Background and Standards

MRI guided breast biopsy is required to assess MRI abnormalities not demonstrated on conventional imaging i.e. mammography and second look ultrasound.

Current standards set by the NHS breast screening programme are:
- Designated screening MRI centres must perform a minimum of 12 MR-guided breast biopsies per year
- All MR-guided biopsies should be performed using vacuum assisted biopsy (VAB) in a centre that has recognised expertise in VAB and carries out at least 50 image guided VAB procedures per year.

Aims

1. Evaluate the number of referrals and whether internal or external
2. Review the technical aspects of the procedure - length of time taken to perform, failure rate, complication rate
3. Evaluate the rate of benign or malignant biopsies (B1-B5)
4. Review the appearance of the biopsy target i.e. mass or non-mass like enhancement in relation to histology

Methods

Retrospective audit of all MRI guided breast interventions at the Royal Marsden from 2012, when the service began, to 2015.

Data was obtained from the Electronic Patient Record and MRI records.

Technical: Timings, referrals, failures

Complications

MR imaging characteristics: NME / Mass.

Histology: B1-S

Results

Histology

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<tr>
<td>B5a</td>
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<tr>
<td>B4</td>
<td>1</td>
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<td>B3</td>
<td>4</td>
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<tr>
<td>B2</td>
<td>24</td>
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<tr>
<td>B1</td>
<td>4</td>
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Malignant = 32%
Benign = 60%

MR imaging characteristics

<table>
<thead>
<tr>
<th>Mass / nodule / focus</th>
<th>NME</th>
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<tbody>
<tr>
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<td>9</td>
</tr>
<tr>
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Referrals

57 patients were booked for an MRI guided intervention (31 Royal Marsden patients, 26 external referrals).

The appointment for biopsy was on average 14.5 days after the MDT decision. The average procedure duration was 88 minutes.

Complications

There were four cases of ‘significant bleeding’ of which none required surgical intervention.

Technical issues: 10 appointments resulted in no procedure:
6 - no enhancing abnormality present on procedure MRI
3 due not performed due to technical reasons:
1 Too posterior
1 Extensive background enhancement – this was rescheduled and performed successfully at another stage of menstrual cycle
1 Software failure
1 Abandoned as faint
3 Marker clip placement for surgical planning only

Conclusions

Our cancer detection rate (32%) is comparable to other UK centres and higher than studies in Europe (21%) and USA (8%), suggesting appropriate case choice. We achieve the standards set by the NHS BSF. Technical difficulties and complications were part of the learning curve, and practices have evolved to minimize these.

References: