

Synchronous Breast Cancers With Dissimilar Radiological Appearances

Shivany Ganeswaran ¹, Amanda Palmer ¹, Ewan Millar ²

1. BreastScreen NSW South Eastern Sydney Illawarra; 2. Department of Anatomical Pathology, NSW Health Pathology, St George Hospital

Introduction

Eighty to 90% of breast carcinomas present as irregular, spiculated or indistinct masses on imaging [1]. However in about 10-20% of cases the cancer may present as a lesion with a benign (round and well circumscribed) appearance [1, 2]. A potential pitfall in the diagnosis of synchronous breast cancers therefore exists when the second lesion has a benign imaging appearance.

Objectives

To report on the incidence and characteristics of synchronous breast cancers with dissimilar radiological appearances in a cohort of screening patients.

Method

We performed a retrospective cohort study. To be included all patients: (a) had to attend an assessment clinic at BreastScreen NSW SESI between 01 July 2010 and 30 June 2019; (b) have two or more breast lesions biopsied, at least one of which had been classified as radiologically suspicious for malignancy (Lesion 1) with the other considered radiologically equivocal (Lesion 2); (c) have a malignant pathology result for Lesion 1. The cohort was then separated based on whether Lesion 2 was proven to be a cancer (Group A) or benign (Group B).

Figure 1

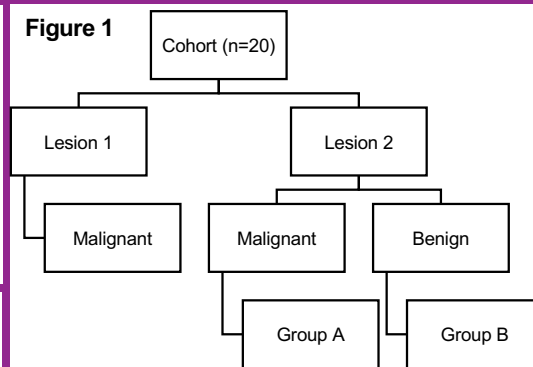
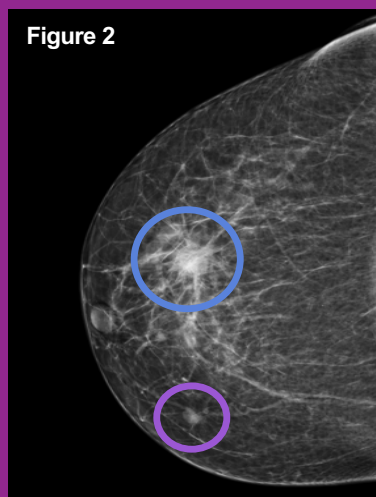


Figure 2



Results

There were 29,643 patients who attended an assessment clinic at BreastScreen NSW SESI over the 10 year period. There were 20 (0.07%) patients who met the study inclusion criteria. Seven (35%) patients were in Group A and 13 were in Group B.

There were 7 radiologically equivocal cancers (Lesion 2) diagnosed in Group A. Two (29%) were of favourable histology (mucinous or papillary). There were two (29%) invasive ductal carcinomas NOS, one of which was high grade. The majority (60%) of benign lesions within Group B were fibroadenomas.

Figure 3

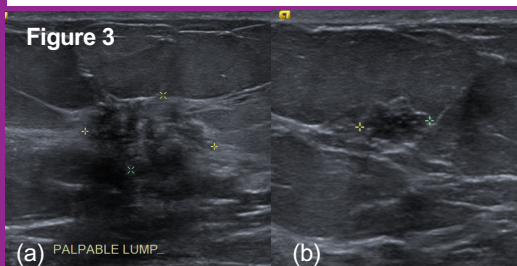


Figure 1. Summary of methodology; (n = number of patients).

Figure 2. Mammographic appearance of a radiologically suspicious lesion, i.e. Lesion 1, (blue) and a radiologically equivocal lesion, i.e. Lesion 2, (purple).

Figure 3. Corresponding ultrasound appearances of Lesion 1 (a) and Lesion 2 (b).

Results 2

Forty-three percent of the radiologically suspicious cancers (Lesion 1) were high grade in Group A, compared to 3% in Group B. In Group A, both Lesion 1 and Lesion 2 were located in the same breast in all cases. This compared to 54% of ipsilateral cancers in Group B.

Conclusion

Synchronous breast cancers with dissimilar imaging appearances are rare in a screening population. Regardless, in this context, the radiologically equivocal lesion should be viewed with a high index of suspicion, particularly as 35% were malignant in our cohort. When the equivocal-appearing lesion was a cancer the radiologically suspicious cancer was also more likely to be high grade.

References

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2. Larribe M, Thomassin-Piana J, Jalaguier-Coudray, A. Breast cancers with round lumps: Correlations between imaging and anatomopathology. *Diagnostic and Interventional Imaging*. 2014; 95: 37-46.