Atypical Ductal Hyperplasia of the Breast in Young Women: Two Case Reports

David Johnson, Christopher M. Pyke, Deborah L. Norris1 and Graham F. Adkins,2 Department of Surgery and 1Pathology Services, University of Queensland, Mater Adult Hospital, South Brisbane, Queensland, Australia and 2Drs. Sullivan and Nicolaides and Partners, Pathology Services, Taringa, Queensland, Australia.

Atypical ductal hyperplasia of the breast is a benign proliferative condition that is associated with an increased risk of development of breast cancer in either the ipsilateral or contralateral breast. Following diagnosis at biopsy, respective management options range from observation to chemoprophylaxis to prophylactic surgery. We present two cases in young women, facing prolonged follow-up, one managed with observation only, and the other managed with ipsilateral mastectomy and reconstruction. (Asian J Surg 2003;26(1):37–9)

Introduction

Atypical ductal hyperplasia (ADH) of the breast is a term given to the histopathological entity in a proposed malignant progression where hyperplastic ductal epithelium begins to acquire histological as well as biological characteristics of ductal carcinoma in situ (DCIS).1 Long-term follow-up studies show that women with ADH have approximately five times greater risk of developing invasive breast cancer than women who have ductal hyperplasia but lack atypia.2,3 The defining line between ADH and DCIS is problematical. A size criterion for ADH was introduced in 1990 to separate lesions that have cytological and architectural features of low-grade DCIS and into ADH versus DCIS classification.2 Despite refinements in histological classification and distinction between DCIS and ADH, a clinical dilemma still arises when multiple foci of these pathologies arise. Extremes of surgical management can equally be defended from surveillance to bilateral prophylactic mastectomy, as well as a more “middle ground” approach with chemoprophylaxis. The problem is complicated in younger patients who have a potentially lengthy follow-up, and where breast monitoring by imaging is limited by current technologies. We report two cases demonstrating the management of these borderline lesions.

Case One

A 16-year-old Caucasian girl underwent bilateral breast reduction mammoplasty for juvenile hypertrophy. Her bra size had increased to size double D cup between the ages of 12 and 16. She underwent menarche at age 13. There were no risk factors for breast cancer.

The surgical specimens (right breast, 455 g and left breast, 465 g), were sent for routine histology. In the left breast specimen only, multiple foci of ADH were found (Figure 1). The patient underwent subsequent mammography and ultrasound revealing no foci of breast cancer and no suspicious abnormalities. The patient’s female relatives were also screened. It was estimated that the malignant potential of the lesion found was approximately 10% over 10 years. With no family history, it was estimated that the patient’s chance of carrying an inherited germ-line mutation of either BRCA1 or BRCA2 genes was less than 5%.

The patient went on to have ipsilateral mastectomy and immediate prosthetic reconstruction. In the mastectomy specimen, multiple residual foci of ADH were found. She has been monitored with physical examination, ultrasound and contralateral mammography for 4 years without incident.
Case Two

A 24-year-old Chinese patient presented with a left breast lump. Mammography and ultrasound revealed microcalcifications in the left breast, in the region of her lump. Fine needle aspiration biopsy showed benign cells. Subsequent wire-localized biopsy showed luminal calcification, blunt duct adenosis, some fibroadenomatoid hyperplasia, and a small focus of ADH (Figure 2). It was thought that the calcification was unrelated to the atypical hyperplasia.

The patient has now been monitored for 6 years, has undergone subsequent pregnancies, and has no sign of any further trouble in the breast as assessed by clinical examination and ultrasound.

Discussion

The incidence of breast cancer before age 30 is approximately 1/2,000. ADH, though closely related histologically to DCIS has a different natural history. DCIS will progress to ipsilateral breast cancer in approximately 25% to 50% of cases over the course of 10 years. Conversely, ADH increases the risk of either ipsi- or contralateral breast cancer during the next 10 years, with a peak incidence in the 3rd decade. The presence of a positive family history increases the risk two-fold.

The mode of diagnosis in the first patient was at reduction mammoplasty. Breast cancer in reduction mammoplasty is made in 0.16% of reduction mammoplasties performed, and was the mode of diagnosis in five of nine young women with ADH described by Eliason et al. Routine histopathological examination is recommended for all reduction mammoplasty specimens.

In the second patient, the mode of diagnosis was at core biopsy mandating further excision, as approximately 30% of patients in this situation have occult invasive carcinoma at open biopsy. The options for any high-risk patient for developing breast cancer include surveillance, chemoprophylaxis with tamoxifen, or prophylactic ablative surgery with bilateral mastectomy.

In the first patient, the decision to proceed with prophylactic mastectomy was governed by the fact that the patient had apparently separate but multiple foci of atypical hyperplasia. This blurred the “size criterion” definition of ADH. An ipsilateral prophylactic mastectomy, therefore, seemed a reasonable option, with this diagnostic uncertainty. The immediate reconstruction had no oncological significance but, in a teenager, it was considered important in respect to body image. It is estimated that her chance of developing breast cancer in the ipsilateral breast has now been reduced by 90%.

The decision of the second patient to undergo surveillance only was based on the small amount of disease and the natural history of the condition. This management plan has some potential pitfalls, notably to do with adequately monitoring patients in their third decade. Mammography is less specific, and paradoxically may lead to more “false positive” studies with benign lesions requiring further investigation, such as in this case, which began with investigation of stromal calcification that was of no significance in itself, the ADH being an incidental finding.
References


