Risk of breast cancer following detection of breast lesions of uncertain malignant potential: a 23 year retrospective review
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Background
Breast lesions of uncertain malignant potential (B3 lesions) comprise a heterogeneous group of pathologies. This includes lesions such as radial scars, papilloma, lobular neoplasia and atypical ductal hyperplasia. These lesions are associated with breast malignancy, either at the time of initial diagnosis due to under sampling error or following diagnosis as the presence of a B3 lesion is reported to confer an increased risk of subsequent breast malignancy. This risk varies between lesions, for example radial scars have been reported to have a 2 fold risk of subsequent cancer, with lobular neoplasia reported to confer up to 7 times relative risk of breast cancer. Currently, B3 breast lesions are managed with large bore vacuum assisted biopsy to eliminate the risk of under sampling error and a program of short term enhanced mammographic surveillance to cover the risk of subsequent malignancy. This is usually yearly mammography for 5 years. However, there is no robust evidence to guide the frequency and duration of such follow up. This study compares the incidence of malignancies following diagnosis of B3 lesions, to that in a group of screen detected benign lesions, and discusses whether current mammographic surveillance programmes are appropriately targeted.

Methods
Retrospective, single centre, review of subsequent breast cancer diagnoses in all National Health Service Breast Screening Programme (NHS BSP) detected B3 lesions identified between 1995 and 2008. This was compared to subsequent breast cancer diagnosis in a group of women previously diagnosed with benign breast lesions identified following breast screening between 1995-6 and returned to routine recall. Follow up was to December 2018.

Results
Between 1995 and 2008, 188 B3 lesions were identified. These comprised radial scar/complex sclerosing lesions (41%), atypical ductal hyperplasia (29%), papilloma (39%), lobular neoplasia (8%) and miscellaneous pathologies (1%). Between 1995-6, 161 benign lesions were recalled and assessed with biopsy (B2) or cytology (C2) following NHS BSP mammograms (control group). All subjects were followed up for between 10 and 23 years. Subsequent breast cancer diagnoses occurred in 21 (11.2%) of the B3 group and 12 (7.5%) of controls. Subsequent breast cancers occurred between 1 and 17 years following a B3 lesion diagnosis, often not at the same site as the initial B3 lesion. Kaplan Meier curves showed no significant difference in rate of subsequent breast cancer between the B3 or control groups.

Discussion
There is a risk of subsequent breast cancer following diagnosis of a breast lesion of uncertain malignant potential, however, this is not increased in comparison to a group of women with screen detected benign lesions on routine mammographic surveillance. Cancers following B3 lesion diagnosis occurred at a wide range of time points following a B3 diagnosis, and not predominately occur within the first 5 years following, and were often unrelated to the initial lesion. As such, offering enhanced mammographic surveillance for 5 years within this group of women may not be justified, and only serve to increase patient anxiety.

References