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CONTEMPORARY MANAGEMENT OF PHYLLOIDES TUMOR WITH VACUUM-ASSISTED BIOPSY: A CASE REPORT

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CONTEMPORARY MANAGEMENT OF PHYLLOIDES TUMOR WITH VACUUM-ASSISTED BIOPSY: A CASE REPORT [ENGLISH]

SUMMARY
Fibroadenomas are the most frequent benign breast tumors in young women. Phyllodes tumors (PTs) of the breast are uncommon fibroepithelial neoplasms, representing less than 1% of all breast tumors but requiring distinct management due to their unpredictable clinical behavior. In recent years, vacuum-assisted excision (VAE) has gained popularity as a minimally invasive option that allows for both diagnosis and therapeutic removal of benign lesions with minimal morbidity. We present a case of a 32-year-old female patient with a 20 mm well-defined lesion in the lower outer quadrant of the right breast. Ultrasound imaging revealed typical features of a benign solid mass, most consistent with fibroadenoma. A vacuum-assisted biopsy was performed under local anesthesia using a 9-G needle. Approximately 90% of the lesion volume was successfully excised. Histological examination revealed a biphasic benign lesion with characteristics of fibroadenoma and focal features consistent with a benign phyllodes tumor. Given the predominantly fibroadenomatous structure and the benign histology, no further surgical intervention was deemed necessary. At 6-month follow-up, ultrasound showed no evidence of regrowth or residual mass, and the patient remained asymptomatic. VAE represents a modern, effective, and patient-friendly approach for managing benign breast lesions such as fibroadenomas and benign phylloides tumors, particularly those under 3 cm in size.

KEYWORDS
Fibroadenoma, Phyllodes tumor, Vacuum-assisted biopsy, Minimally invasive breast surgery, Benign breast lesion

INTRODUCTION
Phyllodes tumors (PTs) of the breast are uncommon fibroepithelial neoplasms, representing less than 1% of all breast tumors but requiring distinct management due to their unpredictable clinical behavior [1], [2]. Unlike fibroadenomas, phyllodes tumors can be benign, borderline, or malignant based on histologic criteria, including stromal cellularity, atypia, mitotic activity, and tumor margins [3]. They are characterized by rapid growth, and though many are benign, borderline and malignant forms carry risks of local recurrence and rare distant metastasis [2, 3, 4]. Surgical excision with clear margins has traditionally been the treatment of choice, aiming to reduce the risk of local recurrence [5], [6], [7], [8]. Wide local excision with 1 cm margins is often recommended, especially for borderline and malignant subtypes [7]. However, wide excision may result in cosmetic deformity, and some patients seek less invasive alternatives.
Vacuum-assisted excision (VAE) has become a popular minimally invasive technique for benign breast lesions, such as fibroadenomas [9], [10], [11], and recent studies have explored its role in selected small phyllodes tumors [9]. VAE enables complete removal of lesions under image guidance through a small incision with minimal scarring, preserving breast architecture.
Herein, we present a case of a 20 mm phyllodes tumor successfully treated with ultrasound-guided VAE, illustrating its potential role as an alternative to open surgical excision in carefully selected cases.

PRESENTATION OF CASE
A 32-year-old female presented with a rapidly enlarging palpable mass in the upper outer quadrant of her left breast. On clinical examination, the lesion was firm, well-circumscribed,

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mobile, and approximately 2 cm in diameter. The overlying skin appeared normal without dimpling, erythema, or nipple discharge, and no axillary or supraclavicular lymphadenopathy was detected. The patient reported no family history of breast or ovarian cancer and was otherwise healthy.

Breast ultrasound revealed a 21 × 19 mm oval, hypoechoic, well-defined lesion with heterogeneous internal echotexture and smooth, lobulated margins (Fig. 1). Color Doppler assessment demonstrated mild peripheral vascularity without significant internal flow. No associated calcifications or suspicious axillary lymph nodes were seen. The lesion was categorized as BI-RADS 2.

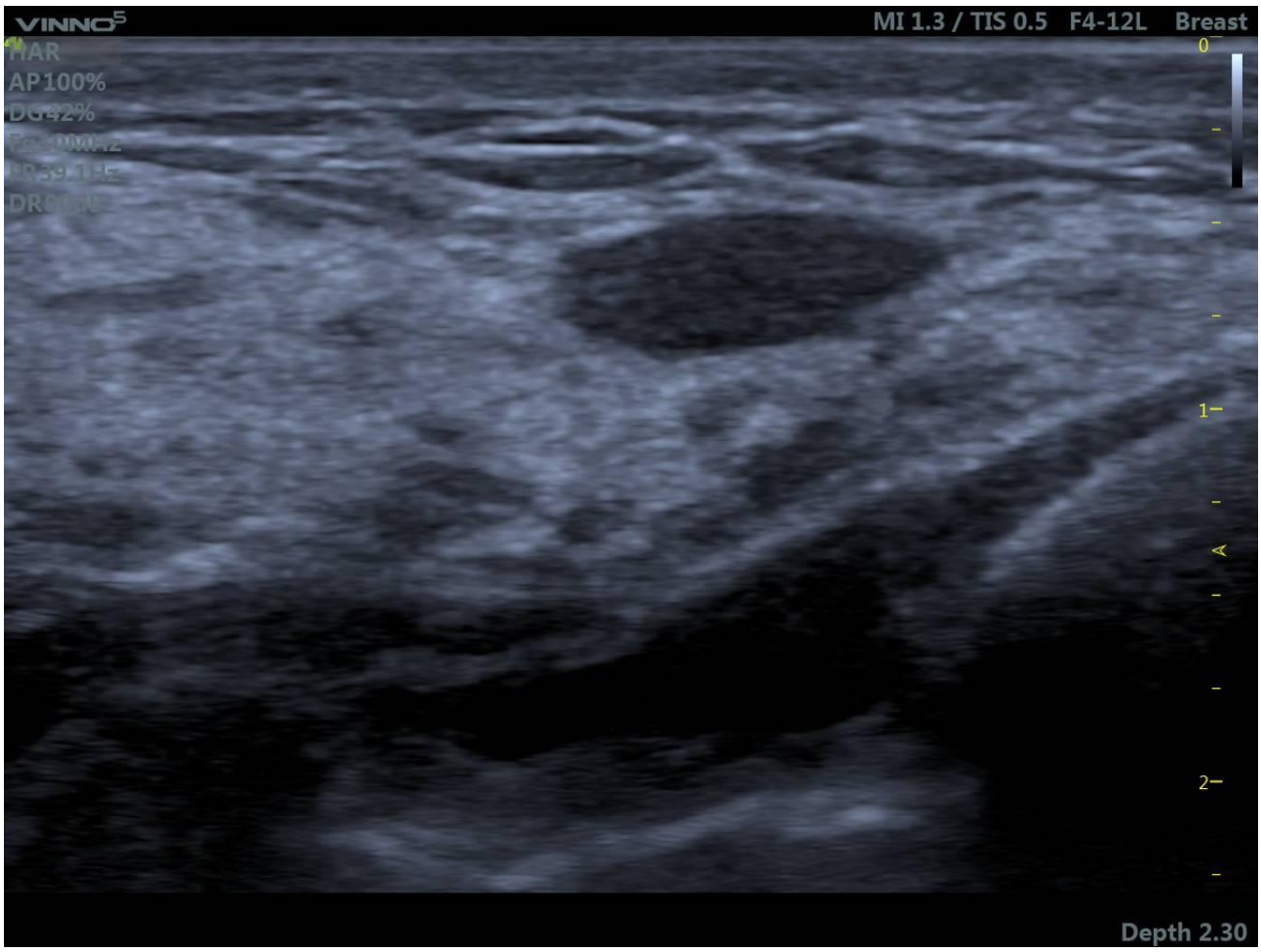


Figure 1: Ultrasound image of the lesion

After multidisciplinary discussion, and considering the lesion's small size, well-circumscribed margins, and the patient's preference to avoid open excision, vacuum-assisted excision (VAE) was selected. Under local anesthesia (10 mL of 1% lido-caine) and real-time ultrasound guidance, a 9-gauge vacuum-assisted device was introduced through a 2 mm skin incision in the lateral breast. A total of 10 cycles were completed (each cycle yielding 12 cores), resulting in the removal of approximately 90% of the lesion volume. As shown in Figure 1, the X-ray image of the specimen is seen immediately after vacuum aspiration. The macroscopic features of the aspirated specimen are shown in Figure 2. The procedure was completed in 25 minutes, with minimal blood loss (<5 mL). Hemostasis was secured using brief manual compression, and a sterile dressing was applied. No sutures were required.

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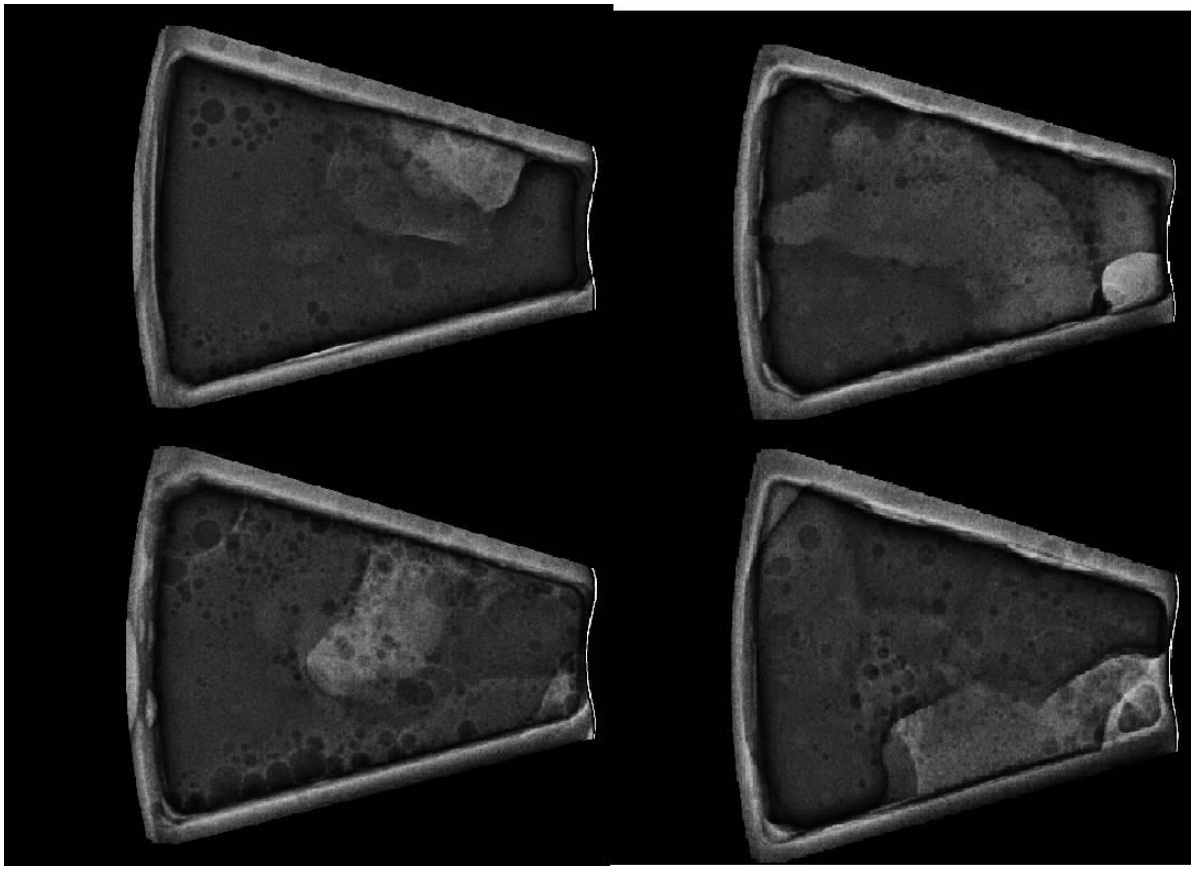


Figure 2: X-ray view of the specimen

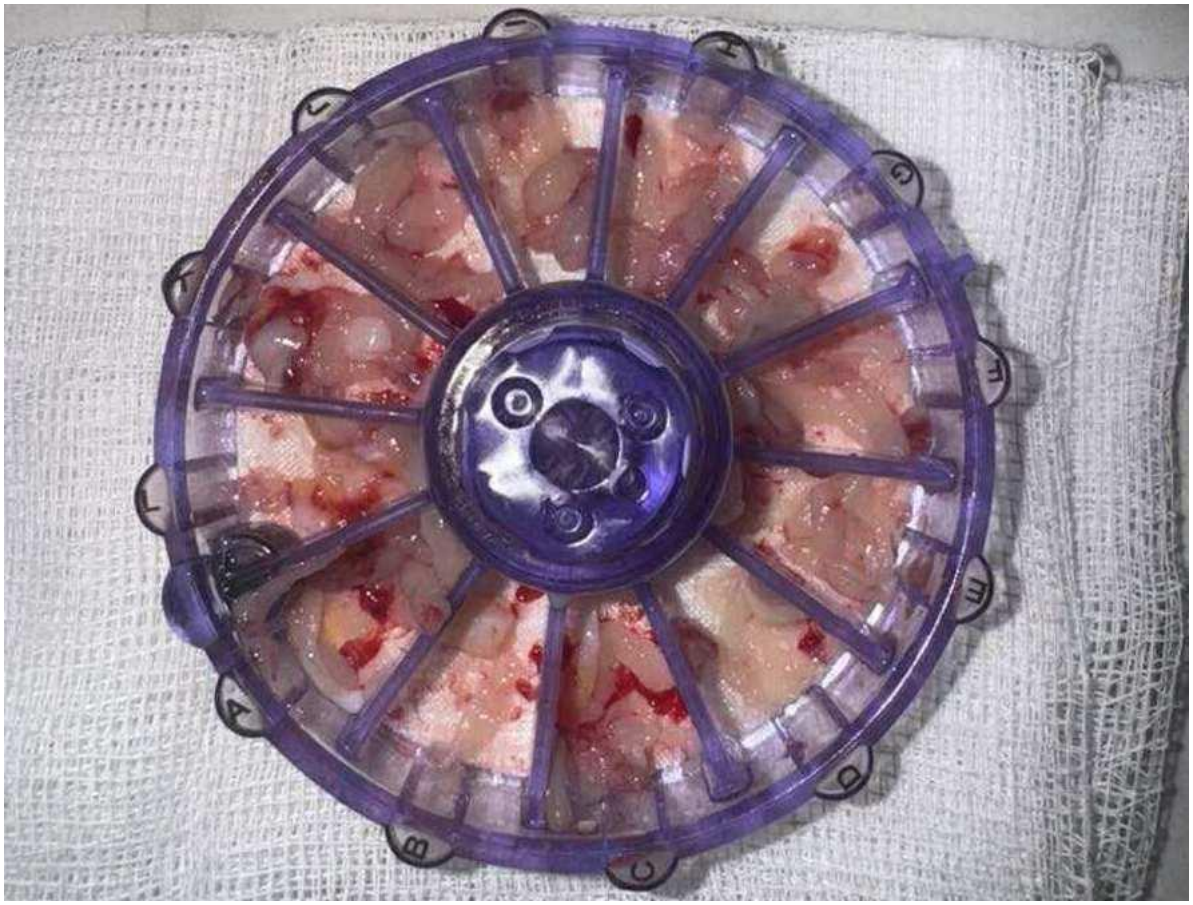


Figure 3: Macroscopic view of the specimen

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The immediate postoperative course was uneventful. The patient reported only mild discomfort (pain score 1/10). There was no hematoma, seroma, or wound infection. She was discharged on the same day and resumed normal daily activities within 48 hours.
Histopathological analysis demonstrated a fibroepithelial neoplasm with increased stromal cellularity, mild nuclear atypia, and characteristic leaf-like architecture, consistent with a benign phyllodes tumor. Mitotic activity was low (<2 per 10 high-power fields), and no stromal overgrowth or necrosis was observed, as shown in Figure 4.



Figure 4: Biphasic lesion with foci resembling an intracanalicular (phyllodes-like pattern) and a pericanalicular pattern. Hematoxylin and eosin stain, ×100

At the one-month follow-up, the incision site was well healed, with minimal scarring and no palpable residual mass. At six-month follow-up, clinical examination and targeted ultrasound confirmed the absence of local recurrence or residual lesion. Breast contour and symmetry were preserved, and the cosmetic result was judged excellent (See Fig-ure 5). The patient expressed high satisfaction with both the minimally invasive approach and the aesthetic outcome.

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Figure 5: Esthetic result after 6 months

DISCUSSION

Phyllodes tumors are unique fibroepithelial neoplasms that require complete excision due to their tendency for local recurrence, which ranges from 10% to 40% depending on the tumor subtype and margin status [7], [8]. While surgical wide local excision remains the gold standard, minimally invasive options such as VAE are gaining interest for small, benign phyllodes tumors [10], [11].

Vacuum-assisted excision offers advantages such as reduced scarring, shorter recovery time, and the ability to obtain sufficient tissue for histological diagnosis and margin assessment. Studies on VAE for phyllodes tumors remain limited but promising. For tumors under 3 cm and classified as benign on biopsy, VAE can achieve complete excision with low morbidity [9], [11].

However, VAE has limitations in the management of phyllodes. Unlike fibroadenomas, fibroepitheliomas have a potential for borderline or malignant histology and recurrence, necessitating rigorous pathological evaluation and close follow-up. Inadequate excision margins may increase the risk of recurrence, making patient selection crucial.

Alternative minimally invasive techniques, such as high-intensity focused ultrasound (HIFU) or cryoablation, have not been widely studied in phyllodes tumors and lack the capability for histologic confirmation [12], [13].

In our patient, VAE was effective for the complete removal of a small benign phyllodes tumor, with no complications and a good cosmetic outcome. The patient remains under surveillance with regular clinical and imaging follow-up.

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CONCLUSIONS

Vacuum-assisted excision (VAE) represents a promising minimally invasive alternative to traditional wide local excision for small, benign phyllodes tumors of the breast. It offers the advantages of reduced scarring, faster recovery, and preservation of breast aesthetics while allowing complete lesion removal and adequate tissue sampling for histological evaluation. Careful patient selection and thorough pathological assessment are essential to ensure safety and minimize the risk of recurrence.

While surgical excision remains the gold standard, especially for borderline and malignant phyllodes tumors, VAE can be considered an effective and patient-friendly option in selected cases with tumors under 3 cm and benign histology. Continued research and longer-term follow-up studies are needed to establish definitive guidelines for the broader application of this approach in phyllodes tumor management.

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AI statement:

During the preparation of this work, the authors used ChatGPT to complete the grammar and spelling. After using this tool, the authors reviewed and edited the content as needed and take full responsibility for the publication's content.

Consent:

Written informed consent was obtained from the patient for publication and any accompanying images. A copy of the written consent is available for review by the Editor-in-Chief of this journal on request.

Conflict of interest:

No relevant conflict of interest

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