

Initial Excisional Biopsy Is Associated With Reduced Breast-Conserving Surgery Compared With Core Needle Biopsy in BI-RADS 4–5 Breast Lesions

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Abstract

Objective

This study aims to evaluate the detrimental impact of excisional biopsy performed without prior core needle biopsy (CNB) on surgical planning and oncological management in high-risk solid breast masses.

Methods

Patients were divided into an excisional biopsy group and a core needle biopsy (CNB) group. The excision group consisted of patients referred to our clinic after direct surgical excision of a solid mass at outside facilities without a prior CNB, leading to a breast cancer diagnosis. The CNB group included patients who received their primary CNB diagnosis at our center. We retrospectively reviewed a total of 78 patients: 28 in the excision group and a cohort of 50 consecutive patients for the CNB group within the same study period. Analyzed variables included patient demographics, tumor size, BI-RADS category, lesion palpability, multifocality/multicentricity, neoadjuvant treatment, surgical procedures, sentinel lymph node biopsy (SLNB) findings, residual tumor status, the need for reoperation, complication rates, and time to diagnosis.

Results

In the excisional group, the mean age was 56.8 years with a mean tumor size of 31.1 mm. In the CNB group, the mean age was 53.4 years with a mean tumor size of 25.2 mm. The rate of mastectomy/modified radical mastectomy (MRM) was significantly higher in the excision group (75.0% vs. 50.0%, $p = 0.035$). Conversely, the rate of breast-conserving surgery (BCS) was significantly higher in the CNB group (50.0% vs. 21.4%, $p = 0.017$). No residual tumor was identified in 21.4% ($n = 6$) of the final surgical specimens in the excision group. SLNB failure or lack of mapping occurred in 25% ($n = 7$) of the excision group compared to 16% ($n = 8$) in the CNB group ($p = 0.38$). Although overall complication rates ($p = 0.34$) and complications among BCS patients ($p = 0.07$) did not reach statistical significance, complication rates were notably higher in the excision group, particularly among those undergoing BCS. The mean time to diagnosis was 34.4 days.

Conclusion

Initial excisional biopsy leads to adverse outcomes in high-risk solid breast masses regarding both diagnostic accuracy and surgical planning. Elevated mastectomy rates, SLNB failure, high residual tumor rates, and the subsequent need for reoperation demonstrate that excisional biopsy has no place in modern breast surgery. Image-guided CNB should always be the primary diagnostic modality for BI-RADS 4–5 lesions.

Introduction

Breast cancer is the most common malignancy in humans, and a palpable breast mass is its most frequent clinical presentation. Current guidelines recommend imaging and image-guided biopsy following clinical breast examination. According to a report encompassing 160 studies, women who undergo image-guided biopsy instead of excisional biopsy are 15 times more likely to have their cancer treated with a single surgical procedure (1, 2).

Percutaneous core needle biopsy has become the standard method for the pathological evaluation of radiologically suspicious breast lesions. This minimally invasive diagnostic approach provides a practical framework for planning definitive surgical treatment. Excisional biopsy may be considered only when the CNB diagnosis is discordant with the initial clinical suspicion (3).

Image-guided core needle biopsy of breast lesions is performed using a 14-gauge spring-loaded core biopsy gun targeting the solid component of the lesion to avoid cystic degeneration, adjacent vascular structures, and hematoma formation. Five or more tissue cores should be obtained (2). This is the current standard of care for histopathological diagnosis and the most definitive way to rule out cancer. While it causes slightly more discomfort and incurs higher costs compared to fine-needle aspiration cytology (FNAC), it yields the histological architecture, immunohistochemical evaluation of receptors, and mitotic index necessary for accurate subtyping of the cancer. Furthermore, it avoids repeat procedures. The presence of invasion can only be determined through the histological assessment of tissue obtained via core biopsy. The sensitivity and specificity of core needle biopsy are 84–88% and 98–99%, respectively (4).

CNB has been utilized as the standard minimally invasive diagnostic modality since the early 1990s, offering multiple advantages over open excisional biopsies. Patients undergoing core biopsy experience less morbidity and are less likely to face unnecessary surgeries. In patients diagnosed via standard CNB, there is a higher probability of successfully planning breast-conserving surgery and achieving clear surgical margins following lumpectomy. Since 2001, CNB has been recognized as the standard diagnostic method in numerous consensus guidelines, with utilization rates expected to exceed 90%, rendering open excisional biopsies rarely necessary (5).

The definitive surgical treatment of breast cancer technically involves excising the mass with clear margins alongside axillary lymph node staging. Performing an excisional biopsy without a prior CNB diagnosis in a patient with a suspicious solid mass disrupts the lymphatic drainage of the breast, diminishing the success rate of subsequent sentinel lymph node mapping. Moreover, since evaluating surgical margins becomes highly challenging in this setting, the opportunity to offer breast-conserving or oncoplastic surgical options is often lost.

When a breast lesion is suspected based on physical examination, mammography, or ultrasound, CNB is routinely performed to establish a definitive diagnosis. This method is far less invasive than excisional biopsy, requiring no general anesthesia, hospitalization, or extended recovery period. Excisional biopsy is

not recommended as a first-line diagnostic tool (6, 7). Despite this, inappropriate practices persist, particularly in secondary-level state hospitals, often due to a lack of equipment and clinical experience.

Performing an initial excisional biopsy instead of a CNB for BI-RADS 4 and 5 solid breast masses can lead to the need for reoperation and even organ loss. This mismanagement prolongs the treatment course and inflicts physical and psychological distress on patients. We believe it is crucial to prevent these misguided practices to preserve the chance of breast-conserving surgery for patients diagnosed with breast cancer.

Our objective in this study is to compare the surgical treatments of breast cancer patients diagnosed via excisional biopsy at outside facilities with those diagnosed via CNB at our center, emphasizing the importance of breast-conserving therapies. We also aim to underscore that breast cancer diagnosis must rely on CNB to spare patients from additional surgical procedures and to raise awareness among surgeons practicing in peripheral state hospitals.

Materials and Methods

This retrospective comparative cohort study was conducted at a tertiary referral center and included patients who were managed for radiologically suspicious breast lesions between January 1, 2023 and September 1, 2025. Patients were divided into two groups according to the initial diagnostic approach **excisional biopsy group**; patients who underwent direct excisional biopsy at outside institutions without prior core needle biopsy and were subsequently referred to our center after being diagnosed with invasive breast carcinoma. **Core needle biopsy group**: patients who underwent image-guided core needle biopsy as the initial diagnostic procedure and were treated at our center. Inclusion criteria were: age ≥ 18 years, radiologically suspicious solid breast lesions classified as BI-RADS 4 or 5 histopathological diagnosis of invasive breast carcinoma. Exclusion criteria included: BI-RADS 1–3 lesions, non-invasive pathology without invasive component, patients with incomplete clinical or pathological data. The study was approved by the Institutional Clinical Research Ethics Committee (Decision No: 1045, Date: October 30, 2024), and conducted in accordance with the Declaration of Helsinki. Demographic, clinical, radiological, pathological, and surgical data were collected retrospectively from electronic medical records. The following variables were recorded: age and sex, tumor size (mm), BI-RADS classification, palpability of the lesion, multifocality or multicentricity, axillary lymph node status on imaging, neoadjuvant treatment status. Surgical and oncological outcomes included: type of surgery (breast-conserving surgery [BCS], mastectomy, modified radical mastectomy [MRM]), mastectomy rate (defined as total mastectomy or MRM), sentinel lymph node biopsy (SLNB) performance and success, SLNB positivity, presence of residual tumor in the final specimen, surgical margin status, re-operation requirement (re-excision or completion surgery), postoperative complications. Diagnostic delay was defined as the time interval between the initial biopsy and definitive surgical treatment. The primary endpoint was mastectomy rate, defined as the proportion of patients undergoing mastectomy or modified radical mastectomy. The secondary endpoints included; rate of

breast-conserving surgery, SLNB failure rate, SLNB positivity, presence of residual tumor, postoperative complications, diagnostic delay

Statistical Analysis

Statistical analyses were performed using IBM SPSS Statistics (Version 26.0; IBM Corp., Armonk, NY, USA). Continuous variables were expressed as mean ± standard deviation or median (interquartile range) according to distribution. Categorical variables were presented as frequencies and percentages. Normality of distribution was assessed using the Kolmogorov–Smirnov test. For comparisons between the two groups: continuous variables were analyzed using the Student’s t-test or Mann–Whitney U test as appropriate, categorical variables were compared using the Chi-square test or Fisher’s exact test. To identify independent predictors of mastectomy, a multivariable logistic regression analysis was performed. Variables included in the model were: biopsy type (excisional vs core needle), age, tumor size, multifocality, palpability, Neoadjuvant treatment. Results were reported as odds ratios (ORs) with 95% confidence intervals (CIs). A two-sided p-value < 0.05 was considered statistically significant.

Results

During the study period, patients with BI-RADS 4–5 breast lesions were evaluated. After applying the inclusion and exclusion criteria, 78 patients were included in the final analysis (Fig. 1). After applying the inclusion and exclusion criteria, **78 patients** were included in the final analysis, comprising **28 patients (35.9%) in the excisional biopsy group and 50 patients (64.1%) in the core needle biopsy group**. The baseline demographic and tumor characteristics are summarized in Table 1.

Table 1
Baseline Characteristics

Variable	Excisional (n = 28)	Core (n = 50)	p-value
Age (years, mean)	56.8	53.4	> 0.05
Tumor size (mm, mean)	31.1	25.2	0.026
Female (%)	96.4	100	> 0.05
BI-RADS 4–5 (%)	100	100	-

The mean age was comparable between the excisional and core biopsy groups (56.8 vs 53.4 years, p > 0.05). However, tumor size was significantly larger in the excisional biopsy group (mean 31.1 mm vs 25.2 mm, **p = 0.026**), indicating a potential baseline imbalance that was accounted for in multivariable analysis. All lesions were classified as BI-RADS 4–5, with no difference in radiological suspicion between the groups.

Surgical outcomes differed significantly according to the initial diagnostic approach (Table 2).

Table 2
Surgical and Oncological Outcomes

Outcome	Excisional (n = 28)	Core (n = 50)	p-value
Mastectomy / MRM (n, %)	21 (75.0%)	25 (50.0%)	0.035
Breast-Conserving Surgery (n, %)	6 (21.4%)	25 (50.0%)	0.017
SLNB failure (n, %)	7 (25%)	8 (16.0%)	0.38
SLNB positivity (n, %)	7 (25.0%)	12 (24.0%)	> 0.05
No residual tumor (n, %)	6 (21.4%)	—	—
Re-operation (n, %)	28 (100%)		
Complication for BCS (n, %)	4/6 (66,7%)	6/25 (%24)	0,073
Complication for all (n, %)	13 (46%)	17 (%34)	0,34
Diagnostic delay (days, mean ± SD)	34.4		

All patients in the excision group required an additional surgical procedure either before adjuvant chemotherapy or after neoadjuvant chemotherapy. The indications for reoperation were the inability to evaluate surgical margins in 32.1% (n = 9) of outside facility pathology reports, positive surgical margins (tumor extending to the margin) in 46.4% (n = 13), and margins closer than 1 mm in 17.9% (n = 5). Furthermore, none of these patients had undergone an initial sentinel lymph node biopsy. Only 1 patient (3.6%) had negative surgical margins on the initial excisional biopsy report; this patient subsequently underwent only a sentinel lymph node biopsy. In the excisional biopsy group, **no residual tumor was identified in 21.4% of final surgical specimens**, suggesting that the initial excisional procedure may have led to unnecessary surgical intervention in a considerable proportion of patients.

The rate of mastectomy or modified radical mastectomy was significantly higher in the excisional biopsy group compared to the core biopsy group (**75.0% vs 50.0%, p = 0.035**). In contrast, breast-conserving surgery (BCS) was significantly more frequently achieved in patients who underwent core needle biopsy (**50.0% vs 21.4%, p = 0.017**). These findings indicate that patients who underwent initial excisional biopsy were substantially less likely to undergo breast-conserving surgery and more likely to require radical surgical procedures.

The inability to perform SLNB or the failure of sentinel lymph nodes to map was defined as SLNB failure. This failure stems from the disruption of sentinel lymphatic drainage pathways caused by the unnecessary initial surgery. Sentinel lymph node biopsy (SLNB) failure was observed in 25% of patients in the excisional biopsy group and 16.0% in the core biopsy group, without a statistically significant difference (p = 0.38). Similarly, SLNB positivity rates were comparable between groups (25.0% vs 24.0%, p > 0.05) (Table 2).

Axillary lymph node dissection (ALND) was performed in 50% (n = 14) of the 28 patients in the excision group and in 46% (n = 23) of the 50 patients in the CNB group (p = 0.82). When comparing the ALND rates strictly among patients who underwent breast-conserving surgery (33.3% vs. 12.0%, p = 0.24), the higher rate in the excision group—though not statistically significant—highlights how excisional biopsy disrupts lymphatic pathways and leads to inaccurate staging, thereby increasing the need for ALND in BCS candidates. The morbidity rate visibly rises in tandem with the increasing number of radical surgical interventions.

The overall complication rate was 46% (n = 13) in the excision group and 34% (n = 17) in the CNB group (p = 0.34). When evaluating only the patients who underwent BCS, the complication rate was 66.7% (4 of 6 patients) in the excision group and 24% (6 of 25 patients) in the CNB group (p = 0.073) (Table 2).

The mean time from initial diagnostic intervention to definitive surgical treatment was longer in the excisional biopsy group, with a mean delay of **34.4 days**, indicating a clinically relevant delay in treatment initiation associated with the initial diagnostic approach.

Multivariable logistic regression analysis was performed to identify independent predictors of mastectomy (Table 3).

Table 3
Multivariable Logistic Regression Analysis for Predictors of Mastectomy

Variable	Odds Ratio (OR)	95% Confidence Interval	p-value
Excisional biopsy (vs core)	2.84	1.10–7.32	0.031
Tumor size (per mm increase)	1.04	1.01–1.07	0.018
Multifocality (yes vs no)	3.12	1.15–8.45	0.025
Neoadjuvant therapy (yes vs no)	0.72	0.25–2.08	0.55
Palpable tumor (yes vs no)	1.38	0.52–3.64	0.51
Age (per year increase)	1.01	0.97–1.04	0.68

Initial excisional biopsy remained independently associated with an increased likelihood of mastectomy after adjustment for tumor size and other clinical variables (p < 0.05). Tumor size and multifocality were also significant predictors, whereas age was not significantly associated with surgical choice.

Discussion

Pathological examination of tissue cores obtained via CNB yields critical data, including estrogen receptor (ER) expression, progesterone receptor (PR) expression, human epidermal growth factor receptor 2 (HER2) status, and Ki-67 proliferation index (8). Determining the biological classification of the tumor—namely, its histological subtype and immunohistochemical profile—is paramount in guiding the treatment algorithm.

A 2020 consensus statement by the European Society of Breast Imaging declared, "Image-guided percutaneous needle biopsy is an indispensable part of the management of suspicious breast lesions detected during clinical evaluation and imaging. Furthermore, it is a safe and cost-effective procedure that allows for accurate diagnosis and, when necessary, proper treatment planning" (9). Ultrasound-guided percutaneous needle biopsy is also being increasingly adopted across many Asian and Middle Eastern nations. A study from Dubai (UAE) demonstrated that ultrasound-guided CNB detected malignant lesions in 109 patients, with an overall sensitivity and specificity for malignancy of 96.33% and 75.10%, respectively (10). Worldwide, excisional biopsy is no longer the standard of care for the primary tissue diagnosis of suspicious breast lesions. A surgeon should only resort to excisional biopsy when there is discordance between the CNB results and the initial clinical/imaging suspicion.

Despite advancements in diagnostic modalities, excisional biopsy is still utilized for primary tissue diagnosis, particularly by inexperienced surgeons who do not adhere to oncological principles or in centers lacking CNB capabilities. When unprepared excisional biopsies are performed at these facilities without regard for obtaining intact surgical margins, pathology reports for invasive tumors frequently cite "tumor extending to the margin" or "margins abutting the tumor." Furthermore, the omission of SLNB during this unnecessary procedure severely complicates subsequent treatment management. The patient requires reoperation, and the inevitable failure of a delayed SLNB increases the rate of axillary lymph node dissection (ALND), subsequently elevating axillary complication rates (9, 11).

When an invasive cancer diagnosis follows an excisional biopsy, the surgeon is forced to return the patient to the operating room to excise the entire tumor bed. Because the initial excisional biopsy specimen cannot be properly oriented, the entire cavity must be re-excised even if only a single margin is positive. Subjecting the patient to a second surgery acts as a major stressor and exposes them to additional anesthesia and surgical risks. In our study, every patient in the excision group underwent a second surgical procedure, either prior to adjuvant chemotherapy or following neoadjuvant chemotherapy. Reoperation was mandated because 32.1% (n = 9) of outside facility pathology reports lacked margin status comments, 46.4% (n = 13) reported positive margins, and 17.9% (n = 5) reported margins closer than 1 mm. Only one patient (3.6%) had definitively negative margins on the initial biopsy report, and this patient subsequently underwent only an SLNB. Following definitive surgery at our center, no residual tumor was found in only 21.4% (n = 6) of the final excision group specimens; the remaining 78.6% (n = 22) contained residual tumor. This high rate of residual disease in final pathology specimens clearly dictates the necessity of these additional surgical interventions.

The secondary surgical procedure necessitated by an initial excisional biopsy can lead to complications such as surgical site infection, seroma, and hematoma due to ongoing inflammation in the skin and breast tissue. Moreover, removing a large volume of breast tissue to secure clear margins during re-excision disrupts tissue integrity and vascularity, further increasing the risk of infection and leading to significant cosmetic deformities. In our study, the overall complication rate was 46% (n = 13) in the excision group and 34% (n = 17) in the CNB group (p = 0.34). Among BCS patients, complications occurred in 66.7% (4 of 6) of the excision group versus 24% (6 of 25) of the CNB group (p = 0.073).

Although not statistically significant, the markedly higher complication rates in the excision group highlight the substantial morbidity associated with forced re-excisions.

Additionally, re-excision is often technically compromised by postoperative seroma or hematoma in the initial tumor bed, as well as the prior suturing of cavity tissues. Tumor cells left in the tumor bed or cavity wall are exposed to numerous growth factors, which can trigger local and systemic recurrence. Poorly planned initial incisions also present severe cosmetic challenges during definitive surgery (5, 12). Consequently, the surgeon is frequently compelled to perform a mastectomy rather than breast-conserving or oncoplastic surgery. This mechanism explains the higher mastectomy rate in our cohort. In our study, the mastectomy/MRM rate was 75% ($n = 21$) in the excision group compared to 50% ($n = 25$) in the CNB group ($p = 0.035$), while the BCS rate was 21.4% ($n = 6$) and 50% ($n = 25$), respectively ($p = 0.017$). These figures demonstrate that excisional biopsy drastically reduces the opportunity for breast conservation. The inability to orient surgical margins, the disruption of the tumor bed, and the compromised reliability of SLNB are the primary drivers forcing these radical surgeries. Furthermore, transecting tumoral tissue during an excisional biopsy violates core oncological principles. Since the procedure is purely diagnostic, careless dissection can easily rupture the tumor. While proper excision with adequate, untouched negative margins yields excellent disease-free survival, inappropriate and traumatic surgical handling can accelerate local and systemic recurrence.

Failure to adequately localize the tumor bed also hinders the delivery of sufficient adjuvant radiotherapy (RT) (13). To facilitate adjuvant RT after BCS, the tumor bed must be marked with clips. However, unplanned excisions disrupt the tumor bed architecture, severely complicating orientation and creating major obstacles for optimal RT targeting.

In modern breast cancer management, neoadjuvant chemotherapy (NAC) has become standard clinical practice, particularly for patients with large tumors (> 2 cm) or those with HER2-positive or hormone receptor-negative disease. Modern chemotherapeutic agents can significantly downstage tumors and frequently achieve a pathological complete response (14, 15). This yields superior oncological and cosmetic outcomes. Tumor shrinkage following NAC increases the feasibility of BCS; moreover, it reduces the need for extensive axillary lymph node sampling in patients who initially present with node-positive disease, thereby lowering the complications associated with mastectomy and ALND. However, the lymphatic disruption caused by an initial excisional biopsy compromises the accuracy of SLNB and increases false-negative rates. Altered lymphatic drainage leads to insufficient mapping of sentinel nodes, the inadvertent excision of parasentinel or non-sentinel nodes, and consequently, misleading intraoperative frozen section results. In our study, the SLNB failure rate was 25% ($n = 7$) in the excision group versus 16% ($n = 8$) in the CNB group ($p = 0.38$), directly reflecting the detrimental impact of excisional biopsy on axillary staging. This disruption frequently forces the surgeon to perform a highly morbid ALND. While ALND provides excellent regional control, it carries significant risks, including lymphedema, sensory loss, axillary web syndrome, and restricted upper extremity range of motion (16).

The American College of Surgeons Oncology Group Z0011 (ACOSOG Z0011) randomized clinical trial was designed to determine whether SLND alone provides non-inferior survival outcomes compared to ALND in women with a limited number of sentinel lymph node metastases who undergo BCS followed by whole-breast irradiation and adjuvant systemic therapy. The extensive long-term survival data published by Giuliano et al. corroborates the initial Z0011 findings (17).

In our cohort, ALND was performed in 50% (n = 14) of the 28 patients in the excision group and 46% (n = 23) of the 50 patients in the CNB group (p = 0.82). When isolated to patients who underwent BCS, the ALND rates (33.3% vs. 12.0%, p = 0.24) highlight how the lymphatic disruption and subsequent staging inaccuracies caused by excisional biopsy drive up ALND rates even in breast conservation candidates. Correspondingly, morbidity rises in parallel with these radical procedures.

Beyond the adverse oncological outcomes caused by this mismanagement, cost-effectiveness must also be considered. Subjecting patients to unnecessary surgical and anesthetic interventions dramatically inflates healthcare costs, representing a poor allocation of resources. The substantial financial disparity between a core needle biopsy and a diagnostic open surgery cannot be ignored; the cost of a single open biopsy could fund numerous core biopsies without jeopardizing the oncological futures of the patients.

Despite these oncological and cosmetic disadvantages, there are rare instances where a correlation between imaging and CNB cannot be established. A radiologically highly suspicious lesion might yield a benign CNB pathology. If strong clinical suspicion persists in such discordant cases, an excisional biopsy may be justified. Similarly, CNB may fail in certain non-palpable lesions; in these scenarios, a wire-localized excisional biopsy is appropriate. However, the incision for any excisional biopsy must be meticulously planned with the definitive surgery in mind. If the eventual surgery is a mastectomy and the prior biopsy scar falls outside the planned incision lines, it can cause flap tension and vascular compromise. If the definitive surgery is BCS, an outlying scar creates severe cosmetic defects. Periareolar incisions should be favored whenever possible to minimize scarring. For suspicious lesions, the excision should encompass the underlying muscle fascia, and titanium clips must be placed in the cavity for future RT targeting. The surgeon must communicate closely with the pathologist and place orienting sutures on the specimen. In our clinic, we use two long sutures laterally, two short sutures superiorly, and one short suture anteriorly to assist the pathologist. Furthermore, surgeons should not hesitate to excise overlying skin, particularly for superficial lesions.

Our study has several limitations. First, it is a single-center, retrospective analysis, inherently carrying the selection and documentation biases typical of retrospective chart reviews. Second, the sample size is relatively limited. The small number of patients, particularly in the BCS subgroup analyses, likely reduced the statistical power to detect significant differences in secondary endpoints such as SLNB failure, ALND rates, and complications. Third, the excision group consisted exclusively of patients who underwent their initial procedure at outside facilities before being referred to our center. This introduces a significant referral bias, meaning this group may overrepresent complex cases or those requiring more advanced

surgical intervention. Additionally, granular data regarding the outside facilities' initial imaging findings, surgical incision planning, specimen orientation, margin assessment techniques, and cavity clip placement could not be standardized for every patient. Fourth, although the CNB group was selected from patients treated during the same period, the cohorts were not truly randomized. Consequently, variables such as tumor size, multifocality, palpability, axillary status, and neoadjuvant therapy might have influenced surgical decision-making. While multivariable analysis adjusted for certain variables, unmeasured confounders could still impact the outcomes. Finally, complication data were extracted from retrospective records, introducing the risk of underreporting for minor complications. The type, severity, and long-term implications of these complications were also evaluated in a limited capacity. Furthermore, the study did not analyze long-term local recurrence, disease-free survival, or overall survival. Therefore, large-scale, prospective, multicenter studies are required to comprehensively evaluate the impact of initial excisional biopsy on long-term oncological outcomes.

Conclusion

The lack of core needle biopsy equipment, restricted access to ultrasound, and a shortage of experienced physicians at certain institutions can severely disrupt patient management. Rather than performing a primary excisional biopsy for a clinically or radiologically suspicious breast mass, physicians should immediately refer the patient to a center equipped with appropriate diagnostic modalities and a multidisciplinary oncology team. Failing to do so results in inadequate primary surgeries; a vast majority of these patients are left with residual tumor, forcing them to undergo unnecessary secondary surgeries. This mismanagement directly increases mastectomy rates, compromises SLNB reliability, and prolongs the overall diagnostic and therapeutic timeline. Ultimately, prioritizing CNB yields vastly superior outcomes in both oncological management and cost-effectiveness. Excisional biopsy should be strictly reserved for highly selected cases where CNB is discordant or technically unfeasible, and the surgical incisions must always strictly adhere to oncological principles.

Abbreviations

BI-RADS: Breast Imaging Reporting and Data System

CNB: Core Needle Biopsy

EB: Excisional Biopsy

BCS: Breast-Conserving Surgery

Declarations

Ethics approval and consent to participate

The study was approved by the Mersin University Clinical Research Ethics Committee (Decision No: 1045, Date: October 30, 2024). The study was conducted in accordance with the Declaration of Helsinki. Due to the retrospective nature of the study, the requirement for informed consent was waived by the Ethics Committee. Demographic, clinical, radiological, pathological, and surgical data were collected retrospectively from electronic medical records.

Consent for publication

Not applicable.

Availability of data and materials

The datasets used and/or analyzed during the current study are available from the corresponding author on reasonable request.

Competing interests

The authors declare that they have no competing interests.

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Authors' contributions

Cüneyt Akyüz conceived and designed the study. Cüneyt Akyüz, Hüseyin Pülat, and Cemil Yüksel collected the clinical data. Cüneyt Akyüz, Serdar Gümüş, Oğuzhan Söyler, Deniz Öztaşan, and Cezmi Baran Özalp analyzed and interpreted the data. Cüneyt Akyüz drafted the manuscript. All authors critically revised the manuscript, read, and approved the final version.

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Figures

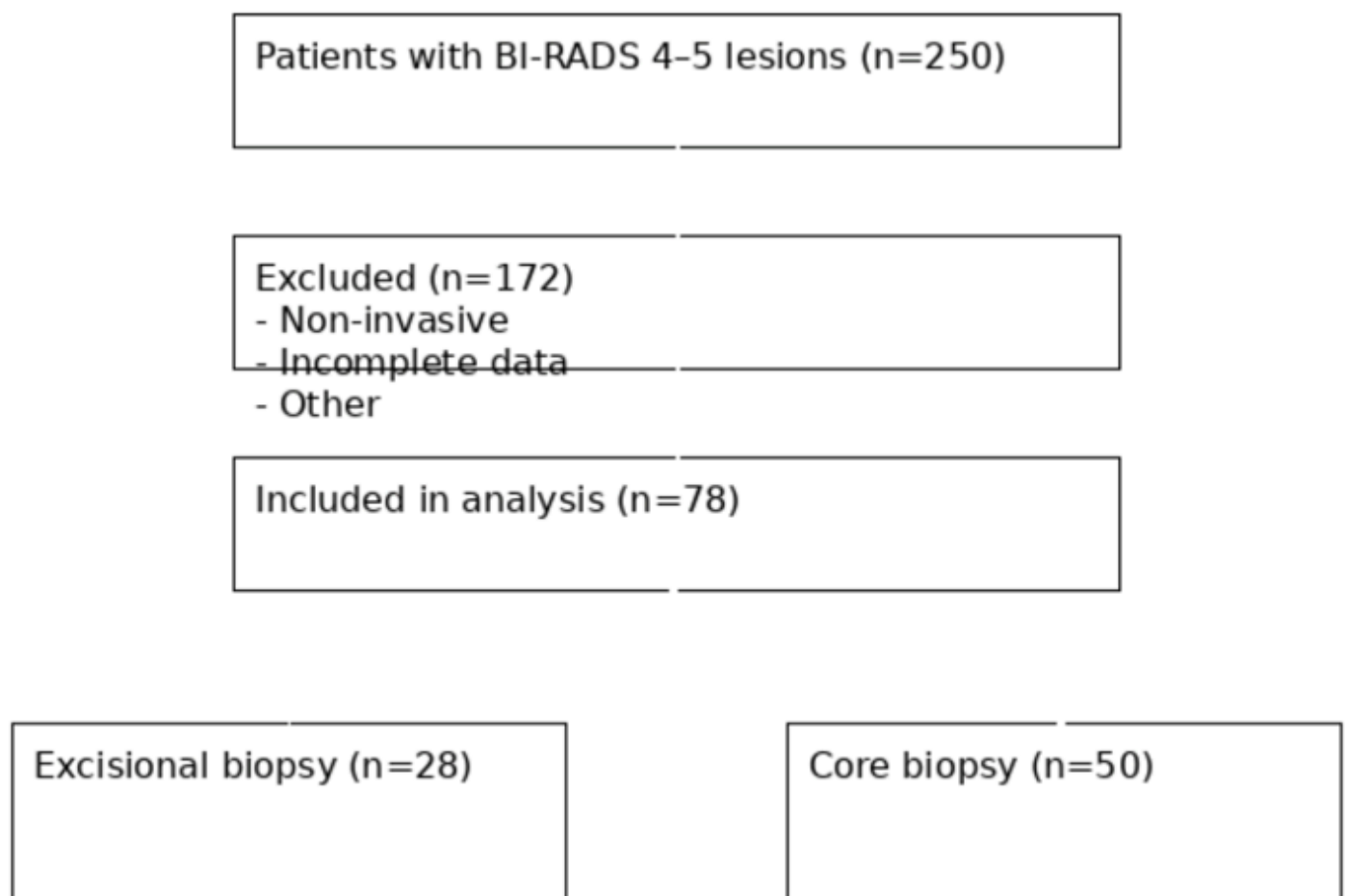


Figure 1

Flow diagram of patient selection

