Trainees’ Symposium:

The Pathologist in the multidisciplinary team (MDT); The Surgical, Oncological, Radiological and Pathological Perspective

Mr Horgan
Dr N Sharma
Prof D Dodwell
Prof A M Hanby
Dr Caroline Young
Dr Katie Allen
Todays menu

08 55- 10 10
MDT and MDTMs- why we have then.
Attributes of a good MTDM
Views of the core discipline members- what to expect from the pathologists
  i) Dr Sharma, the radiologists perspective ii) Mr Horgan, the surgeons perspective iii) The oncologists perspective.

Discussion and Q and A
Todays menu

Å 10 10- 10 40
Å Coffee
Å 10 40 – 10 50
Å Case discussions
Ruth Picardie

Noticed a lump in her breast in 1994

Went to her GP, who referred her to the breast clinic at Guy's.

Lab tests suggested the lump was probably benign, but the report recommended it should be excised in a biopsy, to make sure.

Markandoo, who saw Picardie, told her the lump was harmless and there was no point in surgical removal, which would leave a scar.
Two years later

- Picardie had given birth to twins
- The lump was the size of a golf ball.
- Again a GP referred her to the breast clinic.
- This time an aggressive cancer was diagnosed.

- http://www.telegraph.co.uk/culture/3649668/The-Friday-column-breast-cancer.html
Learning points

• Does it clinically seem like cancer,
• Does it look like cancer - radiology
• Does it look like cancer - pathology

• If the triple assessment is followed this mishaps should be rare.
Core biopsies - ‘B’ grading

B1 - unsatisfactory/normal breast lesion
B2 - benign lesion
B3 - atypical probably benign
B4 - atypical probably malignant
B5 - Malignant (B5a in situ, b invasive).

Triangulated within the multidisciplinary team meeting.
No man is an island, Entire of itself, Every man is a piece of the continent, A part of the main. If a clod be washed away by the sea, Europe is the less. As well as if a promontory were. As well as if a manor of thy friend's Or of thine own were: Any man's death diminishes me, Because I am involved in mankind, And therefore never send to know for whom the bell tolls; It tolls for thee.

John Doone 1624

If pathologists be removed from attendance, the MDTM is the less.-

(anonymous lesser poet 2016)
The Characteristics of an Effective Multidisciplinary Team (MDT)

National Cancer Action Team

Â treatment and care being considered by professionals with specialist knowledge and skills in the relevant aspects of that cancer type;

Â patients being offered the opportunity to be entered into high quality and relevant clinical trials;

Â patients being assessed and offered the level of information and support they need to cope with their condition;
The Characteristics of an Effective Multidisciplinary Team (MDT)

National Cancer Action Team

- Improved equality of outcomes as a result of better understanding and awareness of patients’ characteristics and through reflective practice;
- Adherence to national and local clinical guidelines;
- Promotion of good working relationships between staff, thereby enhancing their job satisfaction and quality of life;
The Characteristics of an Effective Multidisciplinary Team (MDT)

National Cancer Action Team

• opportunities for education/professional development of team members inc devising and agreeing new protocols and ways of working);

• optimisation of resources – effective MDT working should result in more efficient use of time which should contribute to more efficient use of NHS resources more generally
Categorisation of MDT Characteristics

Å 1. The Team
Å 1.1. Membership
Å 1.2. Attendance
Å 1.3. Leadership
Å 1.4. Team working & culture
Å 1.5. Personal development & training
Categorisation of MDT Characteristics

Å 2. Infrastructure for Meetings
Å 2.1. Physical environment of meeting venue
Å 2.2. Technology & equipment (availability & use)
Å 3. Meeting Organisation & Logistics
Å 3.1. Scheduling of MDT meetings
Å 3.2. Preparation prior to MDT meetings
Å 3.3. Organisation/administration during MDT meetings
Å 3.4. Post MDT meeting /co-ordination of service
Categorisation of MDT Characteristics

4. Patient-Centred Clinical Decision-Making
   4.1. Who to discuss?
   4.2. Patient-centred care
   4.3. Clinical decision-making process
Categorisation of MDT Characteristics

5. Team Governance
   5.1. Organisational Support
   5.2. Data collection, analysis and audit of outcomes
   5.3. Clinical governance
A locally agreed minimum dataset of information is presented on each patient including diagnostic information (pathology and radiology), clinical information (including co-morbidities, psychosocial and specialist palliative care needs) and patient history, views and preferences – the focus is on what the team need to hear to make appropriate recommendations on the patient in question. It may not, for example, be necessary to show/discuss the pathological or radiological findings in all cases.
3.3.3. There is access to all relevant information at the meeting including patient notes, test results/images/samples (past and present) and appointment dates (or a proforma /summary record with the necessary information) along with access to PAS, radiology & pathology systems etc – relevant past material should be reviewed prior to the meeting if it is not accessible during the meeting.
To track patients through the system to ensure that any tests, appointments, treatments are carried out in a timely manner e.g. within cancer waits standards where applicable.
4.3.9. MDT recommendations are only as good as the information they are based on – if there are concerns that key data is missing this should be documented.

This means attention to the details of the pathology report
Å 5.3.9. Significant discrepancies in pathology, radiology or clinical findings between local and specialist MDTs should be recorded and be subject to audit.
Improving the effectiveness of multidisciplinary team meetings for patients with chronic diseases:
a prospective observational study
Rosalind Raine, et al

- Implementation varied by disease category, and was highest in gynaecological cancer (84%) and lowest in mental health (70%).
- High-implementing teams have clear goals, and members shared the view that the main purpose of the MDT meeting was to make treatment recommendations for patients.
- Lower-implementing teams, members identified a range of diverse objectives and some stated that meetings lacked clarity of purpose.
The perspectives of the team members/leaders
The radiologists perspective
Dr Nisha Sharma

- Need to work together to obtain the best outcome for the patient
- Radiologists need to provide enough information to ensure that a relevantly detailed pathology report is obtained e.g. If biopsy for calcifications or a mass
- Highlight our level of concern R1-R5
- If we biopsy two areas and label them A and B - pathology report them as A and B and not lesion 1 and 2 as can be confusing
- Tumour size is difficult. If several lesions on imaging we would give an overall extent but in pathology this seldom occurs which means that there is discordance regarding extent
The Surgeons perspective
Mr Kieran Horgan

The breast surgeon plays a pivotal role to ensure a multidisciplinary team meeting produces any outcomes. A number of colleagues require careful man-management in order to achieve those goals.
The Surgeons perspective
Mr Kieran Horgan

The radiologist must be persuaded not to
describe at length various benign appearances
which are only of interest to them and entirely
superfluous if the biopsy is benign.
The Surgeons perspective
Mr Kieran Horgan

The pathologist must be encouraged to reduce their report to the 10% of relevant interest to the meeting, not to embark on endless immunohistochemistry and to retain fascinating discussions on the interface between hyperplasia and in situ neoplasia to coffee breaks with their colleagues.
The Surgeons perspective
Mr Kieran Horgan

The oncologist must be encouraged to don a visage without agonised perplexion and to reflect that mostly their chemo-therapeutic decisions are best guess and the action will be binary not titrated; either give the treatment or not.
The Surgeon's perspective
Mr Kieran Horgan

The MDT meeting will not cope well with detailed breast care nurse input as to the details of the patient’s psychosocial background surmised from a clinic visit, valuable though that information is, and a brief “she won’t agree to that treatment“ will suffice.
The Surgeons perspective
Mr Kieran Horgan

It can be seen therefore that the successful MDT requires all the knowledge, perception, people management skills, modesty and kind collegiate approach typified in the character of the UK breast surgeon.
The Oncologists perspective
Professor David Dodwell

There are two ways of treating breast cancer:

My way or the wrong way

And woe betide any MDT decision which challenges this!!
The pathologists perspective- the path report

Å Reports are all important.
Å Relevant data in a logical order.
Å Most important bits first.
Å May contain interesting ‘bonus’ material- but not necessary to regale the a busy MDTM with it all
Pathology report 1

Breast tissue showing a number of features of fibrocystic change including apocrine metaplasia, adenosis, sclerosing adenosis, usual type ductal hyperplasia and part of a radial scar. Some collagenous spherulosis is also seen, an interesting condition that may resemble some invasive cancer (3 references supplied). There is also a grade 3 infiltrating ductal carcinoma with associated DCIS.
Pathology report 1

Å
Å
Å
å DCIS is present
Å
Å
Clinical information received

- Mrs Clac
- Age 57

Incident screen shows widespread calcification with a cluster of more concerning calcification - VAB 12 g VAB biopsy undertaken.
Pathology report 3

High grade solid pattern DCIS with comedonecrosis and microcalcifications is present.
High grade solid pattern DCIS with associated DCIS is present in approximately 10% of the sample and contains coarse calcifications. Extensive microcysts with associated microcalcifications are also present.
I've narrowed the diagnosis down to 16 possibilities.
Cases MDT
Case discussion Pathology

Case 1
A 62 year old presented with lump left breast
A P4/P5 lump
A Mammogram and targeted US left breast and axilla
Mammogram

Normal right mammogram  51mm mass UOQ left breast R5
US breast and axilla

UOQ right breast – 51mm mass
U5

Left axilla R4 lymph node 5mm
cortical thickening
• US guided core biopsy – ductal grade 3, triple negative (ER/PR/HER 2 negative)
• No DCIS or LVI
• Axillary FNA benign – lymphocytes present

• MDT – NACT aiming for conservation rather than mastectomy
• Microbubbles left axilla
SLNB – microbubbles and surgery

CEUS identified SLN which was biopsied 14G x 2 cores and clip inserted

SLNB and LN X-rayed with clip present
Baseline - NACT

Dynamic, subtracted image – clip in SLN

T1W image showing clip in LN
Baseline

55mm mass abutting chest wall  T1 W scan
Post SLNB

Post 2 cycles. SLNB cavity

T2W – fluid in surgical cavity
Post 2EC

Post 2 EC – concentric reduction in tumour 34mm

T1 W scan
MDT

- Continue EC chemotherapy
- Insert marker clip
NACT post 4EC
NACT post 6EC – end of treatment scan

Residual mass on T1W

Blush of contrast
X-Ray wire localisation as not visible on US
MDT

- Pathology – clip seen. No residual invasive disease or DCIS
- Radiotherapy
- 10 year follow up as grade 3
Case 1 post NACT
What should a post Nact report say.

• What is relevant to take the treatment forward.
• What is left
• Is there evidence of regression in the tumour beds and nodes
• Is there a need to repeat the marker status

http://www3.mdanderson.org/app/medcalc/index.cfm?pagename=jsconvert3
Standardization of pathologic evaluation and reporting of postneoadjuvant specimens in clinical trials of breast cancer: recommendations from an international working group. *Mod Pathol* **28**, 1185-1201

Should we re-test after treatment


Case 2

58 year old

Lump right breast – P5 with skin tethering
Case 2

RT MLO – 40mm mass and 8mm satellite

RT CC
Case 2

Known cancer + satellites – 32mm mass + 8mm + 10mm

Axilla – 3 abnormal nodes
Case 2

Rt MLO mass and clips in 2 satellites

Rt CC mass and clips in satellites
Case 2

- US core biopsy – metaplastic, grade 3
- Triple negative
- 2 satellites with clips C5
- Axillary FNA C5
Metaplastic carcinoma - matrix producing type
### Right Breast Mammectomy, Right Axillary Node Clearance and Right Apical Tissue

<table>
<thead>
<tr>
<th>Description</th>
<th>Details</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Invasive Carcinoma</strong></td>
<td></td>
</tr>
<tr>
<td>Invasive tumour type</td>
<td>Metaplastic carcinoma</td>
</tr>
<tr>
<td>Invasive tumour grade</td>
<td>3 (T3, P3, M2)</td>
</tr>
<tr>
<td>Invasive tumour size (contiguous)</td>
<td>55 mm</td>
</tr>
<tr>
<td>Lymphovascular invasion</td>
<td>Not seen</td>
</tr>
<tr>
<td>Margins</td>
<td>&gt;10 mm from all margins</td>
</tr>
<tr>
<td><strong>In-situ Disease</strong></td>
<td></td>
</tr>
<tr>
<td>Ductal carcinoma in-situ</td>
<td>Yes</td>
</tr>
<tr>
<td>Grade (NHSBSP)</td>
<td>High</td>
</tr>
<tr>
<td>Pattern</td>
<td>Cribriform, solid</td>
</tr>
<tr>
<td>DCIS Necrosis</td>
<td>Yes</td>
</tr>
<tr>
<td>DCIS Calcification</td>
<td>No</td>
</tr>
<tr>
<td>DCIS relationship to invasive</td>
<td>Admixed and adjacent; plus at 9 o'clock measuring 18 mm in maximum dimension.</td>
</tr>
<tr>
<td>Margins</td>
<td>As above</td>
</tr>
<tr>
<td>Paget’s disease</td>
<td>Not seen</td>
</tr>
<tr>
<td>Lobular neoplasia</td>
<td>Yes (ALH and LCIS in background breast)</td>
</tr>
<tr>
<td>Whole tumour Size</td>
<td>55 mm</td>
</tr>
<tr>
<td><strong>Lymph Nodes</strong></td>
<td></td>
</tr>
<tr>
<td>Axillary node clearance</td>
<td>0/16 (including one with ITC’s)</td>
</tr>
<tr>
<td>Total node count</td>
<td>0/20 (none of the lymph nodes show any perinodal scarring/fat necrosis, suggestive of previous aspiration)</td>
</tr>
<tr>
<td>The FNA axilla (LN16-571) has been reviewed and evidence of metastatic carcinoma to the node is confirmed.</td>
<td></td>
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Amended report following further sampling

- LYMPH NODES
  - Axillary nodes (A&B) 4/19 (one of the 4 being ITCs)
  - Apical nodes (C) 0/4
  - Extracapsular spread One focus
  - Size of largest metastasis 10mm
  - Total node count 4/23

- Nottingham Prognostic Index 7.1 (PPG)
- Stage (TNM 7th Edition) pT3, pN2, pMx

- Diagnosis
  - Right mastectomy - Invasive metaplastic carcinoma.
  - Total right axillary lymph nodes 4/36
Case 2

A Lesson learnt from imaging

Low lying axillary lymph nodes – sit within the breast. Imaging will mention this in the report and clip the node to ensure excision if for breast conservation and ANC
Case 3

• 58 year breast screening referral
• Asymptomatic
Mammogram

Left mammogram 2013

Left mammogram 2016 – new segmental calcifications
Magnification view – malignant looking calcs

Left CC view
2 areas biopsied
Area A – HGDCIS
Area B – HGDCIS
Patient declined marker clips
**Surgery**

- **LEFT MASTECTOMY AND LEFT SENTINEL LYMPH NODE BIOPSY**
- **INVASIVE CARCINOMA**
  - Invasive tumour type: None found currently (though micrometastasis in lymph node)
- **IN-SITU DISEASE**
  - Ductal carcinoma in-situ: Present
  - Grade (NHSBSP): High
  - Pattern: Solid
  - DCIS Necrosis: Present
  - DCIS Calcification: Present
  - DCIS relationship to invasive: N/A
  - Margins: 1.5mm posterior, 5mm superior, rest > 10mm
  - Paget’s disease: Not seen
  - Cavity biopsies: N/A
  - Whole tumour Size: At least 60mm
- **LYMPH NODES**
  - Sentinel nodes: 1/2
  - Apical node: N/A
  - Extracapsular spread: Not seen
  - Size of largest metastasis: 0.5mm
  - Total node count: 1/2 (micrometastasis)
  - Molecular markers: N/A
  - POST NAC PARAMETERS: N/A
DIAGNOSIS:

A: Left breast mastectomy. Extensive DCIS, awaiting further levels

B and C: Left axilla sentinel lymph node biopsy 1/2 (micrometastasis)

Deeper levels have been performed on all of the original sections which sample
the DCIS and a further 8 blocks have also been taken from the specimen. No
definite areas of invasive carcinoma have been found.

The micrometastasis seen in the sentinel lymph node was present only on level 1,
cutting out on deeper levels which precluded molecular marker testing. All of
the lymph node blocks have therefore been re-embedded after turning 1800 and
have been examined at three levels. No further carcinoma is seen in any of
these sections and therefore molecular marker testing cannot be performed.

In summary, despite extensive block sampling and examination at multiple levels,
no foci of invasive carcinoma have been found in the breast though a
micrometastasis is seen within one level of the sentinel lymph node biopsy. As
a final measure, immunohistochemistry for myoepithelial markers will be
performed on the larger DCIS ducts to ensure that these do have an external
myoepithelial cell layer. A supplementary report will be issued with these
results.
molecular marker testing will be attempted on the sentinel lymph node immunosspares on the off chance that these contain tumour (ie. if they were cut before the level 2 H&E which no longer contains tumour). In addition, molecular marker testing will also be performed on an area of DCIS as this may help guide future management decisions.

There are a few clusters of tumour cells in the capsule of the node, together measuring 0.5mm, with the largest single cluster measuring just over 0.2mm.

The few tumour cells that are present in the sentinel lymph node score 3+ with Her2 immunohistochemistry and they should therefore be regarded as positive for Her2 over-expression. The tumour cell nuclei appear to score 0/8 for ER. The DCIS has also been tested for molecular markers and it scores 3+ with Her2 immunohistochemistry. ER on the DCIS is still awaited.
Issues

Â No invasive component found but 1 of 2 nodes micromet
Â Molecular markers HER 2+ on node and DCIS HER 2 positive
A case from St Elsewhere’s

Â 28 year old woman
Â Lump left breast and axilla. No FH
Â Breast biopsy ductal carcinoma
Â SLNB – Hodgkins disease

‘Please take over care – complex case’!

Â What to do?