The Management Strategy of Benign Solitary Intraductal Papilloma on Breast Core Biopsy

Dayoung Ko,[1] Eunyoung Kang,[1] So Yeon Park,[2] Sun Mi Kim,[3] Mijung Jang,[3] Bo La Yun,[3] Sumin Chae,[1] Yerang Jang,[1] Hye Jin Kim,[1] Sung-Won Kim,[4] Eun-Kyu Kim[1]

Abstract

We evaluated cancer upgrade rate of intraductal papilloma (IDP) without atypia after excision for 346 patients. Overall upgrade rate was 2.3%. Mass size was the only predictor for cancer. Higher upgrade rate was observed in patients with a larger mass (> 2 cm: 15.8%, 1-2 cm: 3.0%, and ≤ 1 cm: 0.9%). Our study suggested that small (≤ 1 cm) IDP without atypia could be followed-up.

Background: Intraductal papilloma (IDP) is well-known as one of the common benign breast lesions requiring excision. However, treatment of IDP without atypia is controversial. The aim of our study was to determine the proper management of solitary IDP by core needle biopsy (CNB). **Patients and Methods:** We retrospectively reviewed patients with solitary IDP confirmed by CNB from March 2003 to March 2015. We collected data about final pathology after excision, as well as clinical, histologic, and radiologic findings at initial diagnosis. The final pathology was categorized as benign or malignant. We evaluated the rate of upgrade to malignancy and factors associated with malignancy. **Results:** We identified 405 patients who presented benign solitary IDP by CNB. The mean age was 46.1 years (range, 15-86 years). In total, 135 patients underwent surgical excision, and 211 underwent vacuum-assisted excision. Of 346 patients, malignant lesions were found in 8 patients (2.3%): 7 underwent surgical excision, and 1 underwent vacuum-assisted excision. Only the size of IDP was significantly associated with cancer upgrade ($P = .003$). **Conclusions:** Our study shows that overall malignancy upgrade rate of benign solitary IDP after excision is very low (2.3%). Even when the size of IDP was less than 1 cm, the upgrade rate to cancer was only 0.9%. Therefore, for patients with small solitary IDP, we recommend close follow-up with ultrasound instead of excision.

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Introduction

Papillary breast lesions are commonly diagnosed by core needle biopsy (CNB) and present various presentations from benign papilloma and atypical papilloma to invasive carcinoma.[1] Benign papilloma is histologically composed of a fibrovascular core, a myoepithelial layer, and an outer layer of epithelium without atypical features. Atypical papilloma is characterized by the presence of a focal atypical epithelial proliferation such as atypical ductal hyperplasia or small foci of low-grade ductal carcinoma in situ (DCIS). Papillary breast lesion has received much attention in recent years owing to its management, which is still controversial. In case of atypical papilloma, it is accepted that excision should be performed, because the cancer upgrade rate after excision has been reported to be 6.7% to 38.1%.[2-6] However, the management procedure for benign intraductal papilloma (IDP) without any symptoms and atypia remains debatable. The importance of excision in IDP to exclude malignancy after excision has been reported by many researchers.[3,7-9] However, recent studies showed lower cancer upgrade rates in benign IDP without atypia and suggested observation without excision.[10,11]

Regarding IDP management, surgical excision is known as the standard method. Nonetheless, there have been attempts to utilize a vacuum-assisted device for IDP excision because it is less invasive. One study reported that vacuum-assisted excision (VAE) could acquire near-complete removal and replace surgical excision.[12]

[1]Department of Surgery
[2]Department of Pathology
[3]Department of Radiology, Seoul National University College of Medicine, Seoul National University Bundang Hospital, Seongnam, Korea
[4]Department of Surgery, Daerim St. Mary's Hospital, Seoul, Korea

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Address for correspondence: Eunyoung Kang, MD, PhD, Department of Surgery, Seoul National University College of Medicine, Seoul National University Bundang Hospital, 82, Gumi-ro 173 Beon-gil, Bundang-gu, Seongnam-si, Gyeonggi-do, 463-707, Korea
E-mail contact: key5002@gmail.com

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Another review of 6-year VAE experience also suggested that VAE could be a substitute for surgery.[13]

The aims of the present study were to evaluate the cancer upgrade rate of IDP without atypia after excision, to determine the predictors for cancer upgrade, and to evaluate the feasibility of VAE as a treatment option. Finally, this study could introduce a scheme of how to approach the management of solitary benign papillary lesions.

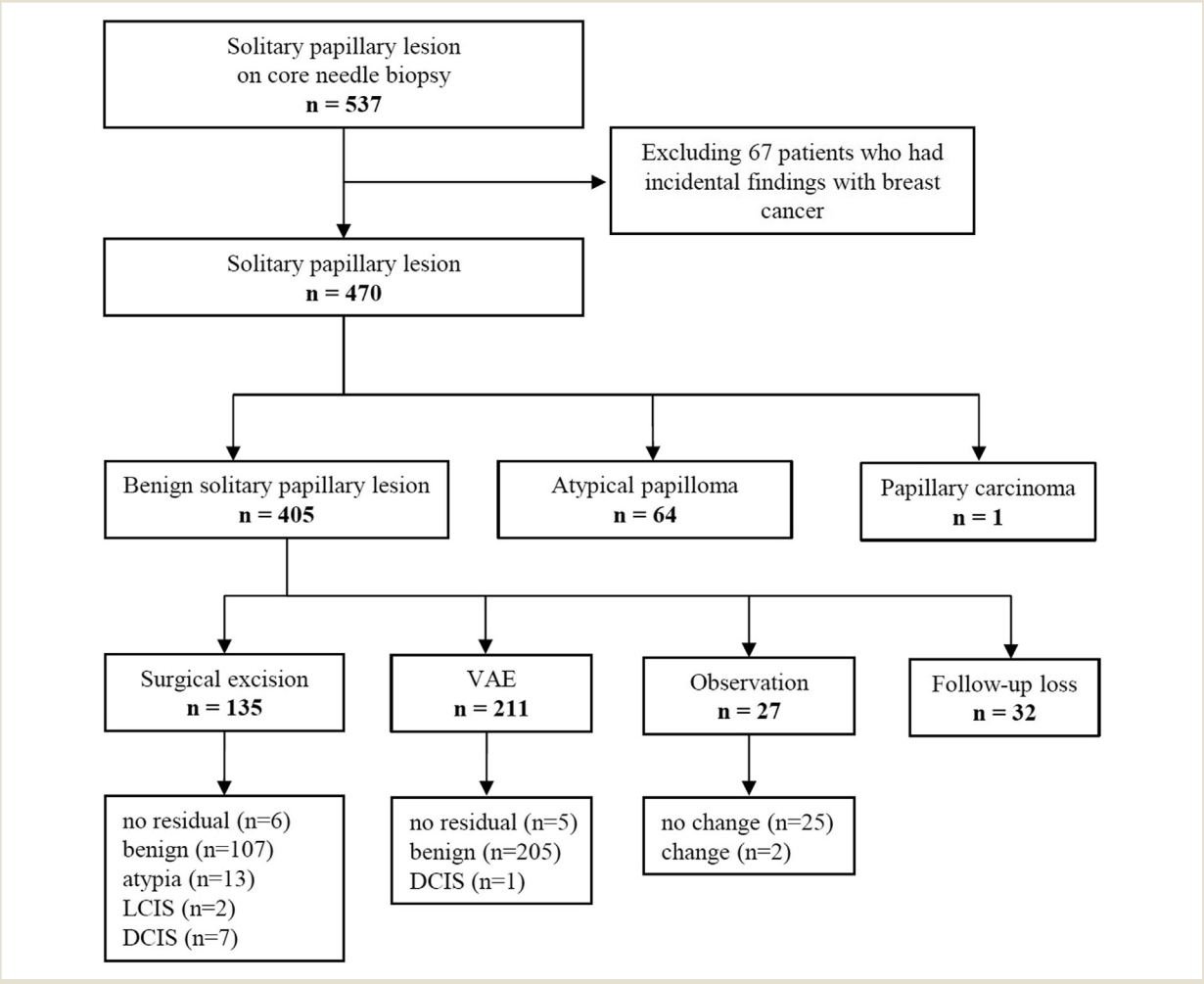
Patients and Methods

We retrospectively reviewed the electronic medical records from March 2003 until May 2015 at Seoul National University Bundang Hospital and collected data about patients who were diagnosed with solitary papillary lesion including IDP, sclerosing papilloma, and papillary neoplasm at breast CNB. A total of 537 patients were identified, and 67 patients who had incidental findings with DCIS or invasive cancer were excluded. Among 470 patients, 64 patients with a concurrent atypical lesion and 1 patient diagnosed with papillary carcinoma were excluded. Finally, 405 patients with benign solitary papilloma were included in our study subjects (Figure 1). Among them, 346 patients who underwent surgical excision or VAE were analyzed for calculating the cancer upgrade rate. This study was approved by the institutional review board of Seoul National University Bundang Hospital (B-1512/328-124).

Data collection was performed, including information about age at diagnosis, symptoms, ultrasound finding (shape, size, distance from a nipple, and Breast Imaging Reporting and Data System [BI-RADS] category), and pathologic results of CNB. Ultrasound-guided CNB was performed using at least 5 puncture times to get an exact diagnosis by breast radiologists.

In general, surgical management was recommended when patients complained of symptoms such as bloody nipple discharge and a palpable mass for symptom relief or when IDP was located near the skin or nipple. If VAE was technically possible, patients selected surgery and VAE. The VAE was performed by a breast-dedicated radiologist (S.M.K., M.J. or B.L.Y.) under ultrasound guidance. An 8- or 11-gauge needle was utilized for ultrasound-guided VAE (Mammotome; Devicor Medical Products, Cincinnati, OH). After

Figure 1 Case Flow of Our Study



Abbreviations: DCIS = ductal carcinoma in situ; LCIS = lobular carcinoma in situ; VAE = vacuum-assisted excision.