

CANCER DETECTION IN SUBCATEGORIES OF NHSBSP HIGH RISK BREAST CANCER SCREENING

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Purpose

NHSBSP higher risk screening programme (HRSP) for family history and supradiaphragmatic irradiation (SRT) commenced in April 2013. The outcomes, cancer detection rates (CDR), and modality of detection in our institution were reviewed.

Methods

- Retrospective review of HRSP breast cancers between April 2013-2018.
- High risk category, diagnosis, lesion characteristics, imaging modality of cancer detection, biopsy method, and surgical histology were recorded.

Results

- 28 cancers (27/1160 screened) consisting of 19 invasive and 9 non-invasive cancers.
- Only 2 patients required MRI biopsy.
- BRCA1:** Total 13 cancers. Highest CDR (42/1000; 13/313). All were invasive cancers. Cancers presented mainly as masses (92%; 12/13), with microcalcifications in only 1 patient. 6 had MRI and mammograms, with 4 mammogram occult cancers (67%). MRI had 100% (9/9) detection rate.
- BRCA 2:** Total 7 cancers consisting of 3 invasive and 4 DCIS; CDR 23/1000 (7/307). Four were microcalcifications and 3 masses. There was 1 MRI detected mammographic occult cancer with a further 2 MRI detected malignant masses.
- SRT:** Total 6 cancers. CDR of 37.5/1000 (6/160) presenting as 4 masses and 2 microcalcification (4 invasive and 2 DCIS). Mammogram detected 4 and MRI detected 2 cancers.
- Equivalent risk:** Only 1 cancer, DCIS. CDR 16/1000 (1/63).

Conclusion

BRCA 1 carriers have the highest CDR, presenting mostly as masses, best detected on MRI, and frequently mammogram occult. BRCA 2 and SRT have a high rate of associated cancers, detected as microcalcification or masses, with a large proportion detected on mammograms. MRI biopsy was infrequently required.



Fig 1 A-C: Surveillance MRI in BRCA 1 carrier showing a new small enhancing mass in the left breast which was mammographically and sonographically occult and therefore subjected to MRI biopsy which revealed High grade solid DCIS.

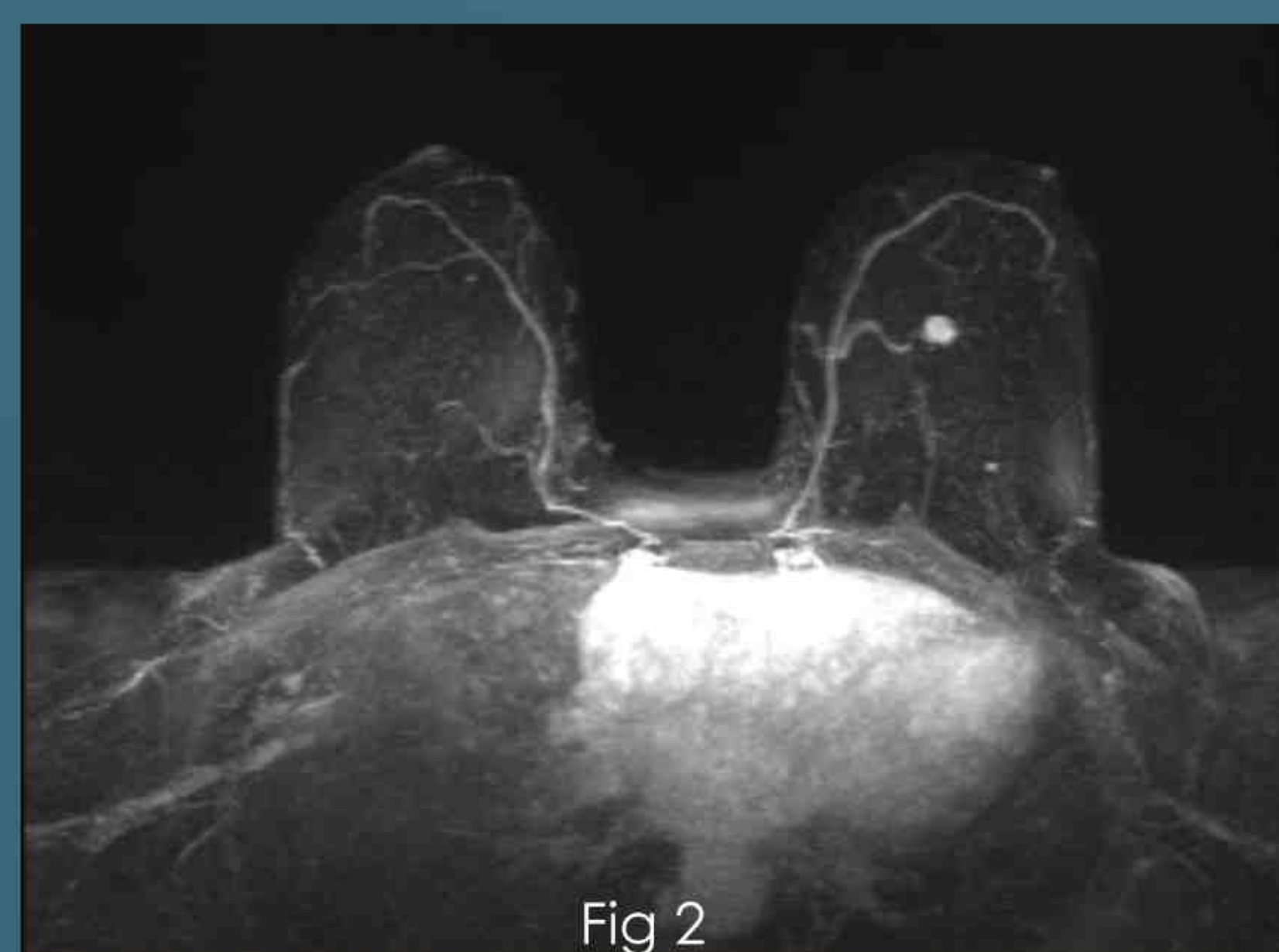
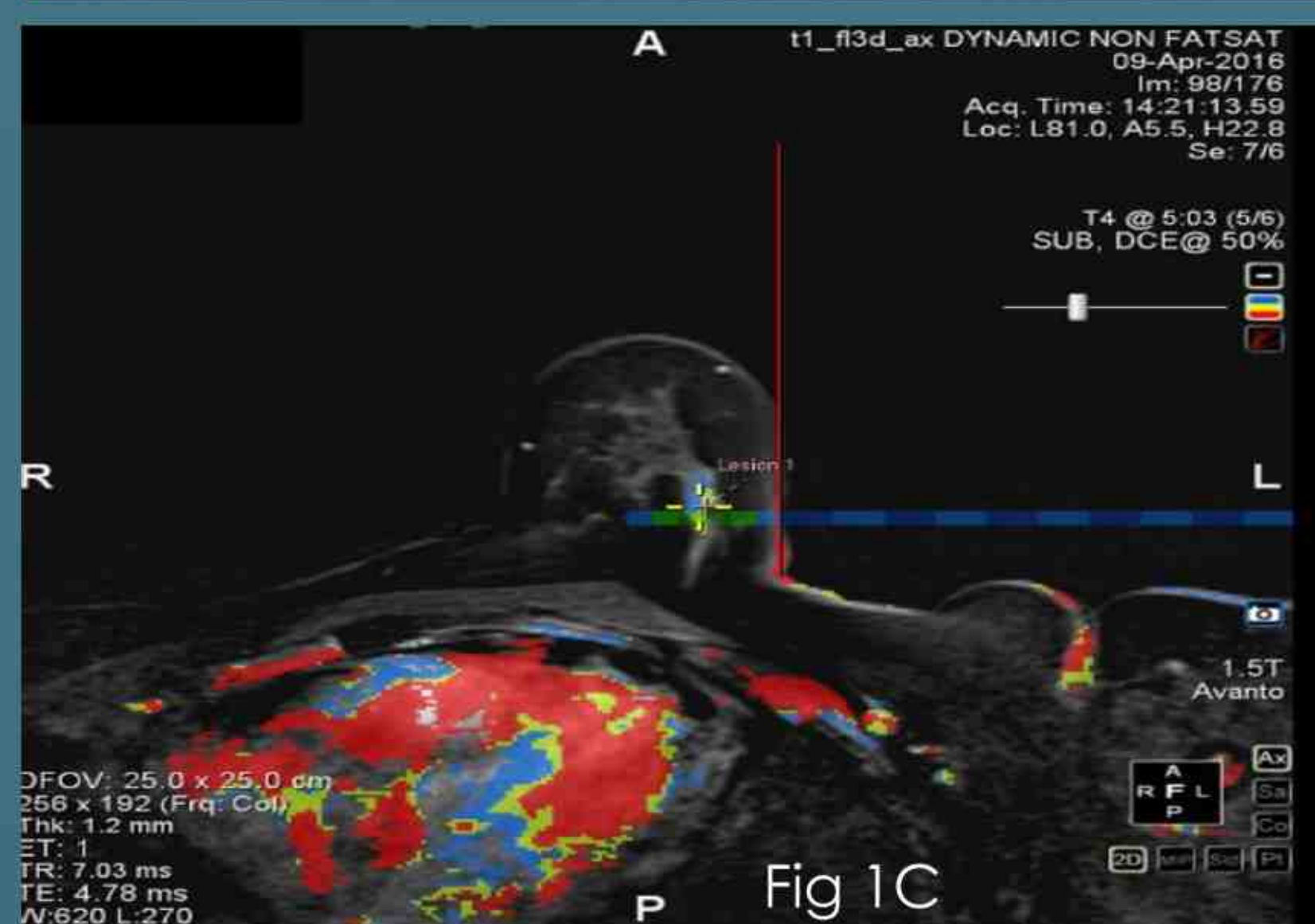


Fig 2: Surveillance MRI in BRCA 1 carrier showing a small enhancing mass in the left breast which corresponded to a 16mm U5 mass on USS. USS guided core biopsy revealed invasive ductal cancer.

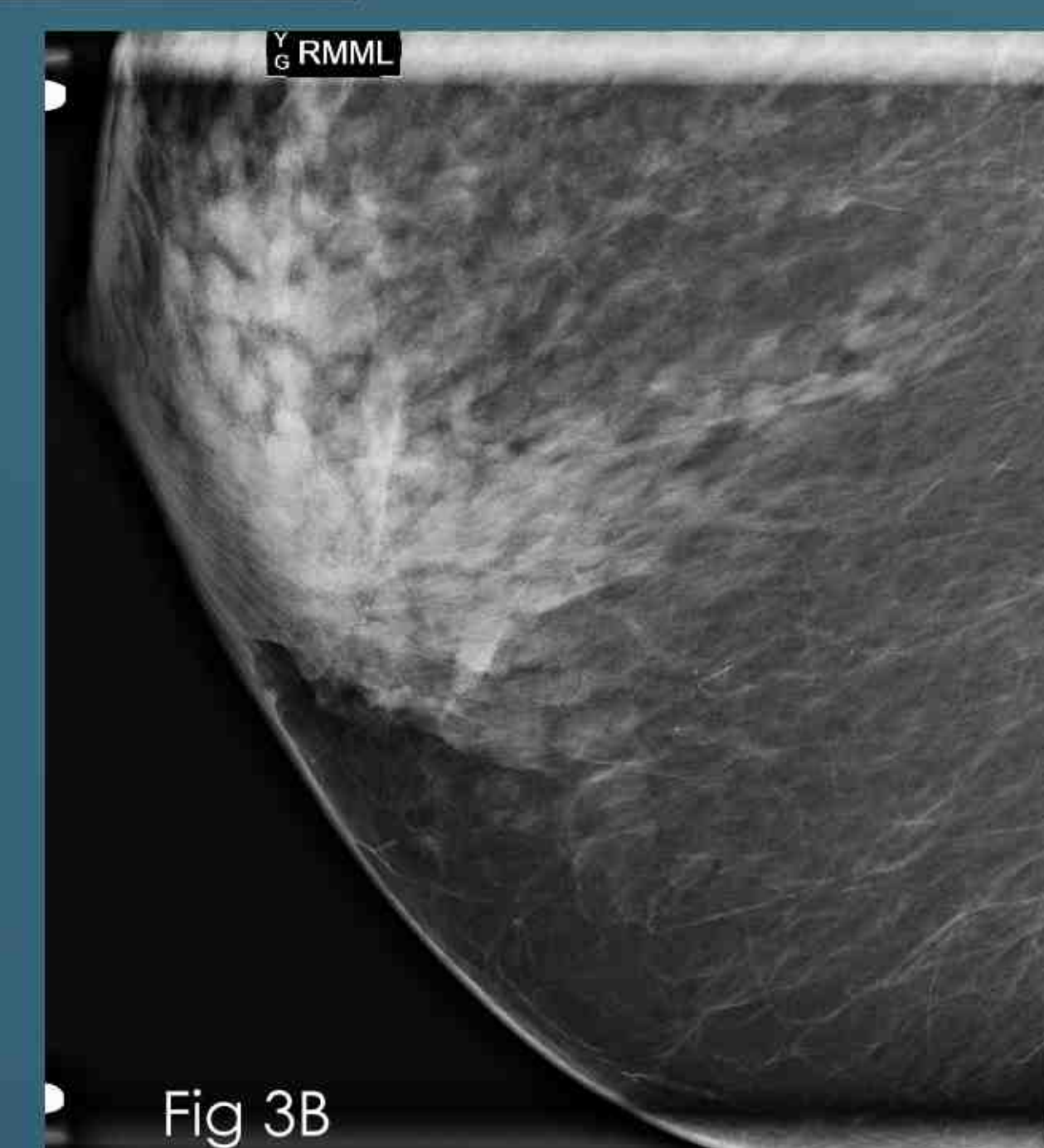
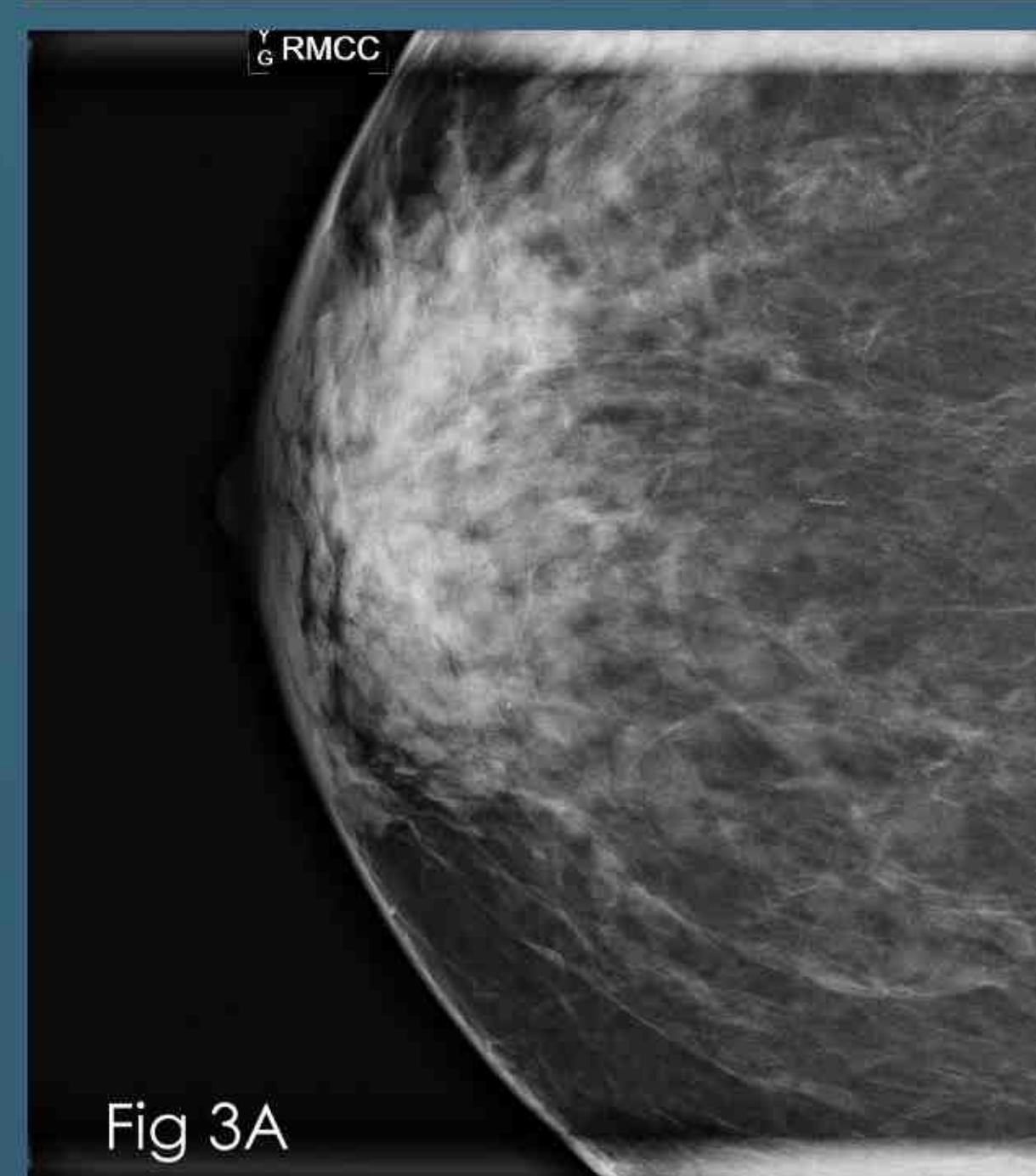


Fig 3 A-B: Magnification views of 25mm new right breast microcalcification in a BRCA 2 carrier, occult on USS. Stereotactic biopsy revealed intermediate grade DCIS.

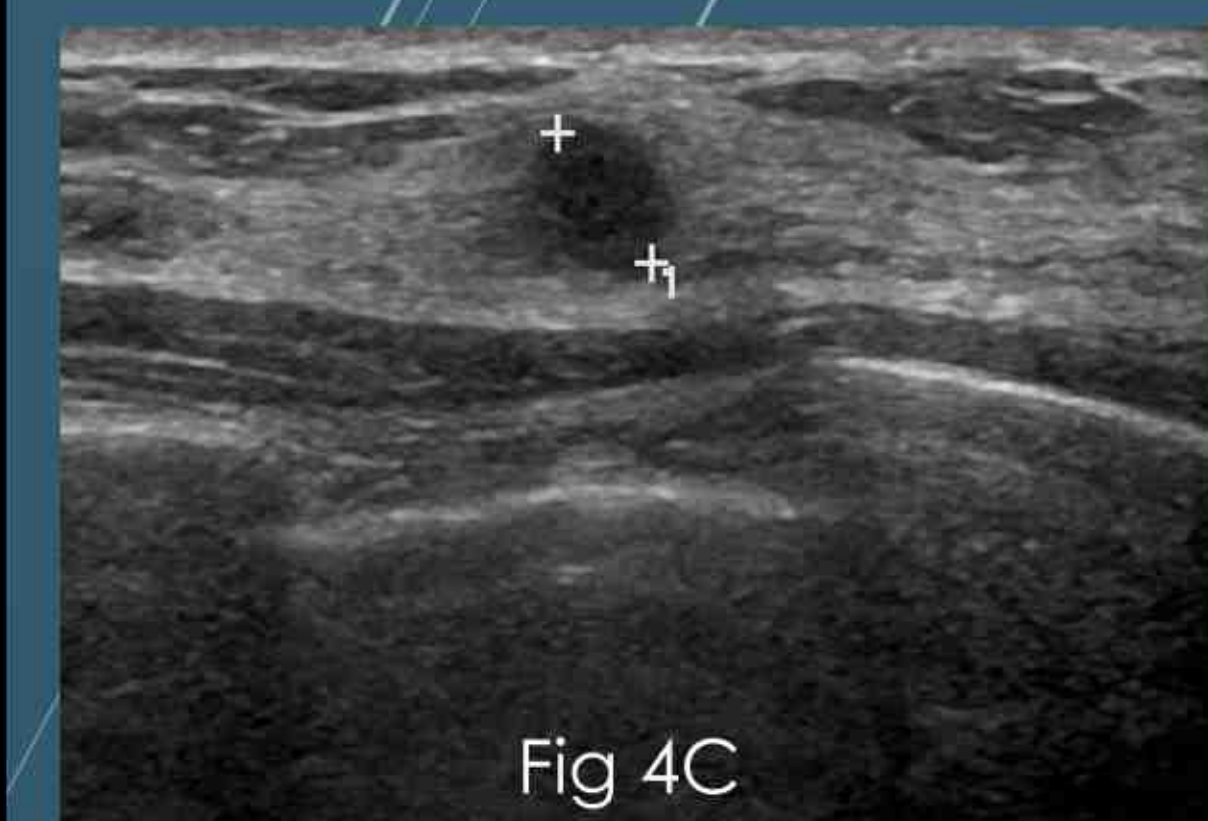
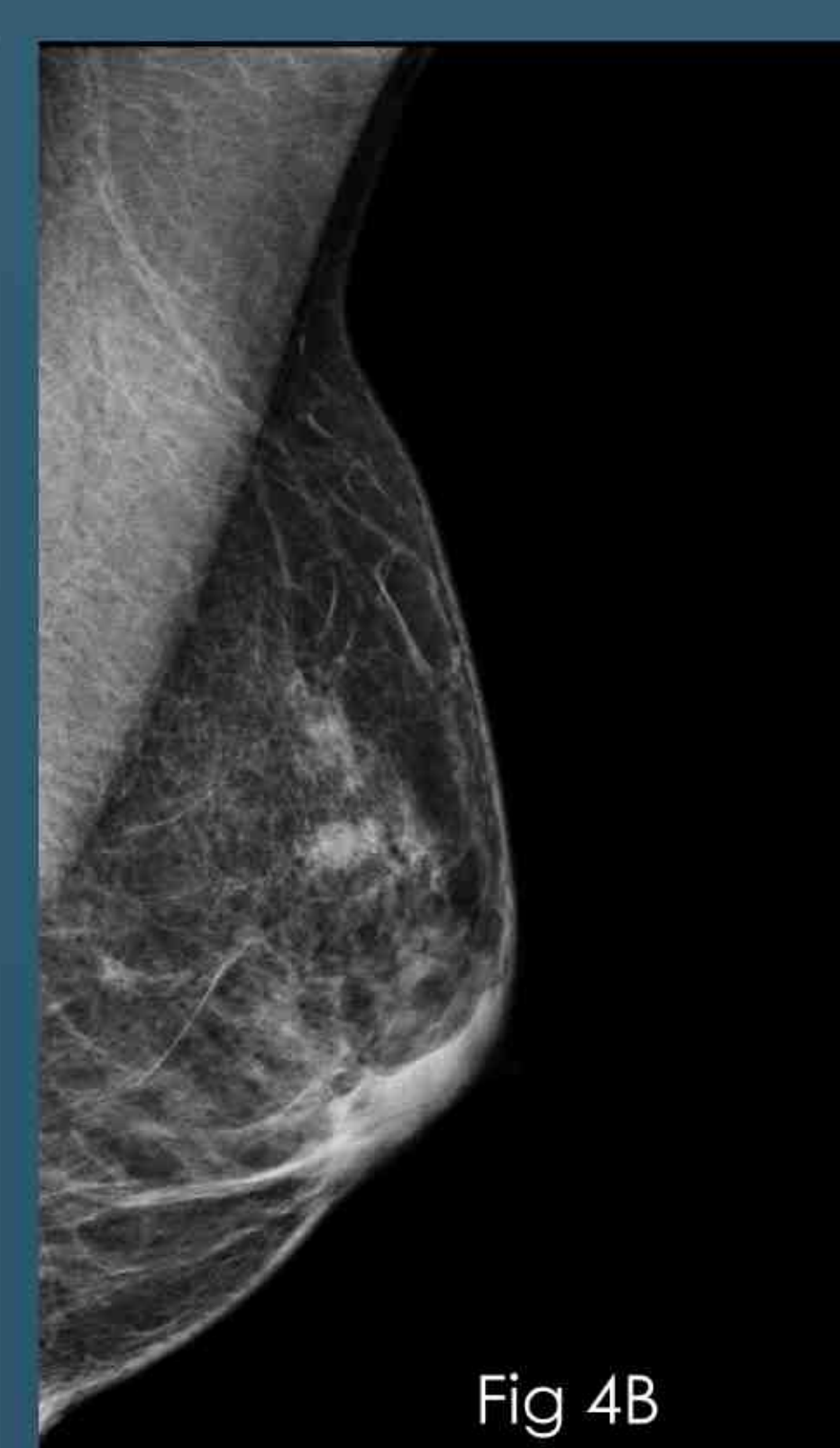
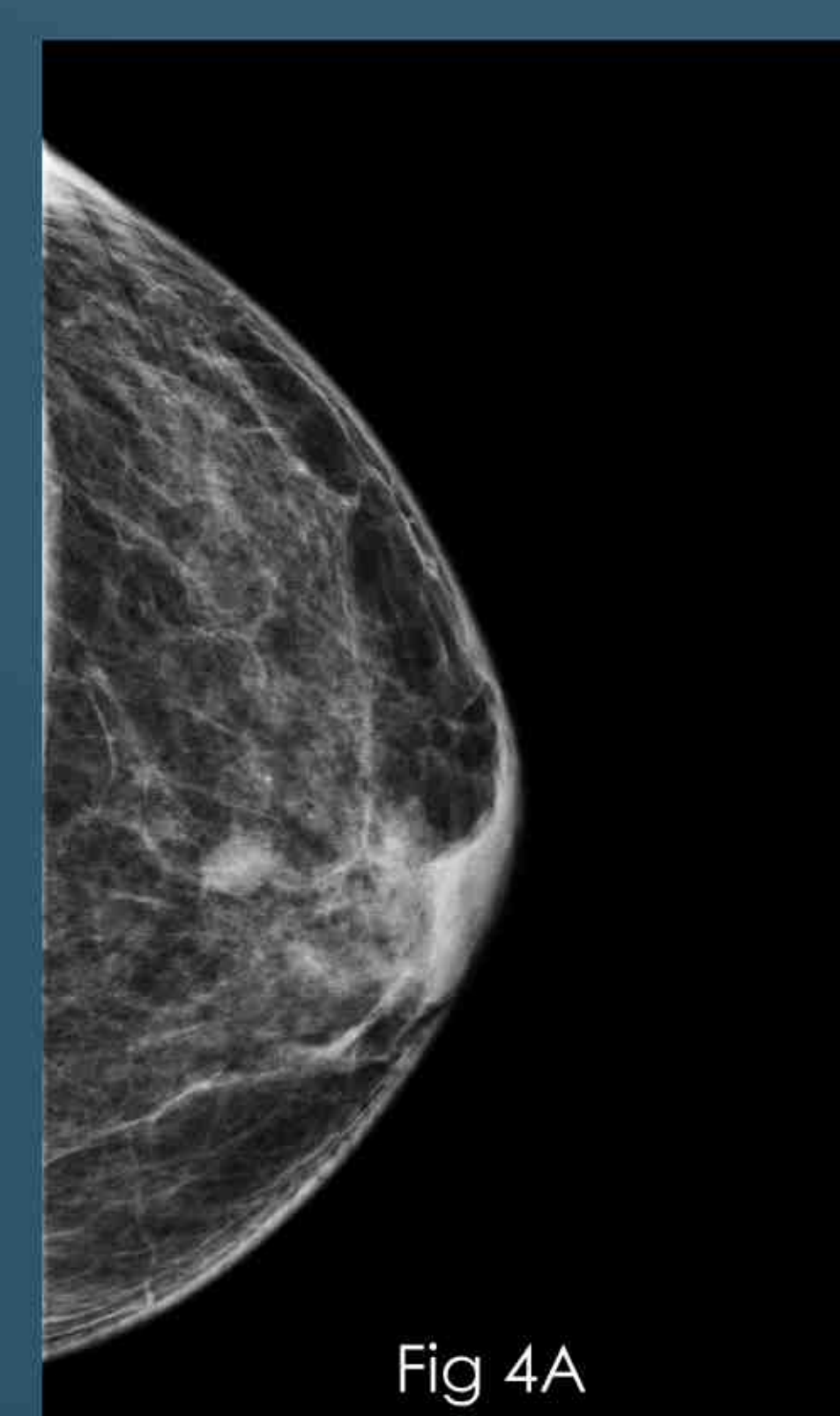


Fig 4 A-C: Screening mammogram and subsequent ultrasound of patient with history of SRT demonstrating an ill-defined mass. USS-guided core biopsy revealed grade II invasive ductal cancer.