammation, signs of exudate and tissue growth could not be evaluated. On the third day the signs of inflammation in respondents with absorbable yarn 10% and in non-absorbable 40%, 20% exudates and 30% tissue growth, on the 7th day there were no signs of inflammation from respondents with absorbable or non absorbable threads, but 1 respondents with network growth.

Research Application: The results of this study can be used and as recommendations for the use and selection of threads in patients diagnosing inguinal hernias in the operating room

Novelity: Choosing the right thread will help speed up the process of healing wounds and tissues

KEYWORDS: Absorbable Thread, Non-Absorbable Thread, Suture Skin Wound Healing Process at Post Op Hernia Inguinalis Client.

INTRODUCTION:

Another definition of lateral inguinal hernia is the protrusion of the abdominal region in the lateral region of the inferior epigastric vessels directly through the two gates, namely the annulus and the inguinal canal, (Syamsuhidayat, 1997-707). Management is herniotomy and herniorapi in patients who experience hernia where the annulus and inguinal canal, (Syamsuhidayat, 1997-707). Management is herniotomy and herniorapi in patients suffering from hernias who cannot return with conservative therapy. In the years 2005 - 2010, the World Health Organization (WHO), obtained data on hernia sufferers reaching 19,173,279 people. In 2011, the United Arab Emirates became the country with the largest number of hernias in the world around 3,950 people. The most widespread hernia spreads are in developing countries such as countries in Africa and Southeast Asia including Indonesia (Gian, 2017). In addition, based on data from the Ministry of Health of the Republic of Indonesia in January 2010 to February 2011, there were 1,243 inguinal hernias (DepKesRI, 2011). The incidence of inguinal hernias is 10 times more than femoral hernias and both have a percentage of about 75-80% of all types of hernias (Sjamsuhidajat, 2010).

Injury is the destruction of normal anatomical structures and functions due to pathological processes originating from internal or external and affecting certain organs (Potter and Perry, 2006 p. 1853). . The wound is said to heal if the surface can be reunited and the strength of the tissue is reached to normal. One of the factors that influence wound healing is the choice of sewing thread.

Sewing threads are strands of material used to ligate (tie) vessels and bring tissue closer (Gruendemann, 2006 p. 520). In the first 5 to 7 days, the tissue response occurs due to thread placement trauma and is basically the same for all threads. Yarn materials are usually classified into two groups, namely those that can be absorbed (absorbable) and cannot be absorbed (non absorbable) (Gruendemann, 2006 p. 521). According to 2019 data in RSUD Prof. Dr. Soekandar Mojosari Hospital, the average number of post-operative Hernia Inguinalis clients every month is 20, the wound was opened on the 3rd day.

By comparing the two threads it will be known that the choice of sewing thread material is very influential in the process of wound healing, but it needs to be explained that the thread is not the only factor that affects the wound healing process but there are other factors that play a role including age, nutrition, medicine , obesity, etc. By doing this research it is expected that nurses need to provide optimal nursing care for the wound healing process in post op clients Hernia Ingunalis

Research purposes is knowing the difference in the process of wound healing in skin sutures using absorbable threads with non absorbable threads on post op Hernia Inguinalis clients at Prof. Dr. Soekandar Mojosari

LITERATURE REVIEW:

Indirect inguinal hernias are also called lateral inguinal hernias that are hernias that come out of the peritonium cavity through the internal inguinal ring which is located lateral to the inferior epigastric vessels, then the hernia enters the inguinal canal (Jong 2004). Direct inguinal hernias are also called medial inguinal hernias that are hernias that pass through the posteromedial inguinal wall

of the inferior epigastric vasa in a region bounded by the Hesselbach triangle (Arif Mansjoer, 2000)

The skin is the outer layer that covers the body of a vertebrate. The skin consists of epidermis, dermis, and hypodermis. The skin functions as an excretion tool due to the presence of sweat glands (sudorifera glands) located in the dermis layer. https://id.wikipedia.org

The surgical procedure generally involves procedures such as herniotomy (removal of the hernia sac), herniorafi (herniotomy with posterior wall repair of the inguinal canal), and hernioplasty (herniotomy accompanied by strengthening the posterior wall of the inguinal canal with synthetic mesh). Hernia repair generally involves the use of prosthetic (mesh) material in the hernia defect. In women of childbearing age, mesh is usually not used because there will be tissue stretching during pregnancy which increases the risk of recurrence. Baylón K, Camarillo PR, Zuniga EA, et al. Past, present and future of surgical meshes: a review. Membranes (Basel). 2017; 7 (3): 47

Injury is damage to normal anatomical structures and functions due to pathological processes originating from internal or external and affecting certain organs. The wound classification system provides a description of the status of skin integrity, cause of injury, severity, extent of injury, tissue damage, cleanliness of the wound or picture of wound quality such as color. The various classification of wounds make it easier for nurses to understand the risks associated with injuries and their nursing implications (Potter & Perry, 2006 p. 1853).

Wound healing is a very dynamic event, a "concert" of many processes that are integrated simultaneously. Wysocki (1989) in Gruendemann (2006 p. 519) defines injury as any interruption to the continuity of body tissue

Table 2.1 Stage of healing of surgical wounds

Stadium / Fase	time	The incident	cels	event
Inflammation (lag / inflammatory / exudative phase) (0-4 days)	0 to 2 hours 0 to 2 days	Hemostasis Fagositosis	Trombosit Eritrosit Leukosit Neutrofil Makrofag	Blood clots formed, reddish, heat, pain, swelling
Proliferation (Fibroblastic phase / connective tissue) (2-22 days)	1 to 4 days 2 to 7 days 2 to 22 days 2 to20 days	Epithelialization Neovascularization Collagen synthesis contraction	Keratinosit Endotel Fibroblas Miofibroblas	Formed collagen, edge of pink wound, ridge (back, ridge)
Maturation (Phase differentiation / resorptive / remodeling / plateu) (21 days-2 years)		Remodeling kolagen	Fibroblas	Fibroblas leave a wound, the edge of the wound thickens, it rises and absorbs the jar. Scars.

Gruendemann, 2006 + Smeltzer, 2002

2. Ways to examine wound healing:

Monitoring the development of pressure sores is a central part of wound management. By using scales that have a high level of reliability and validity. The smaller the total score means that the wound is getting better or getting better.

3. Type of sewing thread material Yarn materials are usually classified into two groups namely absorbable (absorbable) and non-absorbable (non absorbable).

a. Absorbable material (Absorbable):

A type of yarn whose material is made from healthy mammalian collagen tissue or from synthetic polymers. Material in the body

will be absorbed with varying duration, so that no foreign matter is left in the body.

b. Non-absorbable material (Non Absorbable):

It is a thread made from material that is resistant to absorption enzymes and remains in the body or tissue without rejection reaction for many years. The advantage of this yarn is that it can hold the tissue permanently. The disadvantage of this yarn is that it becomes a foreign object left inside the body and is likely to become a fistula

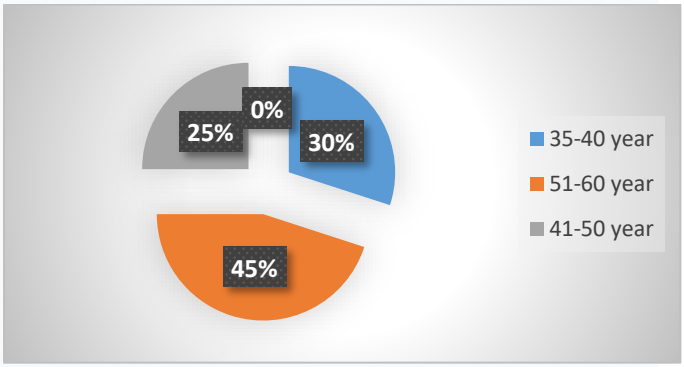
RESEARCH METHODS:

Using a comparative study design. The number of samples is 20 clients, 10 clients use absorbable yarn and 10 clients use non absorbable yarn with purposive sampling technique. Data collection was carried out by observing the wound healing process 3 times using observation sheets. Total population of post op clients Hernia Ingunalis at Prof. Dr. Soekandar Mojosari in 2019 there were 126 people. Sample size are 20 people in the research room was taken in November and December 2019. Statistical tests using Mann Whitney with a significance level of α = 0.05

DISCUSSION:

1. General Data

a) Characteristics of Respondents by Age



Picture 1.1 Pie diagram of respondent characteristics based on age in Kahuripan Room Prof. Dr. Soekandar Regional Hospital (n = 20)

From Picture 1.1, it is known that the majority of respondents aged 51 -60 years. In general, the incidence of inguinal hernias is more common in men than women. The comparison rate for inguinal hernias is 13.9% in men and 2.1% in women (Ruhl, 2007). Hernia suffered by many people who live in urban areas which incidentally are accustomed to routine activities, so that the muscles in certain body parts are poorly trained and become weak and not strong. And if the weakened muscles in the abdomen, hernia disease will soon descend. https://id.wikipedia.org.

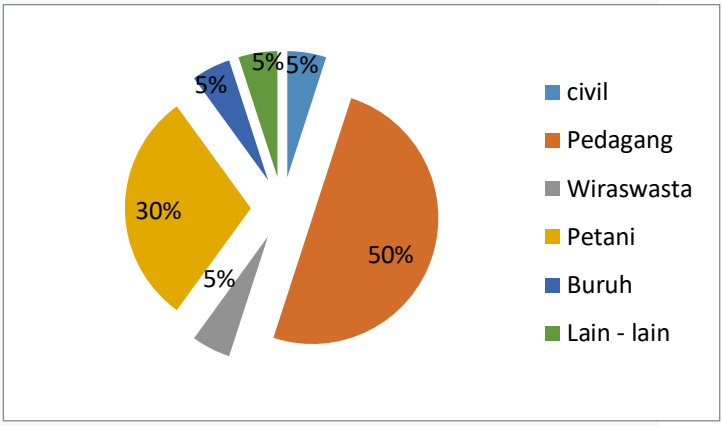


Figure 2.1 Pie diagram of respondent characteristics based on Occupation in the Kahuripan Room of Prof. Dr. Soekandar Regional Hospital (n = 20)

From Figure 2.1 it is known that the majority of respondents are self-employed namely 10 respondents or 50%. Risk factors that can be the etiology of inguinal hernias are intra-abdominal increase (chronic cough, constipation, ascites, severe weight lifting and abdominal malignancy) and abdominal wall muscle weakness (old age, pregnancy, prematurity, incision surgery resulting in incisional hernia, overweight and obesity)) (Sjamsuhidajat, 2010 and Burney, 2012).

2. Special Data:

Differences in the process of healing wound skin seams using absorbable threads with non -

absorbable threads on post op Hernia Inguinalis clients

Table 2.1 Observation results on days 0-1, days 3 and days 5-7 the process of healing wound skin seams using absorbable yarn with non absorbable yarn on post op s client Hernia Inguinalis, november-December 2019. (n = 20)

Parameter	Skor	Indirect Observasi		Direct Observasi			
		Day 0 – 1		Day 3		Day 5 – 7	
		Abs	Non Abs	Abs	Non Abs	Abs	Non Abs
Inflamation and Infection	1	3	-	9	6	10	10
	2	7	10	1	4	-	-
	3	-	-	-	-	-	-
	4	-	-	-	-	-	-
exudate	1	-	-	10	8	10	10
	2	-	-	-	2	-	-
	3	-	-	-	-	-	-
	4	-	-	-	-	-	-
Tissue growth	1	-	-	10	7	10	9
	2	-	-	-	3	-	1
	3	-	-	-	-	-	-
	4	-	-	-	-	-	-
	5	-	-	-	-	-	-

Notes:

Inflammation and infection process:

Score 1: There are no signs of inflammation
Score 2: There are signs of inflammation (heat, red, pain, swelling)
Score 3: There are signs of local infection (pus, wet sores)
Score 4: There is a systemic infection (systemic fever

Exudate:

Score 1: There is no exudate
Score 2: A little, no need to change the dressing every day
Score 3: Medium, requires dressing every day
Score 4: A lot, you need to change dressing> once a day

Tissue growth:

Score 1: The wound has closed
Score 2: The base of the wound is filled with epithelial tissue
Score 3: The base of the wound is filled with granulation tissue
Score 4: The base of the wound is closed slough
Score 5: The base of the wound is filled with necrotic tissue (Sari Y, 2007).

From table 2.31 In the inflammatory phase on the first day it was found that respondents who used absorbable threads were 70% there were signs of infection, whereas respondents with non-absorbable 100% had signs of inflammation, signs of exudate and tissue growth could not be evaluated. On the third day the signs of inflammation in respondents with absorbable yarn 10% and in non-absorbable 40%, 20% exudates and 30% tissue growth, on the 7th day there were no signs of inflammation from respondents with absorbable or non absorbable threads, but 1 respondents with network growth

An example of a normal wound healing process is repairing a surgical wound clean. Healing occurs in several stages described by Doughty (1992) in Potter & Perry (2006 p. 1854) consisting of the inflammatory, proliferation and maturation phases.

1. The Inflammatory Phase:

The inflammatory phase begins during a surgical incision and continues for 3 to 4 days. During that time the wound showed classic signs of inflammation; redness, heat, pain and swelling. During this phase there are two main events; hemostasis and phagocytosis.

2. Proliferation Phase:

The proliferation phase starts during the inflammatory stage and continues for about 21 days. The edges of the wound appear bright pink and the ridge (back, ridge) of healing forms 5 to 7 days after the incision. During this phase three major events occur, namely epithelialization, neovascularization and collagen synthesis.

3. Maturation phase:

The maturation phase of healing begins about 21 days after the incision and can last a year or more. The resulting collagen is thicker, more compact and the fibers begin to form cross bonds. Both of these phenomena increase the stretching strength of the wound.

Absorbable thread is a type of thread that can be digested by enzymes or can be hydrolyzed by the body. type of yarn whose material is made from healthy mammalian collagen tissue or from synthetic polymers.Non-absorbable thread is a type of thread that cannot be digested by enzymes or is hydrolyzed by the body, immediately opened in the first week after being installed because it has the potential to cause inflammation and infection due to its nature which is prone to accumulation of plaque accumulation and can cause bacteria to enter the wound

DATA ANALYSIS:

To find out the differences in the wound healing process of post inguinal hernia surgery on clients who use stitches with absorbable thread and non absorbable thread, the total score on the first, second and third observations achieved by each respondent is entered in the SPSS for windows program entry, then performed Statistical tests using Mann Whitney with a significance level of α = 0.05. The number of small scores indicates a good wound healing process and the greater number of scores indicates the wound healing process is not good

Table 3.1 Results of the analysis of differences in the process of healing wound skin sutures using absorbable threads with non absorbable threads in postoperative clients Inguinal Hernia

Group Variabel	n	Z	Pv	Conclusion
Cutguth absorbable	10	-2408	0.016	Pv (0.016) < α (0.05) Ho rejected
Cutguth non absorbable	10			

Based on table 3.1 above Z score - 2408 and Pv 0.016 so it can be concluded that Pv <α (0.05) thus Ho is rejected, which means there is a difference in the process of healing wound skin seams using absorbable threads with non absorbable threads on post op Hernia Inguinal clients

LIMITATION AND STUDY FORWARD:

This research is limited to only comparing the process of wound healing on the skin rather than to find out how the process of absorbable and non-absorbable threads accelerates wound healing. Furthermore, it can examine how suture sutures can accelerate wound healing

ACKNOWLEDGEMENT:

The researchers would like to thank the chairman of the PPNI Health Development Institute for Health Sciences for providing research funding facilities. Thank you also to the director of the hospital Prof. Dr. Soekandar Mojosari who gave permission for land use research.

CONCLUSION:

Skin seams with absorbable threads show better wound healing results than non

absorbable threads in patients with inguinal hernia surgery.

SUGGESTION:

The results of this study are expected to gain knowledge and field experience about the process of wound healing with sutures using absorbable and non absorbable threads

REFERENCES:

1) Arikunto, S. 1998. Prosedur Penelitian Suatu Pendekatan Pratik. Jakarta : Rineka Cipta
2) Gruendemann, B.J. & Fernsebner, B. 2006. Buku Ajar Keperawatan Perioperatif Vol. 1. Alih Bahasa : Brahm U. Pendit dkk. Jakarta : Penerbit Buku Kedokteran EGC
3) Hidayat, A.A. 2007. Metode Penelitian Keperawatan dan Teknik Analisis Data. Jakarta : Salemba Medika.
4) Morison, M.J. 2004. Manajemen Luka. Alih Bahasa : Tyasmono A.F. Jakarta : Penerbit Buku Kedokteran EGC.
5) Notoatmodjo, S. 2005. Metodologi Penelitian Kesehatan. Jakarta : Rineka Cipta
6) Nursalam. 2003. Konsep dan Penerapan Metodologi Penelitian Ilmu Keperawatan. Jakarta : Salemba Medika.
7) Potter, P.A. & Perry, A.G. 2006. Fundamental Keperawatan : Konsep, Proses dan Praktik. Edisi 4 Vol 1. Alih Bahasa : Yasmin Asih, dkk. Jakarta : EGC
8) Riyadi, B. Doddy dan Muslich, Masnur. 2008. Bagaimanakah Menulis KTI Kesehatan: Pedoman Praktis Bagi Mahasiswa Program Diploma 3 Politehnik Kesehatan. Malang: Asah Asih Asuh
9) Sari, Y. 2007. Memonitor Penyembuhan Luka Tekan Bagian Kedua (kelanjutan dari artikel pertama yang berjudul Luka Tekan : Penyebab dan Pencegahan/Wound Care Management Department), artikel, (online) (http://inna-ppni.or.id/html), diakses tanggal 24 januari 20011
10) Smeltzer, S.C. & Bare, G.B. 2002. Buku Ajar Keperawatan Medikal Bedah Brunner
11) Baylón K, Camarillo PR, Zuniga EA, et al. Past, present and future of surgical meshes: a review. Membranes (Basel). 2017; 7 (3): 47