



DOI: 10.32768/abc.202293398-400



## Benign and Borderline Phyllodes: Management and Follow-Up

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## ARTICLE INFO

**Received:**  
21 January 2022  
**Revised:**  
12 March 2022  
**Accepted:**  
15 March 2022

**Keywords:**  
Phyllodes tumours,  
Management,  
Follow-up

## ABSTRACT

**Background:** Phyllodes tumours of the breast are benign, borderline or malignant fibroepithelial lesions. They are uncommon and usually treated with surgical or radiological excision. The association with local recurrence has led to much debate over the extent of excision margins. It has traditionally followed that clinical surveillance for local recurrence is necessary following surgery. Follow-up is without any nationally agreed protocol and is therefore variable.

**Methods:** After exclusions, 116 cases of benign (n=81), borderline (n=30) and malignant (n=5) phyllodes tumours were identified in a single centre, between 2005 and 2018. These were analysed using a database, electronic patient records and notes-based review.

**Results:** Benign recurrence occurred in six patients with complete excision of benign PTs (7.4%) and one with borderline PT (3.3%). No malignant Phyllodes tumours developed following excision of benign or borderline lesions.

**Conclusion:** This study of 13 years experience with 111 non-malignant Phyllodes tumours provides support for no routine clinical surveillance, but it supports patient education and open access to breast clinic.

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### INTRODUCTION

Phyllodes tumours (PTs) of the breast are uncommon fibroepithelial neoplasms,<sup>1</sup> classified as benign, borderline or malignant. Surgical or radiological vacuum-assisted excision typically forms the primary management.<sup>2</sup> Excision is required for accurate classification.<sup>3</sup> Malignant lesions are usually treated with wide surgical excision,<sup>3</sup> and oncological management by sarcoma specialists.<sup>3,4</sup>

Local recurrence of PTs has a reported incidence of between 7.3% and 17%.<sup>4,5,6</sup> There has been debate about the margins of excision and the value of re-excisions for non-malignant lesions.<sup>7</sup> Increasingly, a negative margin is considered sufficient and margin width is not predictive of local recurrence.<sup>2,5,7,8</sup> A tumour-free excision margin may reduce local

recurrence,<sup>9</sup> however, the significance of clear margins or re-excision remains uncertain.<sup>10</sup> There is great variation in patients' surveillance protocols following the excision of PTs.<sup>11</sup> Few clinicians discharge patients immediately after surgical excision with many units having no local guidelines on PT follow-up.<sup>11</sup> The value of clinical follow-up following complete excision of benign and borderline PTs remains unclear.

The primary aim of this study was to evaluate follow-up practice for non-malignant PTs in a multi-clinician unit and overall outcomes. The secondary aim was to produce recommendations for future follow-up after non-malignant PT excision.

### METHODS

#### Data Collection

This study was approved by the Research Governance Committee of the Royal Devon and Exeter NHS Foundation Trust. A prospectively collected histopathological database (SNOMED) identified all cases of benign, borderline and malignant PTs between 2005 and 2018 in a single unit comprising between 3

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and 5 surgeons. Corresponding clinical and radiological information was obtained from electronic records (Clinical Data Management and InSight radiology databases). Data on follow-up, episodes of recurrence and development of breast cancers and sarcoma were collected.

#### *Exclusion Criteria*

Of 175 pathology coded PT entries, repeat patient entries (N=31) and those histopathology not related to our unit (N=4) were excluded. Thus, 140 patients were further analysed, of whom 24 had PTs at biopsy but non-Phyllodes lesions following excision. The remaining 116 had a diagnosis of PT. Of these, 81 (median age 33 years, interquartile range (IQR) 24.5) were benign, 30 (median age 46, IQR 21) borderline and five (median age 62, IQR 35.5) malignant.

#### *Statistical Analysis*

Follow-up plans, recurrence rates and significant adverse events were analysed for all PTs treated at our institution.

## **RESULTS.**

#### *Margins, re-excisions and recurrence rates*

Re-excision was performed following 14 (17.3%) benign PT excisions and 2 (6.7%) borderline PT excisions. Following primary operation, no re-excision was undertaken despite close or involved margins with 3 (3.7%) benign PTs and 4 (13.3%) borderline PTs; however, no recurrence was seen in any of these patients. Benign recurrence occurred in six patients with complete excision of benign PTs (7.4%) and one with borderline PT (3.3%). No malignant PTs developed following the excision of benign or borderline lesions.

#### *Follow-up*

In this study, 17% of patients in each of the benign and borderline groups were lost to follow-up. Of the remaining patients, 37% that underwent benign PT excision had a planned 5 year clinical follow-up, versus 68% with borderline PT. No clinical follow-up was scheduled for a proportion of each group (12% benign and 4% borderline). The remainder (51% and 28% respectively) were followed up for less than 5 years.

One patient with previous excision of a borderline PT developed an incidental invasive lobular carcinoma in the contralateral breast and was managed via the breast cancer pathway. No patients developed sarcoma or malignant recurrent PT. Malignant PTs were managed by the sarcoma specialists in our unit with radical excisional surgery and / or radiotherapy. Mastectomy was required in 60% of the malignant PTs.

#### *Other adverse effects*

Following benign recurrence and repeated positive biopsies, two patients sought counselling for risk-reducing mastectomies. One proceeded to bilateral skin-sparing mastectomies with reconstruction after repeated metachronous benign PTs.

## **DISCUSSION**

Benign PTs and borderline PTs, though occasionally recurrent, did not result in malignancy over the study period, with median clinical follow-up of 3 and 5 years, respectively.

The recurrence rate following complete excision of benign PTs was low (7.4%), in line with quoted figures.<sup>5</sup> Only one recurrence occurred following the complete excision of borderline PTs, despite 96% undergoing clinical follow-up. Close or involved margins not re-excised did not result in recurrence suggesting re-excision may not be indicated. Although others have suggested a short period of radiological follow-up,<sup>12</sup> this study demonstrates that no routine follow up is safe as no malignant PTs followed.

Within our single institution, there was variability in follow-up, which may have been clinician dependent, with no standardised protocol. Such variation has also been highlighted nationally in a survey conducted by Amer *et al.*,<sup>10</sup> reflecting a widespread lack of consensus and recommendations.<sup>11</sup>

Based on thirteen years of experience in a large tertiary referral breast unit, clinical follow-up offers little benefit. This study, however, demonstrated that anxiety, from repeated core biopsies after benign PT excision, led two women to seek risk-reducing surgery. This was an unanticipated finding but draws attention to the risk of over-investigation. Due to the potential for recurrence, radiological follow-up for two years has been proposed by some.<sup>5</sup> However, this appears to provide no benefit as no malignant PTs and only a single incidental carcinoma occurred in this study. Conversely, protracted follow-up can result in the detection of further sub-clinical benign lesions, with resultant patient anxiety, biopsies and further non-therapeutic interventions.

Consensus regarding follow-up is needed.<sup>11</sup> Other groups have found open clinic access a reasonable alternative.<sup>13</sup> The benefits of improved service efficiency and reduced unnecessary patient anxiety with hospital appointments support this move.<sup>13</sup> The COVID-19 pandemic provides an impetus to consider the merit of follow-up. This substantial analysis of non-malignant PTs demonstrated a low recurrence rate and no associated malignancy. Thus, a move away from routine clinical surveillance is reasonable.



## CONCLUSION

Local recurrence does occur following complete excision of benign and borderline PTs but the development of malignancy is rare. Routine clinical follow-up is not indicated but education in breast health and awareness, alongside open access to early clinical review, is recommended.

## ACKNOWLEDGEMENTS

We would like to thank Claire Murray, Histopathologist, for her assistance with retrieving pathology coding details in this series.

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## How to Cite This Article

Sharma A, Hyde K, Ferguson D. Benign and Borderline Phyllodes: Management and Follow-Up. *Arch Breast Cancer*. 2022; 9(3): 398-400.

Available from: <https://www.archbreastcancer.com/index.php/abc/article/view/523>