COMPARISON OF MODIFIED RADICAL MASTECTOMY AND CARCINOMA MAMMAE EXCISION: CASE STUDY

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ABSTRACT

Penyebab kematian urutan kedua di dunia setelah penyakit jantung asalah kanker. Kanker payudara (Carsinoma Mammae) adalah tumor ganas (benjolan tidak normal) yang tumbuh di dalam jaringan payudara. Sebagian besar penderita tidak mengetahui secara pasti penyebab kanker yang diderita. Pengobatan kanker payudara sering melibatkan tindakan operasi, seperti tindakan eksisi biopsi termasuk operasi konservasi payudara atau mastektomi. Tujuan studi kasus ini yaitu mengetahui perbandingan tindakan mastektomi radikal modifikasi (MRM) dan eksisi biopsi. Metode yang digunakan adalah deskriptif analitik sebagai studi kasus, bermanfaat untuk mendeskripsikan secara sistematis dan akurat tentang fakta yang diteliti. Tindakan MRM maupun eksisi biopsi keduanya merupakan pilihan pengobatan yang aman untuk Carcinoma mammae stadium awal. Penentuan tindakan operasi dilihat dari penyebaran kanker maupun stadium dengan menggunakan klasifikasi sistem TNM. Didapatkan hasil bahwa terdapat perbedaan tindakan MRM dan eksisi biopsi mulai dari jenis anestesi, durasi operasi maupun penggunaan drain luka operasi. Untuk itu, tim tenaga kesehatan yang menentukan pilihan terbaik bagi kesembuhan pasien. Diharapkan studi kasus ini dijadikan sebagai bahan acuan atau informasi serta referensi untuk peneliti selanjutnya dan bermanfaat bagi kemajuan tenaga kesehatan.

Keywords: Carsinoma Mammae, Eksisi Biopsi, MRM

ABSTRACT

The second leading cause of death in the world after heart disease is cancer. Breast cancer (Carsinoma Mammae) is a malignant tumor (abnormal lump) that grows inside the breast tissue. Most patients do not know the exact cause of their cancer. Treatment of breast cancer often involves surgery, such as biopsy excision including breast conservation surgery or mastectomy. The purpose of this case study is to determine the comparison of modified radical mastectomy (MRM) and biopsy excision. The method used is descriptive analytic as a case study, useful for describing or describing systematically and accurately about the facts studied. Both MRM and biopsy excision are safe treatment options for early stage mammary carcinoma. Determination of surgery is seen from the spread of cancer and stage using the TNM classification system. It was found that there were differences in MRM and biopsy excision starting from the type of anesthesia, duration of surgery and the use of surgical wound drains. For this reason, the health care team determines the best choice for the patient's recovery. It is hoped that this case study will be used as reference material or information and reference for further researchers and is beneficial for the advancement of health workers.

Keywords: Carcinoma Mammary, Excision Biopsy, MRM,

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INTRODUCTION

Breast cancer (Carcinoma Mammae) refers to a malignant tumor (an abnormal growth) that forms in the tissues of the breast, including the mammary glands, ducts, and the supportive structures of the breast, like fatty tissue and connective tissue (Suryani et al., 2024). Cancer is the world's second most common cause of death, following heart disease (National Center for Health Statistics, 2024). The global number of new cancer cases has reached 20 million, with 9.7 million deaths. Among these, lung cancer accounts for the highest percentage (12.4%), followed by breast cancer (11.5%), colorectal cancer (9.6%), prostate cancer (7.3%), and stomach cancer (4.8%) (Ferlay et al., 2024). Based on Globocan, The International Agency for Research on Cancer (IARC) 2022, new cases of cancer in Indonesia were 408,661 cases with 242,988 deaths. Breast cancer is the cancer that most commonly attacks Indonesian people, namely 66,271 cases, followed by cervical cancer with 36,964 cases. Nationally in 2023, the prevalence of cancer in Indonesia will be 877,531 cases and in South Sulawesi there will be 29,481 cases (Health Development Policy Agency (BKPK), 2023).

Breast cancer treatment generally involves surgical procedures, such as removing the tumor or lump (lumpectomy), the entire breast (mastectomy), key lymph nodes (sentinel node biopsy), or several lymph nodes (axillary lymph node dissection) (Adiningrum et al., 2023). However, there are other surgical procedures such as biopsy, which is generally performed by excision to support further examination. A lumpectomy is often referred to as an excisional biopsy, which is a breast-conserving surgery or wide local excision because only a part of the breast is removed. In contrast, a mastectomy involves the removal of all breast tissue (Bachtiar, 2022). In the study by Herawati et al. (2021), the characteristics of breast cancer patients were analyzed based on age, family history, reproductive history, and type of therapy. However, the study did not provide details regarding the conditions during surgery, such as the type of anesthesia used or the type of surgical procedure performed.

This metric outlines the surgical approach to breast cancer treatment and assesses patients undergoing breast cancer surgery. These two actions certainly have different indications. In this determination, the team of health workers determines the best option for the patient's recovery. Therefore, this study aims to compare aspects of mammary carcinoma patients who underwent modified radical mastectomy (MRM) and excision in the Instalasi Bedah Sentral (IBS) RSPTN Hasanuddin University Makassar.

RESEARCH METHODS

The method utilized is explanatory expressive with a case ponder approach, specifically a inquire about strategy that points to form a precise and exact portrayal or picture of the genuine issue being considered. Carried out on 22-26 July 2024, there were 2 samples in the Central Surgical Installation (IBS) room at RSPTN, Hasanuddin University. So, we can describe the comparison of modified radical mastectomy (MRM) and excisional biopsy for Carcinoma mammae.

Prior to this, we have provided an explanation of the informed consent regarding the process of carrying out this action. Therefore, both the family members and the client themselves have agreed to participate in the action process, allowing us to collect data and documentation in the form of photos or videos. Nevertheless, the confidentiality of personal data remains a priority to safeguard the privacy of the family and respect the client's rights.

RESULTS AND DISCUSSION

Respondents in the study were 2 samples with the same case, namely, Carcinoma mammae. The results of the comparison of research aspects are shown in table 1 below.

Table 1. Comparison Aspects of Case 1 and Case 2

Aspects	Case 1	Case 2
Gender	Woman	Woman
Age	31 years old	18 years
Clinical Diagnosis	Right mammary tumor CT2N0M0	Left mammary tumor CT2N0M0
Operational Actions	Modified Radical Mastectomy (MRM)	Excisional biopsy
Operation Area Location	Mammae dextra	Left mammary
Anesthesia used	General ETT	General LMA
Operation Duration (Time Out-Sign Out)	08.45-11.45	09.15-09.45
Surgical Wound Drain	Yes, tube type, 2 pieces	Yes, penrose type, quantity 1 piece

Female gender is the highest risk factor for breast cancer compared to men and generally at age >40 years. Based on table 1, it was found that the similarities between breast cancer sufferers were female, aged 31 years and 18 years. This is proven by research Elmika & Adi, (2020) at Ibnu Sina Hospital Makassar City in 2018-2019 there were 6 men (1.1%) and 524 women (98.9%) with breast cancer, then 1 person aged 15-24 years (0.5%) and 25-44 years old as many as 168 people (31.6%). Based to Centers for Disease Control and Prevention (CDC), (2024)Breast cancer cases occur around 10% in women under 45 years. This is linked to risk factors including BRCA1, BRCA2, ATM or TP53 genetic mutations that cause cancer, a history of close family members experiencing breast cancer before the age of 50, receiving breast radiation treatment before the age of 30 and hormonal factors such as early menstruation before the age of 12 years and late menopause (> 55 years).

In table 1, case 1 with the clinical diagnosis of a right mammary tumor and case 2 with a left mammary tumor have the same TNM classification, namely T2N0M0. The TNM classification system is a classification for breast cancer by grouping patients into 4 stage categories based on measure of the essential tumor (T), territorial lymph hub status (N), and if there are removed metastases (M). The most widely used TNM system is the system based on the American Joint Committee on Cancer (AJCC) (John Hopkins University, 2024).

The classification of breast cancer stages based on surgical treatment includes: Stage 0, where treatment generally involves a lumpectomy followed by radiotherapy to ensure no cancer cells remain. Stage I recommends a lumpectomy and sometimes a mastectomy. In Stage II, the main treatment is surgery, such as a lumpectomy if the size is small and a mastectomy if the size is large. For Stage III, chemotherapy is first performed to reduce the size of the cancer, followed by lumpectomy or mastectomy surgery. Stage IV generally does not cure the disease but aims to reduce, inhibit, alleviate, and improve the quality of life for the patient (Cancer Australia, 2020).

Before the operation is carried out, the patient is first given anesthesia. The type of anesthesia in table 1 shows that the results for both cases used general anesthesia. General anesthesia, or general anesthesia, is a procedure to relieve pain, render a person unconscious, and cause predictable, temporary amnesia. With this method, patients will not remember the events during surgery after they wake up (Asmoro et al., 2021).

In case 1, endotracheal anesthesia (ETT) was used, while case 2 used laryngeal mask airway (LMA) anesthesia. An endotracheal tube (ETT) is a plastic tube to flow gas directly into the trachea (throat)

so that it can control ventilation and oxygenation adequately but can cause trauma to the airway, while the LMA is an aid to provide positive pressure ventilation flow to the larynx to produce low gastric distension, but does not eliminate the risk of aspiration (Asmoro et al., 2021). The use of this type of anesthesia also requires consideration of the duration of the operation.

In case 1, the procedure took a long time, lasting 3 hours, because it involved the removal of the breast along with the lymph nodes. In contrast, case 2 involved only an excisional biopsy with the removal of a small area, thus taking only 30 minutes. According to Cleveland Clinic (2023), the total duration of a surgical procedure depends on the sort and degree of the intervention performed. This is supported by Mitra Keluarga (2023), which states that a mastectomy generally lasts 3-4 hours, while most cases of excisional biopsy take between 20 minutes to one hour (Cleveland Clinic, 2022). In research carried out by Joty et al. (2023), it was discovered that mastectomy surgery required an average of 3.20 hours, compared to breast-conserving surgeries like excisional biopsies, which took an average of 1.04 hours. After the surgical procedure, a drain was placed before the surgical closure.

Draining the surgical wound, in case 1, 2 tube drains were used, while in case 2, 1 penrose drain was used. surgical wound drains are used to remove fluid from the surgical area after the procedure. This procedure is important to prevent fluid buildup which can cause complications such as seroma (a buildup of lymph fluid) or hematoma (a buildup of blood), as well as to reduce the risk of infection (Campbell, 2024). According to study conducted by Shiraz Shaikh et al., (2021) said that the installation of 2 drains was very effective for removing seroma after MRM. However, this is inversely proportional to research by Khan et al., (2023) who said that using 1 drain is more effective because it can reduce the discomfort of pain felt and is relatively cheap. This is also supported by research conducted at Sanglah General Hospital Denpasar-Bali by Christian et al., (2021) that there is no difference in seroma volume between the use of 1 drain and the use of 2 drains, so that the use of 1 drain is sufficient for breast carcinoma patients undergoing MRM.

Figure 1. Results of Case 1 (Modified Radical Mastectomy)

The picture above shows the results of case 1 with modified radical mastectomy (MRM). The complete removal of breast tissue is called a mastectomy. individuals with T2 tumors that are greater than 5 cm in size and have advanced disease are among the individuals who may benefit from a mastectomy. An elliptical incision is made during the modified radical mastectomy treatment, which removes the pectoralis major fascia, entire breast tissue, and the nipple-areolar complex. In order to remove the axillary contents, which entails excising level I–III axillary lymph nodes, the modified radical mastectomy incision is typically lengthened (Czajka & Pfeifer, 2023).

Figure 2. Results of Case 2 (Biopsy Excision)

The picture above shows the results of case 2 with excisional biopsy. Excision biopsy is the process of removing a sample of a tumor or aberrant area from the body, usually a piece of tissue, so that the type and severity of the cancer may be identified in a lab. In a surgical biopsy, the surgeon cuts through the skin to reach the area with potentially problematic cells. So that during the procedure you can maintain and maintain the shape of your breasts (National Breast Cancer Foundation, 2024a).

MRM and excisional biopsy are both oncologically safe treatment options for early-stage mammary carcinoma. Research results by Yang et al., (2024)showed that patients with conservative procedures, for example excisional biopsy, had shorter intraoperative operating times, lower blood loss, incision length, drainage volume, drainage time and length of stay than MRM procedures. On research Joty et al., (2023) said excisional biopsy resulted in less trauma, infection, improved aesthetic outcomes and quality of life compared to MRM.

CONCLUSION

Gender is a major risk factor for breast cancer, with women being at a significantly higher risk than men, typically occurring in those over 40 years old. In both cases, the patients were female but under 40 years old. The clinical diagnosis of breast tumors is determined using a classification system of four-stage categories to decide the type of surgery to be performed, which in turn affects the duration of the surgery and determines the type of anesthesia to be used. Case 1 required a longer surgery time due to the more extensive procedure compared to Case 2. Following the surgery, drains are placed to remove fluids. Whether one or two drains are used, there is no difference in the amount of fluid output, but it can minimize pain or discomfort experienced by the patient. MRM (Modified Radical Mastectomy) and excisional biopsy are safe treatment options for early-stage breast carcinoma. Therefore, the medical team selects the best approach for the patient's recovery.

SUGGESTIONS

It is hoped that the results of this case study will add insight into the comparison of modified radical mastectomy (MRM) surgery and mammary carcinoma biopsy excision and can be used as reference material or information and references for future researchers which are of a larger nature and are useful for the progress of health workers.

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