

# Misinterpreted Interval Arbitration Cancers: An Audit and Pictorial Case Review

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## Background

Mammography arbitration is a method for reducing the number of benign/normal recalls to assessment, whilst detecting small cancers. It has evolved from single reader arbitration to panel consensus review<sup>1</sup>. Arbitration cancers have been interpreted by one of two readers and can be considered having borderline or subtle signs<sup>2</sup>

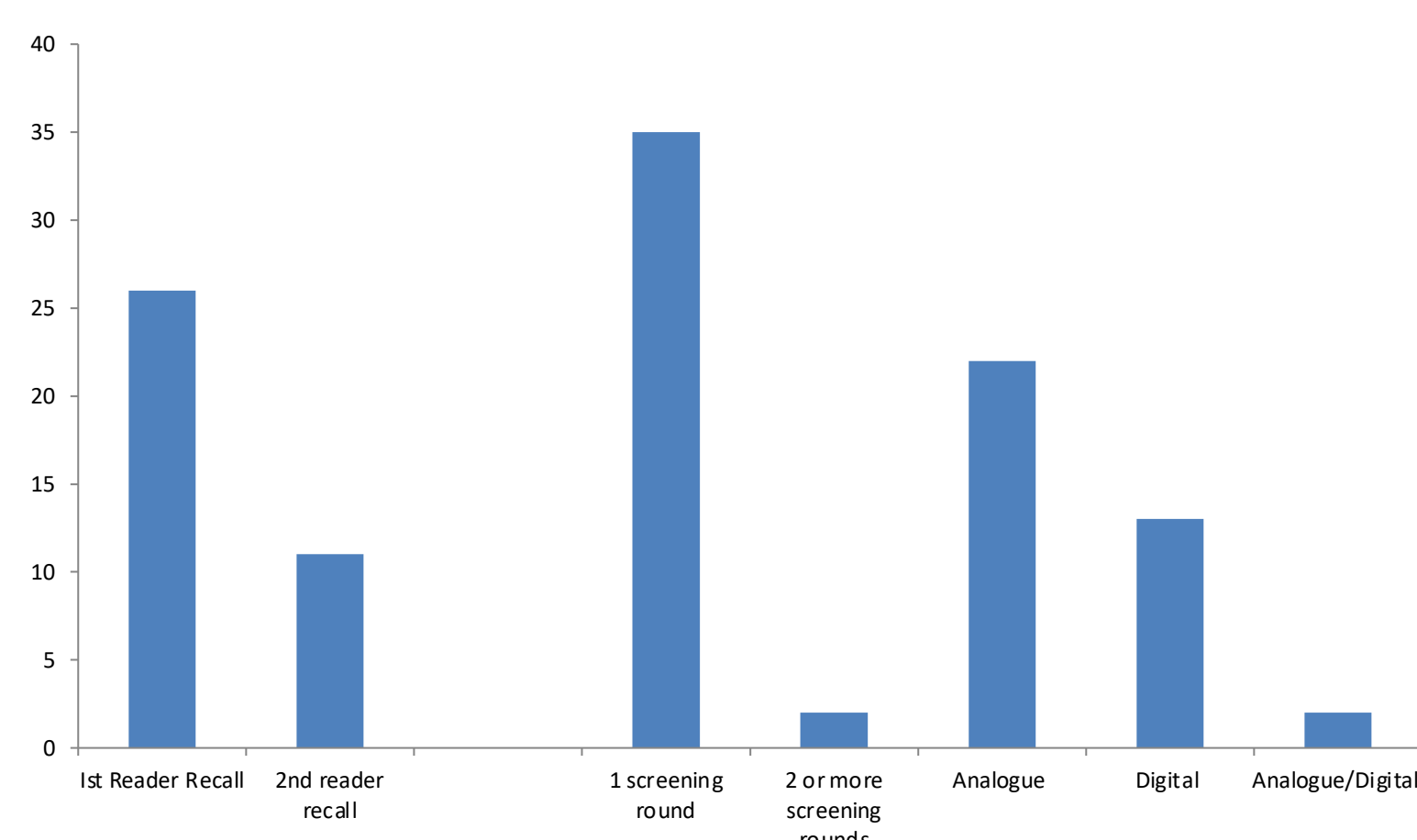
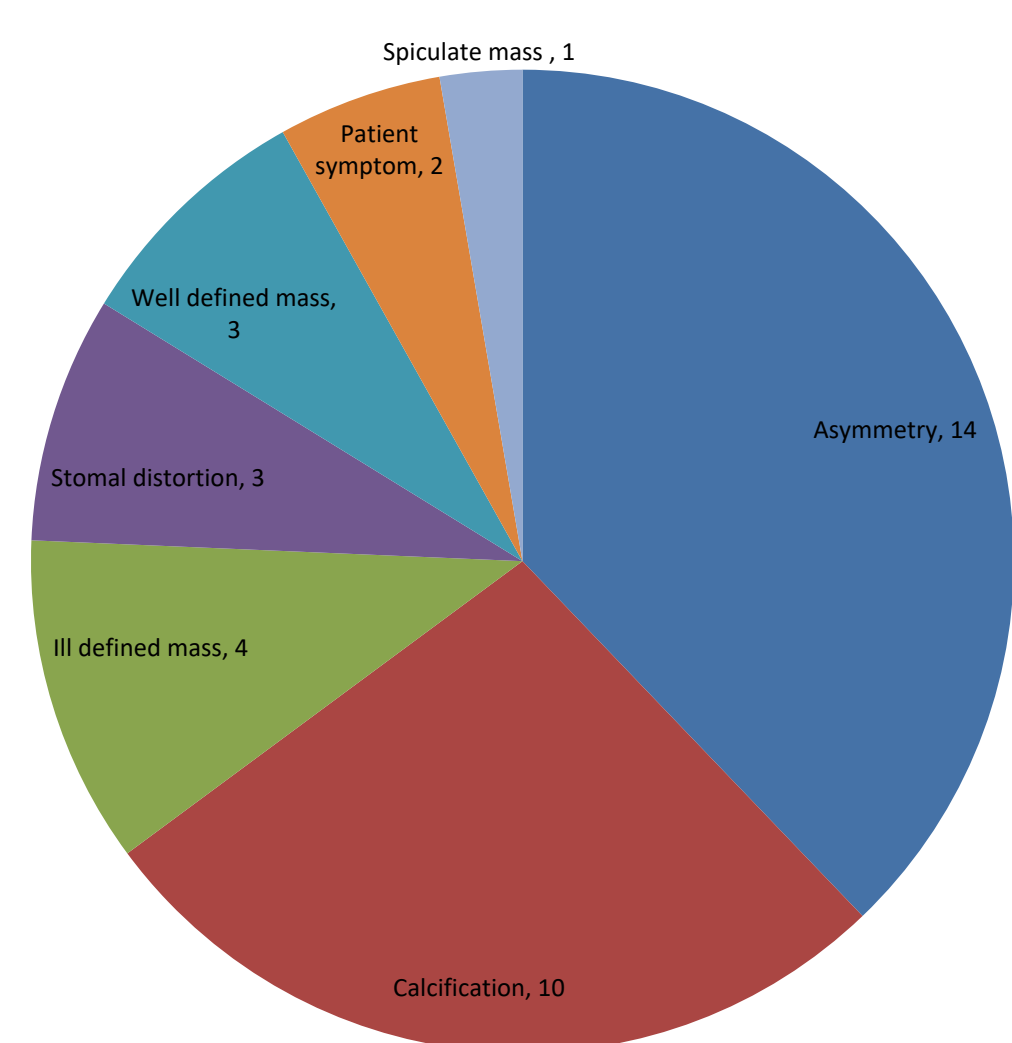
## Purpose and Method

A pictorial review to highlight some interesting cases of vague or misleading appearances resulting in a normal report.

A large breast screening unit's collated data of consensus interval cancers April 1991-March 2017, was used.

The mammographic appearances of these cases were recorded; descriptive results and topical cases are presented

## Results



- Interval arbitrated cancers became 0.6% (N=37/6071) of all arbitrations
- 35 were from one screening round; 2 from 2 screening rounds
- 22 were analogue cases and 13 were digital cases; 2 were both analogue first then digital.

## Discussion

Discordant interval cases represent less than 1% of all discordant/arbitrated screen reads. Of these 70% were recalled by the 1<sup>st</sup> reader and therefore deemed normal/benign by the 2<sup>nd</sup> reader and consensus opinion. Lesion type is dominated by calcification and asymmetric densities. Surprisingly only one case was a lobular carcinoma as these tend to be obtuse.

## Conclusions

The main findings are:

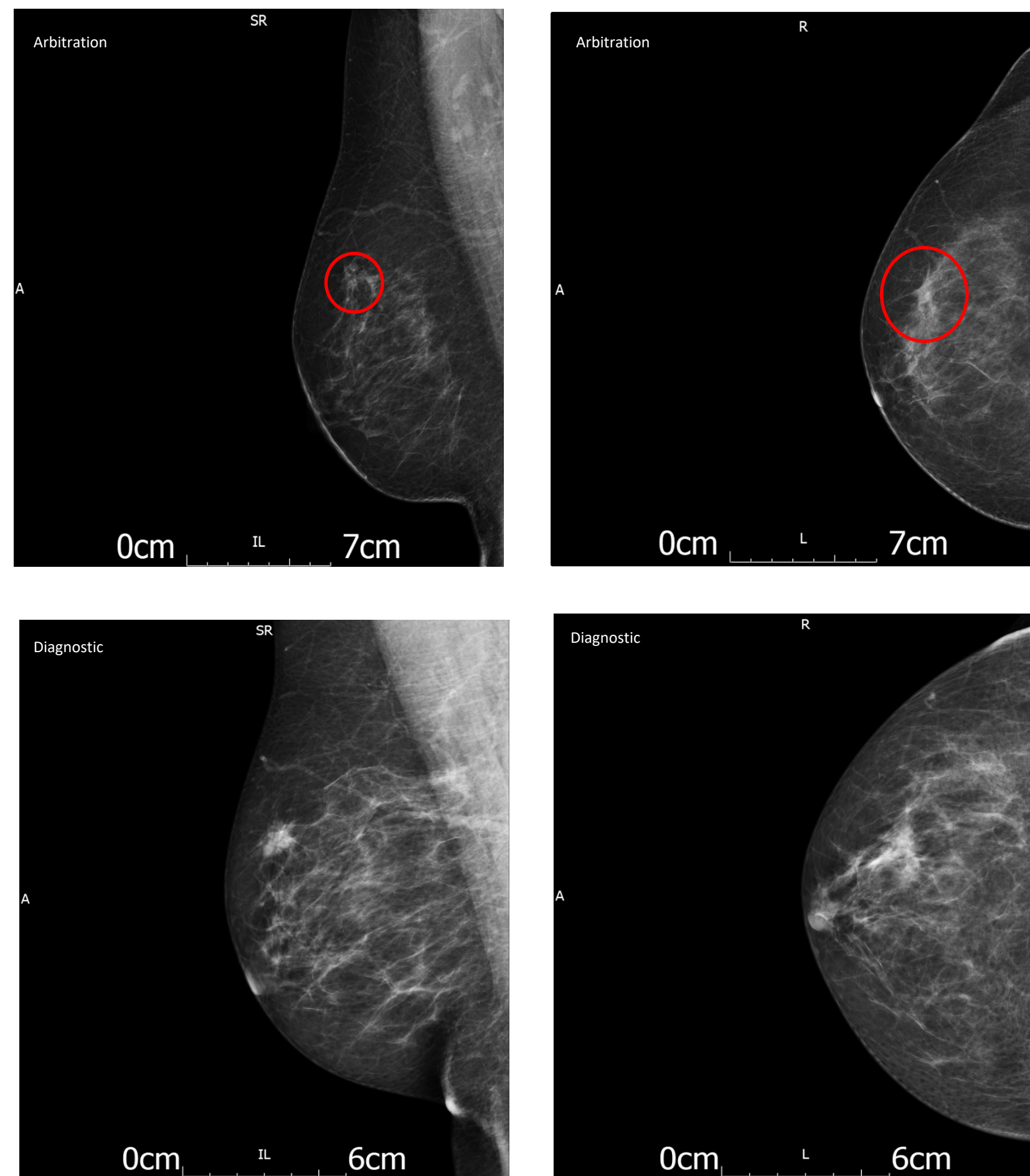
A lesion can be more prominent on one view.  
Previous images were persuasive that there was little change in mammographic appearance.  
Although this is a small subset it could provide useful cases for PerForms.

**An automatic film reader alert on NBSS would be very useful to highlight previously arbitrated cases to ensure no further concern**

## References

- Jenkins J, Murphy A E, Edmondson-Jones M, Sibbering D M, Turnbull A E. (2014) Film reading in the East Midlands Breast Screening Programme – Are we missing opportunities for earlier diagnosis? Clinical Radiology. 69: 385-390.
- Caumo F, Brunelli S, Tosi E, Teggi S, Bovo C, Bonavina G, Ciatto S. (2011) On the role of arbitration of discordant double readings of screening mammography: Experience from two Italian programmes. (La Radiologia Medica) 116:84-91.

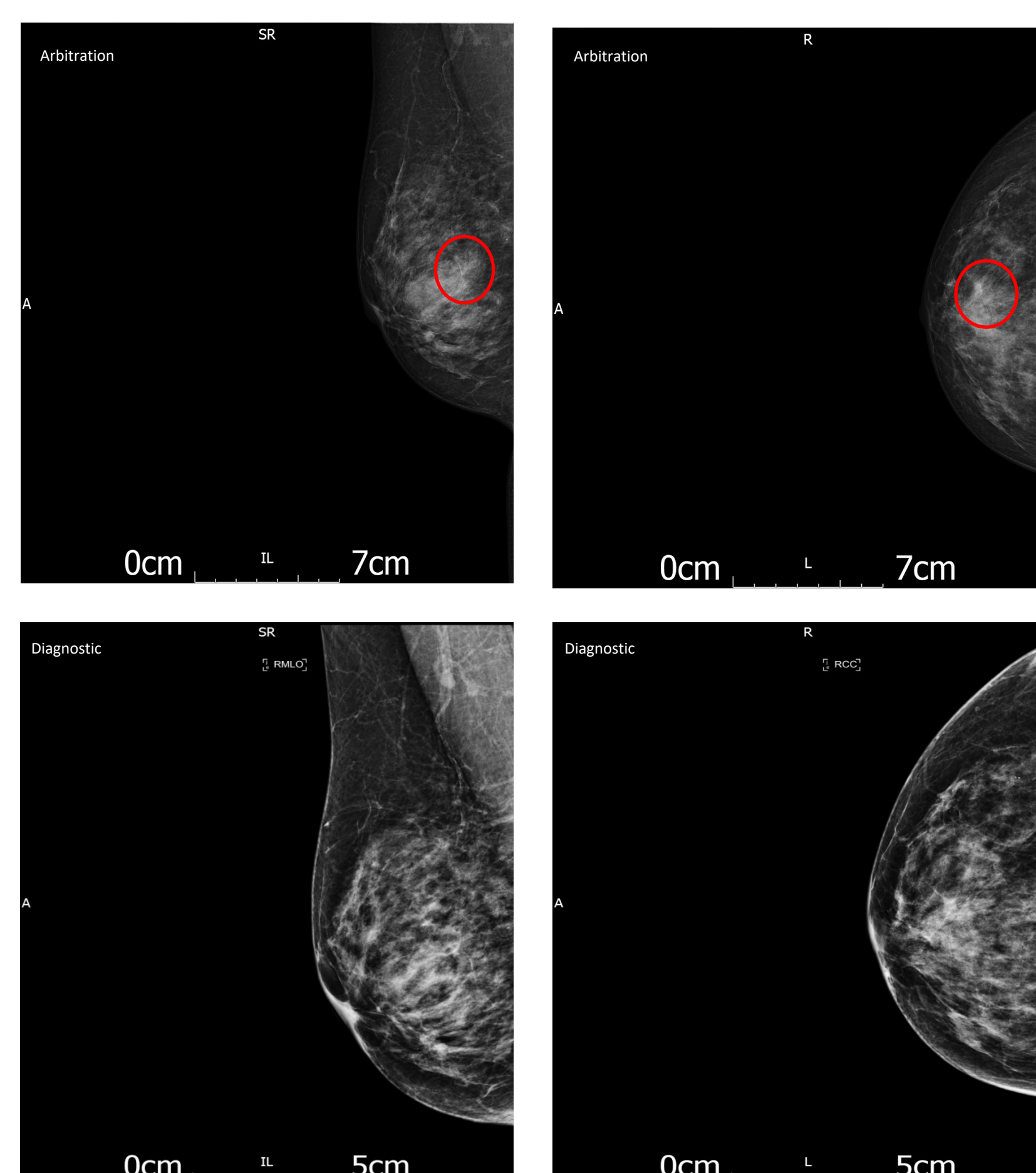
### Case 1 Architectural distortion



Arbitrated by 3<sup>rd</sup> reader and considered tissue only. If now at group consensus this probably would have been recalled.

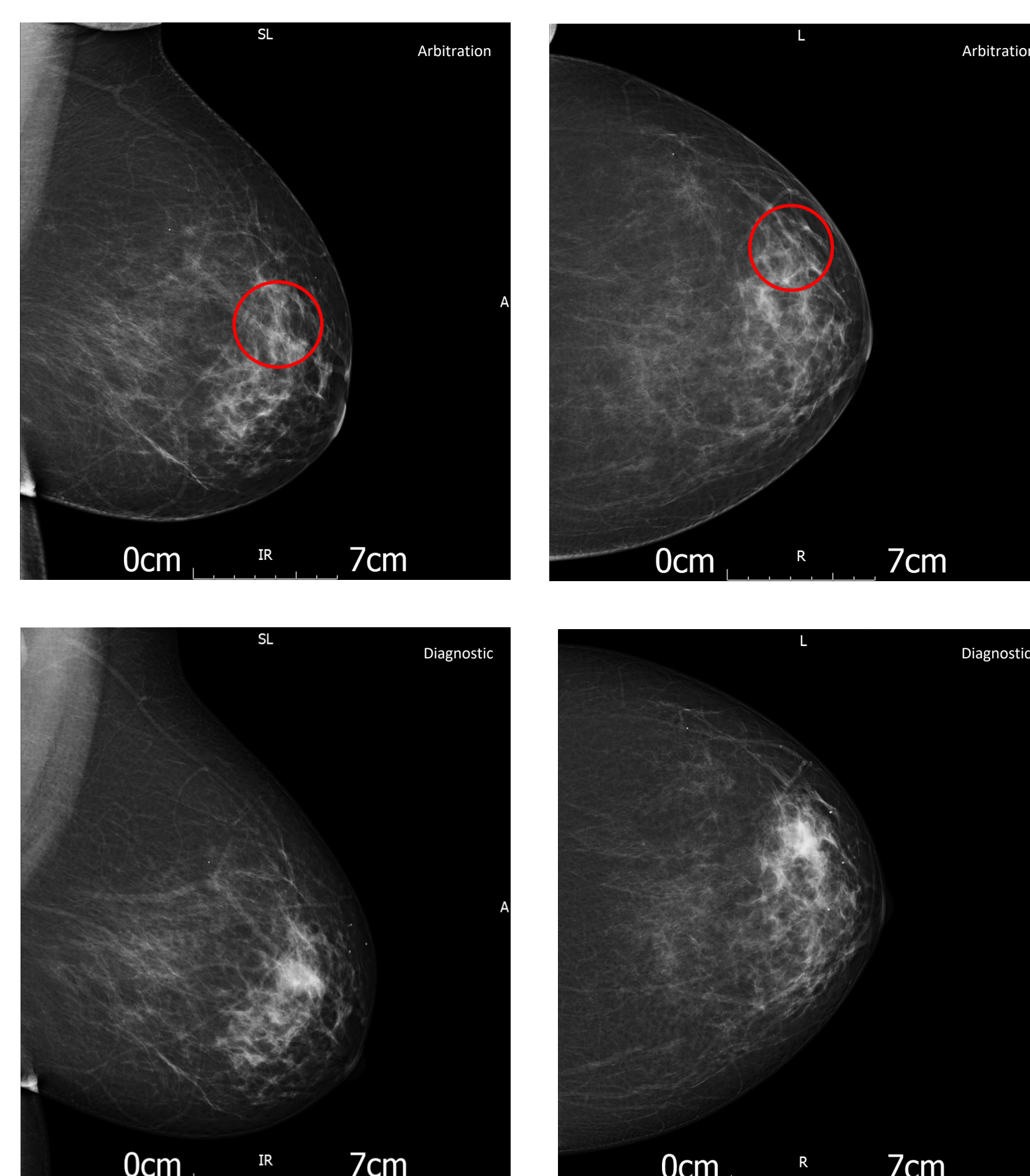
**Grade 1 ductal carcinoma**

### Case 3 Distortion seen on CC, not seen on MLO



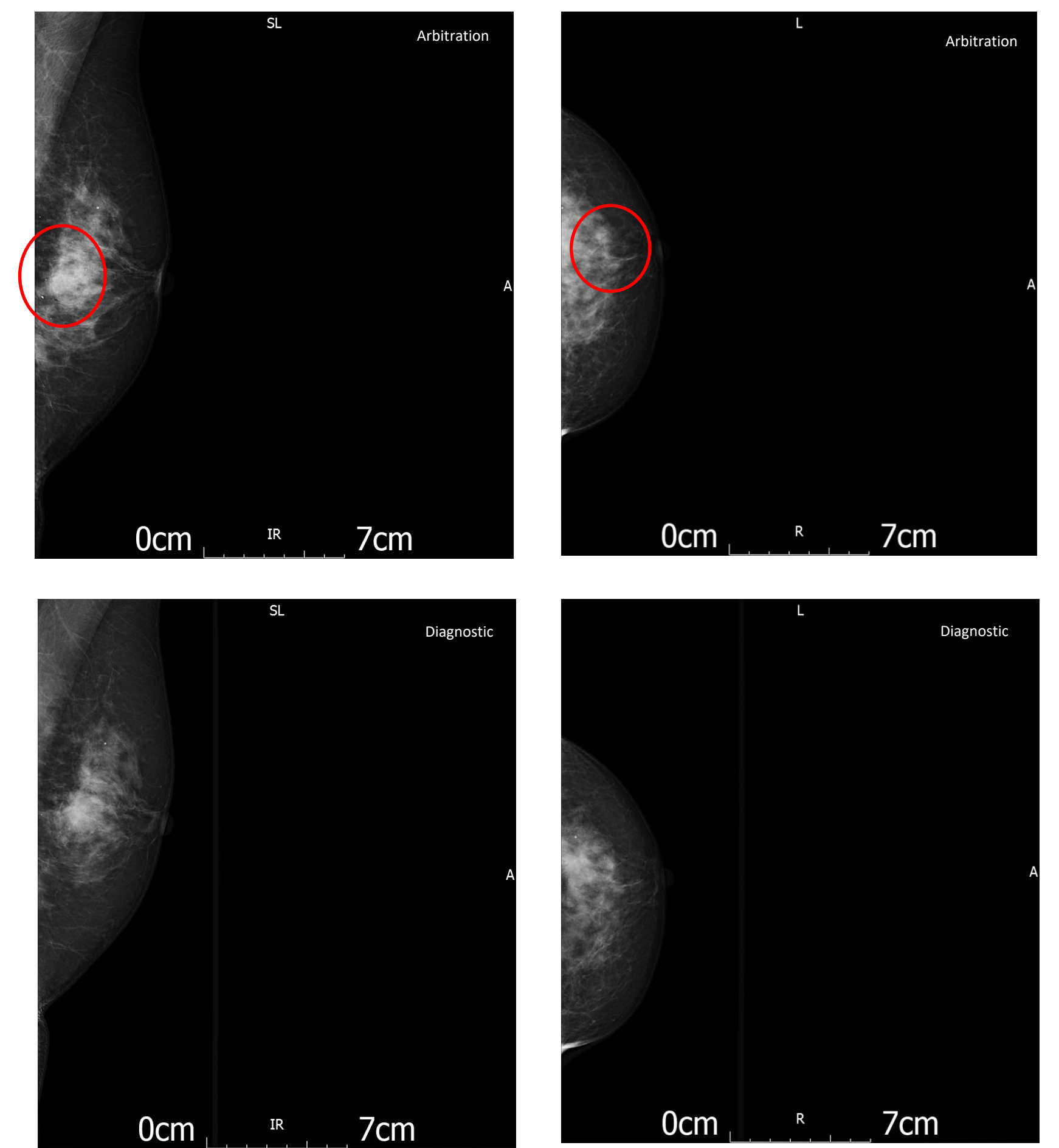
A distortion seen best on the CC view and not convincingly seen on the MLO view. Group consensus felt this was a positional change only. **Grade 1 ductal carcinoma**

### Case 5 blood vessel confusing the picture



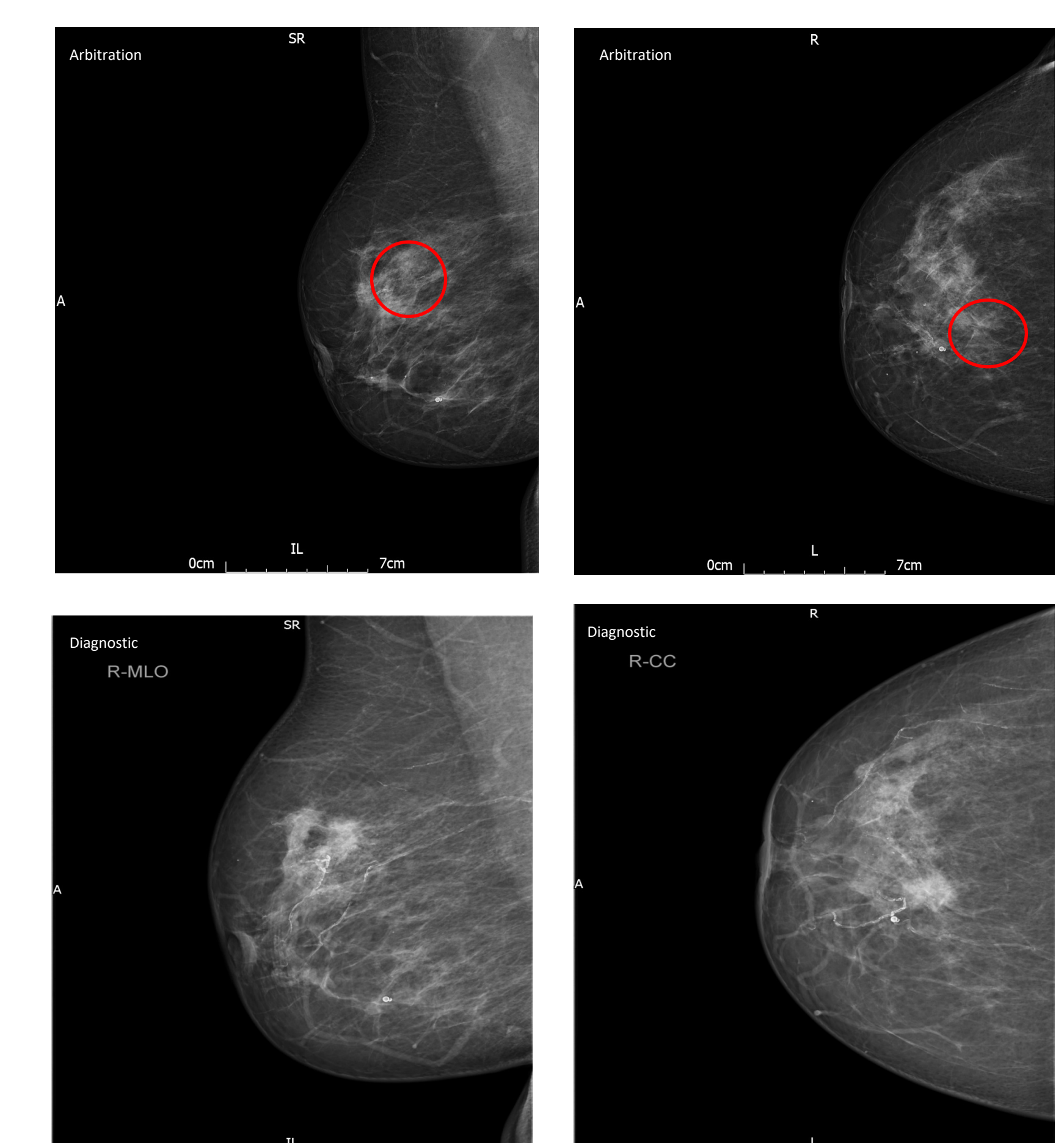
5 years and a screening in between. A large vessel was thought to over lie dense tissue by the 3<sup>rd</sup> reader **Grade 2 ductal carcinoma**

### Case 2 Dense tissue and positional issues



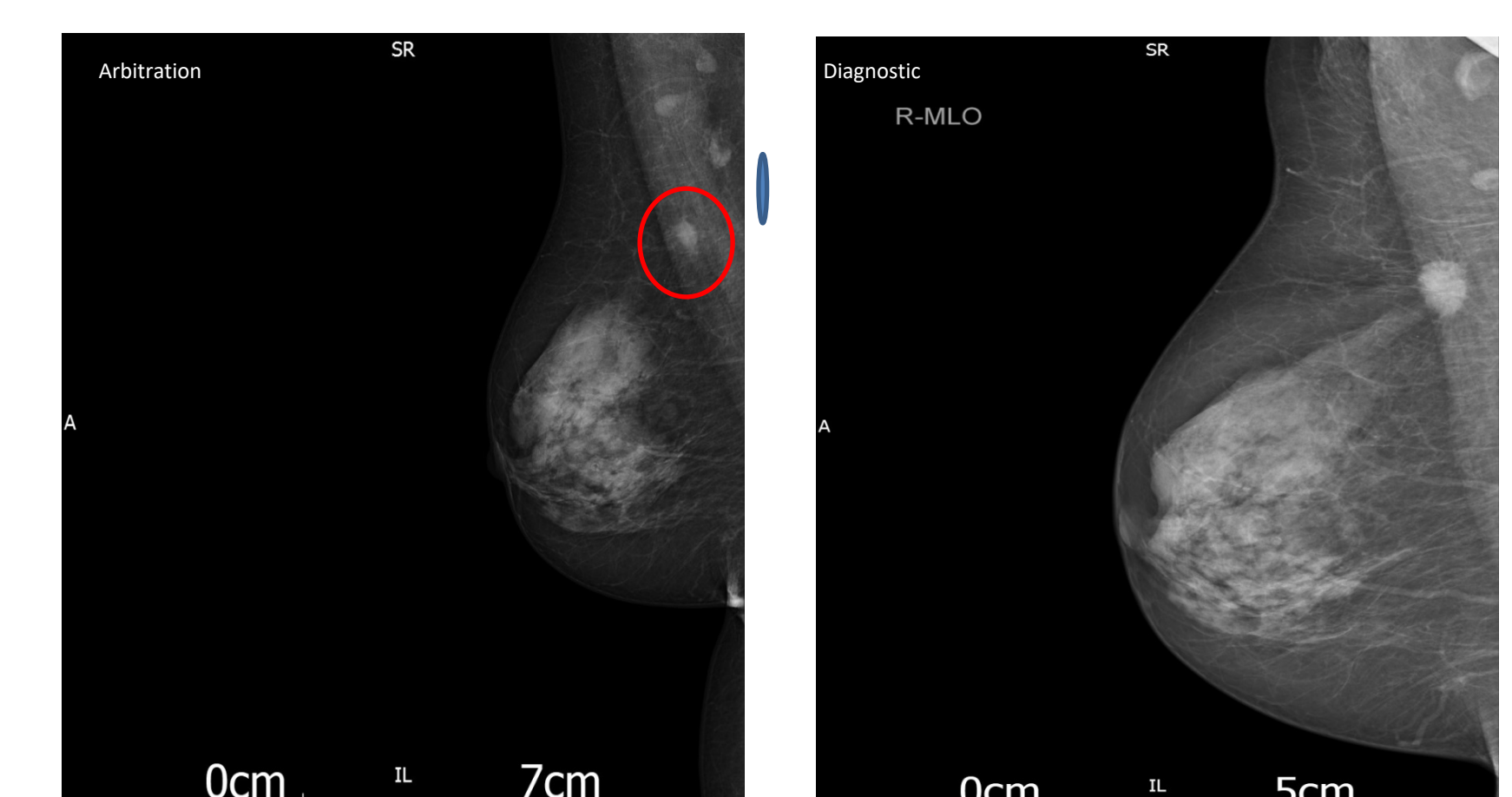
Within the dense breast tissue and difficult to position CC views. Considered positional and best possible at consensus. **Grade 3 ductal carcinoma**

### Case 4 Architectural distortion



Group consensus considered this a positional change **Grade 3 ductal carcinoma**

### Case 6 Lymph node



This was considered one of several normal nodes with an overlying density. Seen on the MLO view only. **Grade 1 ductal carcinoma**

## Further Reflections

These cancers are often obvious in retrospect. This suggests misinterpreting subtle changes including

- change from analogue to digital resolution,
- improving digital resolution over time and equipment update
- variation in position

**Increasing a reader's sensitivity with group consensus discussion and audit reviews may further reduce this small cohort of cancers.**

**Additionally being aware of a previously arbitrated feature may influence future recall decisions.**