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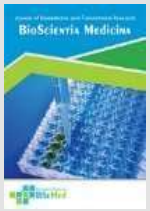

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Clinical Presentation and Surgical Management of Invasive Ductal Carcinoma Grade III: A Case Report

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A B S T R A C T

Background: Invasive ductal carcinoma (IDC) is the most common type of breast cancer, accounting for approximately 80% of all cases. This case report describes the clinical presentation, diagnosis, and surgical management of a 52-year-old female with IDC Grade III. **Case presentation:** A 52-year-old female presented with a palpable lump in her left breast, associated with intermittent pain. She had undergone a left breast biopsy excision surgery three months prior. Physical examination revealed a tender mass in the left breast. Imaging studies and histopathological examination confirmed the diagnosis of IDC Grade III. The patient underwent a modified radical mastectomy (MRM). **Conclusion:** This case highlights the importance of early detection and prompt surgical intervention in the management of IDC Grade III. MRM remains a cornerstone of treatment for locally advanced breast cancer, offering favorable outcomes and improved quality of life.

1. Introduction

Breast cancer is a significant global health concern, representing the most prevalent cancer among women worldwide. In 2018, an estimated 2.089 million women were diagnosed with breast cancer, with the incidence steadily increasing across all regions. The disease arises from the uncontrolled proliferation of cells in the breast tissue, most commonly originating in the lining of the milk ducts (invasive ductal carcinoma). IDC is the most common type of breast cancer, accounting for approximately 80% of all cases. It is characterized by the invasion of cancerous cells into the surrounding breast tissue and has the potential to metastasize to distant organs. The prognosis and treatment of IDC depend on various factors, including tumor size, lymph node involvement, hormone receptor status, and histological grade.[1-4]

The histological grade of IDC is a crucial factor in determining the aggressiveness of the disease and guiding treatment decisions. It is assigned based on the microscopic appearance of the tumor cells and their degree of differentiation. Grade III IDC, as described in this case report, is a more aggressive form of breast cancer, characterized by poorly differentiated cells and a higher propensity for metastasis. MRM remains a cornerstone of treatment for locally advanced breast cancer, offering favorable outcomes and improved quality of life. The procedure involves the removal of the entire breast tissue, including the

nipple-areola complex, along with the axillary lymph nodes. The pectoralis major and minor muscles are preserved in the modified radical mastectomy, unlike the traditional radical mastectomy.[5-7]

Early detection and prompt surgical intervention are of paramount importance in the management of IDC Grade III. Regular breast self-examination and mammography screening are crucial for early detection. Once a diagnosis of breast cancer is made, prompt surgical intervention is necessary to prevent disease progression and metastasis.[8-10] This case report presents a comprehensive overview of the clinical presentation, diagnostic workup, surgical management, and postoperative outcomes of a 52-year-old female with IDC Grade III.

2. Case Presentation

A 52-year-old female presented to our clinic with a palpable lump in her left breast. The lump had been present for approximately three months and was described as being marble-sized. The patient reported intermittent pain associated with the lump but denied any other symptoms such as fever, cough, runny nose, or shortness of breath. Her medical history was significant for high blood pressure, which was well-controlled with amlodipine. She denied any history of diabetes, asthma, or heart disease. The patient reported no known drug or food allergies. Of particular note, she had undergone a left breast biopsy excision surgery three months prior. The results of this prior biopsy were not immediately available. Upon physical examination, the patient was in good general condition, conscious, and composed. Her vital signs were stable, with a blood pressure of 126/77 mmHg, a pulse rate of 88 bpm, a respiratory rate of 20 breaths per minute, and a temperature of 36°C. Examination of the left breast revealed a palpable mass with associated tenderness. The size and location of the mass were consistent with the patient's description. No other significant findings were noted during the physical examination. Complete blood count (CBC) revealed a white blood cell count (WBC) of 9.68 x 10^9/L, hemoglobin (Hb) of 13.3 g/dL, and a platelet count (PLT) of 378 x 10^9/L. Liver function tests showed normal levels of alanine aminotransferase (SGPT) at 9 U/L and aspartate aminotransferase (SGOT) at 15 U/L. Her blood glucose level was 94 mg/dL, and her renal function was within normal limits, with a blood urea nitrogen (BUN) of 26 mg/dL and serum creatinine (SC) of 1.0 mg/dL. Electrolyte levels were also within normal ranges, with a sodium (Na) of 141 mEq/L, potassium (K) of 4.1 mEq/L, and chloride (Cl) of 100 mEq/L. Coagulation studies showed a bleeding time (BT) of 1 minute and 3 seconds, and a clotting time (CT) of 11 minutes. Chest X-ray was unremarkable, and liver ultrasound showed no evidence of liver or para-aortic metastases or any other abnormalities in the liver or gallbladder. A fine needle aspiration biopsy (FNAB) of the left breast mass performed on April 18th, 2024, raised the suspicion of a malignant lesion. Subsequent histopathological examination of the biopsy specimen on April 29th, 2024, confirmed the diagnosis of Invasive Breast Carcinoma of No Special Type, Grade III. A repeat biopsy on June 25th, 2024, again confirmed the diagnosis of Invasive Breast Carcinoma of No Special Type, Grade III. Microscopic examination of the biopsy specimen revealed the following characteristics; Tumor cells: round to oval in shape, hyperplastic, arranged in solid nests with a few tubular structures. The nuclei of the tumor cells were pleomorphic, hyperchromatic, and vesicular, with prominent nucleoli and evidence of mitotic activity; Stroma: The tumor cells were seen surrounding the connective tissue stroma and compressing the adjacent fat cells. A massive influx of lymphocyte inflammatory cells was also observed within the tumor stroma; Normal breast tissue: At the periphery of the tumor mass, normal mammary gland acini and ductuli were identified. Based on the clinical presentation, imaging findings, and histopathological examination, the definitive diagnosis of invasive breast carcinoma of no special type, grade III of the left breast was established (Table 1).

The patient presented with a primary complaint of a palpable lump in her left breast, which she estimated

to be approximately the size of a marble. This lump had been present for three months and was associated with intermittent pain. Notably, she had undergone a left breast biopsy excision three months prior to this presentation, although the results of that procedure were not available at the time of this consultation. Reviewing her systemic symptoms, the patient denied experiencing fever, cough, runny nose, or shortness of breath. She also denied any known drug or food allergies. Her medical history was significant for hypertension, managed with amlodipine, but she denied any history of diabetes, asthma, or heart disease. On physical examination, the patient was observed to be in good general condition, conscious, and composed. Her vital signs were within normal limits: Glasgow Coma Scale (GCS) of 15, blood pressure of 126/77 mmHg, pulse rate of 88 beats per minute, respiratory rate of 20 breaths per minute, and a temperature of 36°C. A focused examination of the left breast revealed a palpable mass with associated tenderness. The location and size of the mass correlated with the patient's initial description. No other significant findings were noted during the physical examination. A series of laboratory investigations were conducted to assess the patient's overall health and rule out any systemic involvement. Complete blood count revealed a white blood cell count (WBC) of 9.68 x 10^9/L, hemoglobin (Hb) of 13.3 g/dL, and a platelet count (PLT) of 378 x 10^9/L. These values fall within the normal range for an adult female and do not suggest any hematological abnormalities or infection. Liver function tests, including alanine aminotransferase (SGPT) at 9 U/L and aspartate aminotransferase (SGOT) at 15 U/L, were within the normal range, indicating normal liver function. Blood glucose level was 94 mg/dL, also within the normal range, suggesting no evidence of diabetes mellitus. Renal function tests, including blood urea nitrogen (BUN) at 26 mg/dL and serum creatinine (SC) at 1.0 mg/dL, were also within normal limits, indicating normal kidney function. Electrolyte levels, including sodium (Na) at 141 mEq/L, potassium (K) at 4.1 mEq/L, and chloride (Cl) at 100 mEq/L, were all within the normal range, suggesting no significant electrolyte imbalances. Bleeding time (BT) of 1 minute and 3 seconds and clotting time (CT) of 11 minutes were within the normal range, indicating no apparent coagulation abnormalities. A chest X-ray was performed and reported as being within normal limits, ruling out any significant pulmonary pathology. A liver ultrasound was also conducted and showed no evidence of liver or para-aortic metastases, nor any abnormalities in the liver or gallbladder. This finding is important to assess the extent of the disease and rule out distant metastasis. The histopathological examination played a crucial role in confirming the diagnosis and characterizing the tumor. An initial FNAB of the left breast mass, performed on April 18th, 2024, raised the suspicion of a malignant lesion. This preliminary finding prompted further investigation with a core needle biopsy. The histopathological examination of the biopsy specimen, conducted on April 29th, 2024, confirmed the diagnosis of Invasive Breast Carcinoma of No Special Type, Grade III of the left breast. This diagnosis was further corroborated by a repeat biopsy on June 25th, 2024. The microscopic examination of the biopsy specimen provided detailed information about the tumor's characteristics; Tumor Cells: The tumor cells were described as round to oval in shape, exhibiting hyperplastic growth, and arranged in solid nests with a few tubular structures. The nuclei of the tumor cells were pleomorphic (varying in size and shape), hyperchromatic (darkly stained), and vesicular (containing small cavities), with prominent nucleoli and evidence of mitotic activity. These features are consistent with the aggressive nature of a Grade III carcinoma; Stroma: The tumor cells were observed surrounding the connective tissue stroma and compressing the adjacent fat cells. A massive influx of lymphocyte inflammatory cells was also noted within the tumor stroma, indicating the host's immune response to the tumor; Normal Breast Tissue: Importantly, normal mammary gland acini and ductuli were identified at the periphery of the tumor mass, suggesting that the tumor was relatively well-

circumscribed. Correlating the patient's clinical presentation, imaging findings, and the definitive histopathological examination, a diagnosis of Invasive Breast Carcinoma of No Special Type, Grade III of the left breast was established. This diagnosis has significant implications for the patient's treatment and prognosis. Grade III IDC is considered a more aggressive form of breast cancer, characterized by poorly differentiated cells and a higher propensity for metastasis. This underscores the need for prompt and appropriate management (Table 2).

Table 1. Anamnesis, clinical findings, laboratory, histopathology, and diagnosis.

Category	Findings
Anamnesis	52-year-old female. Lump in the left breast, approximately marble-sized, for 3 months. Intermittent pain. History of left breast biopsy excision surgery. No fever, cough, runny nose, or shortness of breath. No drug or food allergies. History of high blood pressure (treated with amlodipine). No history of diabetes, asthma, or heart disease
Clinical findings	General condition good, conscious and composed, stable vital signs: GCS 15, BP 126/77 mmHg, Pulse 88 bpm, Temperature 36°C, RR 20 bpm. Left breast mass, tenderness present
Laboratory	WBC 9.68 x10^9/L, Hb 13.3 g/dL, PLT 378 x10^9/L SGPT 9 U/L, SGOT 15 U/L, GDS 94 mg/dL BUN 26 mg/dL, SC 1.0 mg/dL, Na 141 mEq/L, K 4.1 mEq/L, Cl 100 mEq/L BT 1'3", CT 11'00" Chest X-ray within normal limits Liver USG: no liver or paraaortic metastases, no liver/gallbladder abnormalities
Histopathology	FNAB (04/18/2024): Suspected malignant lesion of the left breast
	Histopathology (04/29/2024): Invasive Breast Carcinoma of No Special Type Grade III of the left breast
	Biopsy (06/25/2024): Invasive Breast Carcinoma of No Special Type Grade III of the left breast. Tumor cells: round, oval, hyperplastic, solid, forming a few tubular structures. Nucleus: pleomorphic, hyperchromatic, vesicular, clear, with mitosis. Tumor cells surround the connective tissue stroma and press on fat cells. Massive influx of lymphocyte inflammatory cells. Normal mammary gland acini and ductuli found at the edge of the mass
Diagnosis	Invasive Breast Carcinoma of No Special Type Grade III of the left breast

Table 2. Treatment and follow-up.

Category	Details
Surgical treatment	Modified radical mastectomy (MRM): Removal of the entire breast and all skin covering the mammary gland; Removal of axillary fossa lymph nodes; Removal of the pectoralis minor muscle; Removal of the pectoralis major muscle fascia
Medical treatment	IVFD Asering 20 dpm Ceftriaxone 2 x 1 gram IV Ibuprofen 3 x 400 mg Paracetamol 3 x 500 mg Tranexamic acid injection 3 x 500 mg
Follow-up	Regular follow-up appointments with the healthcare team Clinical breast exams Annual mammograms Monitoring for signs and symptoms of recurrence Patient education and counseling on lifestyle modifications Support group referrals

3. Discussion

Histological grading is a crucial aspect of evaluating invasive ductal carcinoma (IDC) as it provides valuable insights into the tumor's behavior, aggressiveness, and potential for metastasis. The grade is determined by examining the microscopic characteristics of the tumor cells and comparing them to normal breast tissue. This helps estimate how quickly the tumor is likely to grow and spread. Several grading systems have been developed for IDC, each with its own set of criteria and scoring methods. However, the most widely used and accepted system is the Nottingham grading system. The Nottingham grading system is a comprehensive and standardized method for evaluating IDC. It was developed in the 1980s by a group of pathologists at the Nottingham City Hospital in the United Kingdom. This system has been extensively validated and is now considered the gold standard for grading IDC. The tubule formation criterion evaluates the degree to which the tumor cells form tubules or gland-like structures. In normal breast tissue, cells are organized into ducts and lobules, forming a distinct tubular pattern. Well-differentiated tumors retain this tubular structure, indicating a lower grade. Poorly differentiated tumors, on the other hand, lose this organization and exhibit fewer tubules, indicating a higher grade. The nuclear pleomorphism criterion assesses the variation in size and shape of the tumor cell nuclei. Normal breast cells have uniform nuclei with regular shapes. In cancer cells, the nuclei often become enlarged, irregular, and hyperchromatic (darkly stained), indicating abnormalities in the genetic material. The greater the degree of nuclear pleomorphism, the higher the grade of the tumor. The mitotic count criterion measures the number of dividing cells (mitoses) within the tumor. Mitosis is a normal process of cell division, but in cancer, the rate of mitosis is often increased, reflecting the rapid growth and proliferation of the tumor cells. A higher mitotic count indicates a more aggressive tumor and a higher grade. Each of the three features - tubule formation, nuclear pleomorphism, and mitotic count - is assigned a score from 1 to 3 based on the degree of abnormality. A score of 1 represents the least abnormality (most closely resembling normal tissue), while a score of 3 represents the most significant abnormality. The scores for each feature are then added to obtain a total score ranging from 3 to 9. Grade I (Well-differentiated) tumors with a total score of 3-5. These tumors closely resemble normal breast tissue, are generally slow-growing, and have a lower risk of metastasis. Grade II (Moderately differentiated tumors with a total score of 6-7. These tumors exhibit intermediate features between Grade I and Grade III tumors, with a moderate risk of metastasis. Grade III (Poorly differentiated) tumors with a total score of 8-9. These tumors deviate significantly from normal breast tissue, grow rapidly, and have a higher propensity for metastasis. Grade III IDC, as seen in the presented case report, is considered a more aggressive form of breast cancer. The tumor cells exhibit a more rapid growth pattern and are more likely to invade surrounding tissues and spread to distant sites. This aggressive behavior is attributed to the poorly differentiated nature of the tumor cells, indicating a greater degree of genetic instability and a loss of normal growth control mechanisms. The histological grade of IDC is an important prognostic factor, providing valuable information about the likely course of the disease. Grade III tumors are more likely to recur locally after treatment, even with aggressive surgical intervention, and have a higher chance of spreading to regional lymph nodes. Grade III tumors have a higher propensity for distant metastasis, spreading to organs such as the lungs, liver, bones, and brain. Patients with Grade III IDC generally have a lower overall survival rate compared to those with lower-grade tumors. The histological grade of IDC also plays a crucial role in guiding treatment decisions. For patients with Grade III tumors, more aggressive treatment approaches are often recommended to improve the chances of controlling the disease and preventing recurrence. MRM is often preferred over breast-conserving surgery for Grade III tumors, particularly when the tumor is large or multifocal.

Adjuvant therapy, such as chemotherapy, radiation therapy, or hormonal therapy, is often recommended after surgery to further reduce the risk of recurrence. In some cases, targeted therapies may be considered based on the specific molecular characteristics of the tumor. The histological grade of invasive ductal carcinoma (IDC) is a crucial prognostic factor, providing valuable information about the likely course of the disease. It serves as a surrogate marker for the tumor's aggressiveness and its potential to metastasize. In general, higher histological grades are associated with a worse prognosis. Grade III tumors are more likely to recur locally after treatment, even with aggressive surgical intervention. This is attributed to the presence of microscopic residual disease that may not be completely eradicated during surgery. The poorly differentiated nature of Grade III tumors contributes to their ability to rapidly proliferate and re-establish themselves at the primary site. Grade III tumors are more likely to spread to regional lymph nodes, indicating a greater risk of distant metastasis. The aggressive growth pattern of these tumors facilitates their invasion into lymphatic vessels, allowing them to travel to regional lymph nodes and establish secondary tumors. Grade III tumors have a higher propensity for distant metastasis, spreading to organs such as the lungs, liver, bones, and brain. The poorly differentiated cells in Grade III tumors are more likely to detach from the primary tumor, enter the bloodstream, and establish secondary tumors in distant organs. Patients with Grade III IDC generally have a lower overall survival rate compared to those with lower-grade tumors. This is a consequence of the increased risk of recurrence and metastasis associated with higher histological grades. The aggressive nature of Grade III tumors makes them more challenging to treat, and the development of distant metastasis significantly impacts long-term survival. The histological grade of IDC also plays a crucial role in guiding treatment decisions. For patients with Grade III tumors, more aggressive treatment approaches are often recommended to improve the chances of controlling the disease and preventing recurrence. MRM is often preferred over breast-conserving surgery for Grade III tumors, particularly when the tumor is large or multifocal. MRM involves the removal of the entire breast tissue and axillary lymph nodes, offering a more comprehensive approach to eradicate the tumor and assess regional lymph node involvement. Adjuvant therapy, such as chemotherapy, radiation therapy, or hormonal therapy, is often recommended after surgery to further reduce the risk of recurrence. Adjuvant therapy aims to eliminate any residual microscopic disease and reduce the risk of distant metastasis. The specific type of adjuvant therapy is determined based on various factors, including tumor stage, lymph node involvement, hormone receptor status, and the patient's overall health. In some cases, targeted therapies may be considered based on the specific molecular characteristics of the tumor. Targeted therapies are designed to specifically target cancer cells while sparing normal cells, potentially reducing side effects and improving treatment efficacy. In addition to histological grade, the molecular subtype of IDC also plays a significant role in determining prognosis and guiding treatment decisions. IDC can be classified into different molecular subtypes based on the expression of certain genes and proteins. Luminal A, these tumors are hormone receptor-positive (estrogen receptor and/or progesterone receptor-positive) and HER2-negative. They tend to be less aggressive and have a better prognosis. Luminal B, these tumors are also hormone receptor-positive but may be HER2-positive or HER2-negative. They are generally more aggressive than Luminal A tumors. HER2-enriched, these tumors are HER2-positive and hormone receptor-negative. They tend to be aggressive but respond well to HER2-targeted therapies. Triple-negative, these tumors are negative for hormone receptors and HER2. They are often aggressive and have a poorer prognosis. The molecular subtype of IDC can provide additional prognostic information and guide the selection of targeted therapies. For example, patients with HER2-enriched tumors may benefit from HER2-targeted

therapies such as trastuzumab, while patients with hormone receptor-positive tumors may benefit from hormonal therapies such as tamoxifen or aromatase inhibitors. Besides histological grade and molecular subtype, other factors also influence the prognosis of IDC. Larger tumors are generally associated with a worse prognosis. The presence of lymph node metastasis indicates a higher risk of distant metastasis and a poorer prognosis. Younger patients and those in good overall health tend to have a better prognosis.[11-13]

Modified Radical Mastectomy (MRM) is a surgical procedure that involves the removal of the entire breast tissue, including the nipple-areola complex, along with the axillary lymph nodes. This extensive surgical approach aims to achieve complete tumor removal and minimize the risk of local and regional recurrence. MRM is often recommended for patients with invasive ductal carcinoma (IDC) Grade III, particularly when the tumor is large, multifocal, or located close to the chest wall. Before the MRM procedure, patients typically undergo a comprehensive evaluation, including a medical history review, physical examination, imaging studies (mammogram, ultrasound, or MRI), and biopsy to confirm the diagnosis and assess the extent of the disease. Patients may also meet with an anesthesiologist to discuss anesthesia options and any potential risks. The MRM procedure is usually performed under general anesthesia, meaning the patient is asleep and unaware during the surgery. The surgical team takes measures to ensure the patient's comfort and safety throughout the procedure. The surgeon begins by making an elliptical incision that extends from the axilla (armpit) to the lower border of the breast. The incision is carefully planned to ensure adequate access to the breast tissue and axillary lymph nodes while minimizing cosmetic impact. The surgeon then proceeds to remove all breast tissue, including the skin, subcutaneous fat, and mammary gland. The pectoralis major muscle, a large chest muscle, is preserved in MRM, unlike the traditional radical mastectomy, which removed this muscle. Preserving the pectoralis major muscle helps maintain shoulder function and improves cosmetic outcomes. The nipple-areola complex is also removed to ensure complete tumor eradication. This can be an emotionally challenging aspect of the procedure for many patients, and it's important for the healthcare team to provide emotional support and discuss options for breast reconstruction if desired. In addition to breast tissue removal, MRM includes axillary lymph node dissection. This involves the removal of lymph nodes from the axilla (armpit) to assess the extent of regional lymph node involvement. The surgeon carefully identifies and removes the lymph nodes, which are then sent to a pathologist for examination under a microscope. The information obtained from axillary lymph node dissection is crucial for accurate staging of the disease and guiding adjuvant treatment decisions. The number of lymph nodes involved, their size, and the presence of extranodal extension (tumor spread outside the lymph nodes) all contribute to determining the stage of the cancer and the need for additional treatments such as chemotherapy, radiation therapy, or hormonal therapy. After removing the breast tissue and axillary lymph nodes, the surgeon carefully irrigates the surgical site to remove any remaining tumor cells or debris. The incision is then closed with sutures or surgical staples, and a surgical drain may be placed to remove excess fluid and prevent the formation of seromas (fluid collections). After the MRM procedure, patients typically require a hospital stay of several days for pain management, wound care, and monitoring for complications. Early mobilization and arm exercises are encouraged to promote lymphatic drainage and prevent lymphedema, a condition characterized by swelling in the arm or hand due to the removal of lymph nodes. Patients may experience pain, discomfort, and swelling in the surgical area, which can be managed with analgesics and supportive measures. It is important to keep the surgical site clean and dry to prevent infection. After MRM, patients may experience a range of emotions, including anxiety, fear, and body image concerns. It is important

for patients to have access to support groups, counseling, and other resources to help them cope with the emotional and physical challenges of breast cancer treatment. Patients who undergo MRM may also experience lymphedema, a condition characterized by swelling in the arm or hand due to the removal of lymph nodes. Lymphedema can be managed with compression garments, exercises, and manual lymphatic drainage. Modified Radical Mastectomy (MRM) offers several distinct advantages in the management of locally advanced breast cancer, making it a cornerstone of surgical treatment. These advantages contribute to improved local control of the disease, accurate staging, and reduced need for radiation therapy in many cases. One of the primary advantages of MRM is its ability to achieve improved local control of the disease. By removing the entire breast tissue and axillary lymph nodes, MRM significantly reduces the risk of local and regional recurrence. This is particularly crucial in cases of IDC Grade III, which is characterized by aggressive tumor growth and a higher propensity for metastasis. The comprehensive removal of breast tissue in MRM minimizes the chance of microscopic residual disease remaining after surgery. Even small clusters of cancer cells left behind can potentially lead to local recurrence. MRM's extensive approach aims to eradicate all macroscopic and microscopic disease within the breast and regional lymph nodes, reducing the likelihood of the cancer returning in the same area. Accurate staging is essential for determining the appropriate treatment plan and predicting the prognosis of breast cancer. MRM facilitates accurate staging through axillary lymph node dissection. The extent of lymph node involvement is a crucial factor in determining the stage of the cancer and guiding adjuvant treatment decisions. By removing and examining the axillary lymph nodes, MRM provides precise information about the spread of cancer to regional lymph nodes. This information helps determine the need for adjuvant therapies such as chemotherapy, radiation therapy, or hormonal therapy. Accurate staging allows for personalized treatment plans tailored to the individual patient's needs and risk factors. In many cases, MRM eliminates the need for radiation therapy, reducing treatment duration and potential side effects. Radiation therapy, while effective in controlling cancer, can cause side effects such as skin irritation, fatigue, and breast pain. By avoiding radiation therapy, patients can experience a faster recovery and potentially reduce the risk of long-term side effects. For patients with IDC Grade III, the risk of local recurrence is higher even with aggressive surgical intervention. In these cases, MRM offers a more comprehensive approach to tumor removal, reducing the need for radiation therapy in many instances. This can be particularly beneficial for patients who may not be suitable candidates for radiation therapy due to other health conditions or personal preferences. MRM is often compared to breast-conserving surgery (BCS), which involves the removal of the tumor along with a margin of healthy tissue, followed by radiation therapy. The choice between MRM and BCS depends on various factors, including tumor size, location, multifocality, patient preference, and the availability of radiation therapy. MRM is often preferred for patients with IDC Grade III, particularly when the tumor is large or multifocal. In these cases, MRM offers a more comprehensive approach to tumor removal and reduces the risk of local recurrence. However, BCS may be a suitable option for patients with smaller, less aggressive tumors, especially if they are good candidates for radiation therapy. After MRM, patients typically require a hospital stay of several days for pain management, wound care, and monitoring for complications. Early mobilization and arm exercises are encouraged to promote lymphatic drainage and prevent lymphedema, a condition characterized by swelling in the arm or hand due to the removal of lymph nodes. Patients may experience pain, discomfort, and swelling in the surgical area, which can be managed with analgesics and supportive measures. It is important to keep the surgical site clean and dry to prevent infection. After MRM, patients may experience a range of emotions, including

anxiety, fear, and body image concerns. It is important for patients to have access to support groups, counseling, and other resources to help them cope with the emotional and physical challenges of breast cancer treatment. Patients who undergo MRM may also experience lymphedema, a condition characterized by swelling in the arm or hand due to the removal of lymph nodes. Lymphedema can be managed with compression garments, exercises, and manual lymphatic drainage.[14-16]

Adjuvant therapy plays a crucial role in the comprehensive management of locally advanced breast cancer following Modified Radical Mastectomy (MRM). The primary goal of adjuvant therapy is to further reduce the risk of recurrence and improve survival outcomes. It aims to target any residual microscopic disease that may remain after surgery, ensuring the complete eradication of cancer cells. The specific adjuvant therapy regimen is determined based on various factors, including tumor stage, lymph node involvement, hormone receptor status, and the patient's overall health. Chemotherapy involves the use of systemic medications to destroy cancer cells throughout the body. It is often recommended for patients with a higher risk of recurrence, such as those with larger tumors, lymph node involvement, or Grade III IDC. Chemotherapy drugs can be administered intravenously or orally, and the treatment regimen typically involves multiple cycles of therapy given over several months. Radiation therapy uses high-energy rays to target and destroy cancer cells in a specific area. It may be recommended for patients with a higher risk of local recurrence, such as those with positive surgical margins or extensive lymph node involvement. Radiation therapy is typically delivered over several weeks, with daily treatments to the affected area. Hormonal therapy is used to block the effects of hormones that can stimulate the growth of breast cancer cells. It is often recommended for patients with hormone receptor-positive tumors (estrogen receptor and/or progesterone receptor-positive). Hormonal therapy can be administered in various forms, including pills, injections, or implants, and is typically continued for several years. The specific adjuvant therapy regimen is carefully tailored to the individual patient's needs and risk factors. The stage of the cancer, which reflects the size of the tumor and the extent of its spread, is a crucial factor in determining the need for adjuvant therapy. The number of lymph nodes involved and the presence of extranodal extension influence the risk of recurrence and the need for adjuvant therapy. Hormone receptor-positive tumors are often treated with hormonal therapy to block the effects of hormones that can stimulate cancer growth. HER2-positive tumors may benefit from HER2-targeted therapies such as trastuzumab. The patient's age, overall health, and any other medical conditions are considered when determining the appropriate adjuvant therapy regimen. Postoperative management after MRM focuses on pain control, wound care, and monitoring for complications. Patients may experience pain, discomfort, and swelling in the surgical area, which can be managed with analgesics and supportive measures. Pain medications may be given orally, intravenously, or through a patient-controlled analgesia (PCA) pump. It is important to keep the surgical site clean and dry to prevent infection. Patients may need to wear a surgical drain for a period of time to remove excess fluid and prevent the formation of seromas (fluid collections). The surgical drain is typically removed when the drainage output decreases to a certain level. Patients are closely monitored for potential complications such as bleeding, infection, lymphedema (swelling in the arm or hand), and seroma formation. Healthcare providers regularly assess the surgical site for signs of infection, such as redness, swelling, warmth, or drainage. Early mobilization and arm exercises are encouraged to promote lymphatic drainage and prevent lymphedema. These exercises help maintain shoulder and arm mobility and reduce the risk of fluid buildup. Patients are typically instructed on specific exercises to perform after surgery, and they may work with a physical therapist to regain strength and range of motion. After MRM, patients may experience a range

of emotions, including anxiety, fear, and body image concerns. It is important for patients to have access to support groups, counseling, and other resources to help them cope with the emotional and physical challenges of breast cancer treatment. Healthcare providers can offer emotional support and connect patients with resources such as support groups, mental health professionals, and breast cancer survivor networks.[17,18]

Early detection and prompt surgical intervention are of paramount importance in the management of Invasive Ductal Carcinoma (IDC) Grade III. This aggressive form of breast cancer necessitates a proactive approach to ensure the best possible treatment outcomes and improve the chances of survival. In the realm of cancer management, early detection is often hailed as the cornerstone of improved outcomes. IDC Grade III, a more aggressive form of breast cancer, is no exception. The earlier IDC Grade III is detected, the better the chances of successful treatment and long-term survival. Breast self-examination (BSE) is a simple yet powerful tool that empowers women to take charge of their breast health. It involves regularly examining one's breasts for any changes, such as lumps, thickening, or nipple discharge. While BSE may not detect all breast cancers, it can help identify changes that warrant further evaluation by a healthcare professional. Mammography screening is another crucial tool for the early detection of breast cancer. Mammography uses low-dose X-rays to create images of the breast, allowing for the detection of abnormalities that may not be felt during a physical exam. Regular mammography screening, starting at age 40 or earlier for women at higher risk, can significantly increase the chances of detecting breast cancer in its early stages. Once a diagnosis of IDC Grade III is made, prompt surgical intervention is necessary to prevent disease progression and metastasis. The aggressive nature of IDC Grade III necessitates timely intervention to remove the tumor and any involved lymph nodes. Modified radical mastectomy (MRM) is a standard surgical approach for IDC Grade III, particularly when the tumor is large or multifocal. MRM involves the removal of the entire breast tissue and axillary lymph nodes, offering a comprehensive approach to tumor eradication and regional lymph node assessment. By removing the entire tumor and involved lymph nodes, MRM reduces the risk of local and regional recurrence. Axillary lymph node dissection provides accurate staging information, guiding adjuvant treatment decisions. In many cases, MRM eliminates the need for radiation therapy, reducing treatment duration and potential side effects. Adjuvant therapy, such as chemotherapy, radiation therapy, or hormonal therapy, may be recommended after MRM to further reduce the risk of recurrence and improve survival outcomes. The specific adjuvant therapy regimen is determined based on various factors, including tumor stage, lymph node involvement, hormone receptor status, and the patient's overall health. Postoperative management after MRM focuses on pain control, wound care, and monitoring for complications. Early mobilization and arm exercises are encouraged to promote lymphatic drainage and prevent lymphedema. Emotional support is also crucial to help patients cope with the physical and emotional challenges of breast cancer treatment. The successful management of IDC Grade III often requires a multidisciplinary approach involving surgeons, oncologists, radiologists, pathologists, nurses, and other healthcare professionals. This collaborative approach ensures that patients receive comprehensive care tailored to their individual needs.[19,20]

4. Conclusion

This case report presents the clinical presentation, diagnosis, and surgical management of a 52-year-old female with IDC Grade III. The patient underwent a modified radical mastectomy (MRM) for the treatment of her locally advanced breast cancer. MRM remains a cornerstone of treatment for such cases, offering favorable outcomes and improved quality of life. Early detection and prompt surgical intervention are crucial in the management of IDC Grade III. Regular breast self-examination and mammography screening are

essential for early detection. Prompt surgical intervention is necessary to prevent disease progression and metastasis once a diagnosis of breast cancer is made. In addition to surgical intervention, adjuvant therapy, such as chemotherapy, radiation therapy, or hormonal therapy, may be recommended to reduce the risk of recurrence and improve survival outcomes. The specific adjuvant therapy regimen is determined based on various factors, including tumor stage, lymph node involvement, hormone receptor status, and the patient's overall health. Postoperative management after MRM focuses on pain control, wound care, and monitoring for complications. Early mobilization and arm exercises are encouraged to promote lymphatic drainage and prevent lymphedema. Emotional support is also crucial to help patients cope with the physical and emotional challenges of breast cancer treatment. The successful management of IDC Grade III often requires a multidisciplinary approach involving surgeons, oncologists, radiologists, pathologists, nurses, and other healthcare professionals. This collaborative approach ensures that patients receive comprehensive care tailored to their individual needs.

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