North of England Cancer Network Audit

Prostatic Core Biopsy Reporting - Specimen Handling

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To assess compliance with standards outlined in;

(a) The Prostate Cancer Risk Management Programme (PCRMP), Guide 1, December 2006

(b) RCPPath dataset for histopathology reports for prostatic carcinoma (2nd edition), October 2009
Lead pathologists from seven centres across the region requested to complete a questionnaire on the handling, processing and reporting of prostatic core biopsies at their centre.
Results

Returns received from all seven;
- Durham & Darlington
- Gateshead
- North Tees
- Northumbria
- RVI
- South Tees
- Sunderland
Question 1:
How are prostatic cores submitted to pathology in your trust?

- In a single pot with no distinction between L & R
- In two pots labelled L & R (but individual cores not identified as to site)
- In two pots labelled L & R with individual cores identified as to site of origin
- Other
Question 1 response:
How are prostatic cores submitted to pathology in your trust?

- In two pots labelled L & R (but individual cores not identified as to site)
  - 5.5
- In two pots labelled L & R with individual cores identified as to site of origin
  - 1.5
PCRMP

It is desirable for each core to be processed so as to maintain the identity of its source in the prostate gland.

As a minimum requirement, cores should be identifiable according to the side (right/left) of the gland that they originated from. This information is of paramount importance as it may enable a unilateral nerve sparing prostatectomy to be performed when a cancer involves only one side of the gland.
RCPath dataset
Cores may be sent to the laboratory as individual specimens or several cores may be placed in one pot. At the very minimum, cores should be separated into right and left sides as the surgical approach may vary depending on side-specific tumour burden.

Standard met at all centres (100%)
Note;
One lab (split site) has different policy depending on hospital of origin

One lab receives separately identified cores in occasional cases with saturation biopsies
Question 2a:
How many total cores per case do you usually receive in total?

- <10
- 10
- 12
- >12
Question 2a response:
How many total cores per case do you usually receive in total?

- <10 = 1 (8 cores)
- 10 = 4
- 12 = 2
The scheme used at first biopsy should be a 10 to 12 core pattern that samples the mid-lobe, peripheral zone and the lateral peripheral zone of the prostate.

Standard met at 6 of 7 centres (86%)
Note;
One lab receives 8 cores – under discussion with radiology whether to take more

In the 2 centres receiving 12 cores the cores are not individually identified
Question 2b: Has the number of cores you receive changed since this audit period (October to December 2013)?

Six responses – all no
Question 3: How do you cassette and embed the cores?

- All cores put in single cassette and embedded in one block
- L & R sided cores embedded in separate cassettes
- Multi-well cassettes used so site of origin can be identified
- Each core put in individual cassettes and embedded in individual blocks
R & L sided cores embedded in separate cassettes
- 5
Multi-well cassettes used so site of origin can be identified
- 1
Each core put in individual cassettes and embedded in individual blocks
- 1
PCRMP

The identity of the cores according to the side (right/left) of the gland that they originated from should be maintained.

Standard met at all centres (100%)
Separation of individual cores is desirable as it allows for more accurate localisation and quantification of tumour burden. Also, individual cores can more easily be laid straight and flat after processing for blocking out, facilitating sectioning. This can be achieved by using individual cassettes, by cassettes with internal divisions or by ‘sandwiching’ cores between two foam inserts (or other appropriate material depending on local practice) in a specific order.

Recommendation fulfilled at 2 centres
Note;
The one centre using multi-wells is the one previously noted with split activity dependent on hospital of origin – unclear whether the use of multi-well cassettes is restricted to the hospital site submitting individual netted cores.
Question 4: How many levels are routinely cut?

- No levels
- Three levels – all 7 centres
- Five levels
- Other
PCRMP

As a minimum, the laboratory should take sections at three separate levels of the core. Level 1 should lie in the top half of the core, level 2 in the middle and level 3 in the bottom half of the core.
At least three levels are taken: one from the top half, middle and lower portion of each core. Examining less than three levels may miss significant clinical findings, whether the diagnosis of cancer itself or prognostic features such as grade or perineural invasion. In practice, the greatest problem is cutting too deep into the core for the first level and discarding valuable tissue. Introducing a relatively superficial first section, with three subsequent levels, into the sectioning protocols can circumvent this problem.

Standard met at all centres (100%)
Note;
One centre indicated 3 levels with three serial sections on each level.
Question 5a:
Which basal cell markers do you routinely use?

- CK34
- CK5/6
- p63
- Other
Question 5a response:
Which basal cell markers do you routinely use?

- CK34 only – 3 centres
- CK34 & CK5/6 – 1 centre
- CK5/6 & p63 – 1 centre
- CK34, CK5/6 & p63 – 2 centres
In cases for which the diagnosis of cancer is equivocal, immunohistochemistry for basal cell markers (high molecular weight cytokeratins, p63, etc.) should be used. The absence of a demonstrable basal cell layer is supportive, but not diagnostic, of malignancy.
Immunochemistry is an important adjunct to accurate prostatic cancer diagnosis in the differentiation of prostate cancer from another tumour, the investigation of differentiation patterns within a prostatic cancer and the examination of suspicious acini. There is a wide variation in the use of basal cell markers, which reflects the paucity of studies comparing them and providing guidance regarding their relative usefulness and efficacy. However, it is generally recognised that none of the basal cell markers are absolutely sensitive, as a small proportion of benign glands are negative with each of these markers. Using a combination of basal cell markers has been shown to increase the sensitivity of immunostaining, although the ideal combination is uncertain.
Notes;
One centre also uses a cocktail of CK5/p63 & p504s.

One centre indicated different practices between colleagues (CK34 vs CK5/6 & p63)
Question 5b:
Are basal cell markers used in -

- All cases?
  - 0.5
- Selected cases?
  - 6.5

Note;
At one centre the pathologist submitting the form indicated they personally do basal cell markers on all cases but this was not universal practice amongst colleagues.
All seven returned – yes
PCRMP

Spare sections at each level should be prepared at the initial time of sectioning because this will reduce the chance that the patient may need to be re-biopsied.

*As a minimum, four sections should be prepared at each level, one for haematoxylin and eosin (H&E) stain, two for immunohistochemistry and one as a spare. Only one section need be stained and examined at each level.
RCPath
Retaining spare sections from each level allows the use of immunocytochemistry to make a definitive diagnosis in difficult cases. This is important to avoid unnecessary re-biopsy; firstly because of the associated morbidity and secondly because subsequent biopsies will not necessarily sample the relevant area in the absence of clear anatomical landmarks on ultrasound.

Standard met at all centres (100%)*

*PCRMP standard only partially met
Question 7: Which pathologists report on prostatic core biopsies?

- All – 6 centres
- Sub-specialist uro-pathologists only – 1 centre

Note:
One centre indicated the majority (6/8) pathologists report on prostatic cores but this is shortly to change with lab amalgamation and introduction of specialist uro-pathologists.

PCRMP recommendation - Specimens should be examined and reported by a trained pathologist. If trainee pathologists examine specimens, these should be reported by a trained pathologist.
Question 8:
Which cases are double reported prior to MDT review?

- None
- All
- Benign only
- Malignant only
- Selected cases
Question 8 response:
Which cases are double reported prior to MDT review?

- None
  - 2
- Benign only
  - 1
- Malignant only
  - 2
- Selected cases
  - 2
Question 8 recommendation:
Which cases are double reported prior to MDT review?

RCPath doc – ‘The role of the lead pathologist and attending pathologists in the multidisciplinary team, March 2014’

This issue was reviewed by the College in February 2013 and a statement related to double reporting has concluded that there are only limited areas of work that mandate formal double reporting.
Question 8 recommendation:
Which cases are double reported prior to MDT review?

PCRMP
An early referral to a pathologist with expertise in the area of prostate biopsies should be made for all cases in which the diagnosis of cancer is equivocal. This will avoid delaying the diagnosis and reduce the possibility of a repeat biopsy. Equivocal cases may arise when the pathologist is uncertain and also when the operator who took the biopsy has a high clinical suspicion despite the absence of histological confirmation. Appropriate expertise can be sought from multidisciplinary team meetings and pathology networks.
Notes;
One centre indicated there is no departmental protocol for double reporting although selected cases will be shown to colleagues at primary pathologists discretion.

One centre indicated they double report benign cases and some difficult malignant cases.
Question 9: Which cases are reviewed at MDT?

- All cases
- Malignant cases only
- Benign and malignant cases chosen by urologist
Question 9 response:
Which cases are reviewed at MDT?

- All cases – no centres
- Malignant cases only – 4 centres
- Benign and malignant chosen by urologist – 3 centres

Note;
General impression is all malignant cases are reviewed at MDT with a selection of benign cases at urologists discretion.
Four standards measured against.

(1a&1b) As a minimum requirement, cores should be identifiable according to the side of the gland that they originated from & the identity of the cores according to the side of the gland that they originated from should be maintained.

- Standard met in 100%

(2) The scheme used at first biopsy should be a 10 to 12 core pattern.

- Standard met at 6 of 7 centres (86%)
(3) As a minimum, the laboratory should take sections at three separate levels of the core.
   - Standard met in 100%

(4) Spare sections at each level should be prepared at the initial time of sectioning
   - Standard met in 100%
Limited practice with respect to identifying site of origin of biopsies and variable practice in embedding protocol

Variable use of basal cell markers

Variable reporting practices – general vs specialist

Variable practice with respect to double reporting

Variable practice with regards to case selection and review for MDT
Thankyou