



Best practice recommendations

Histopathology and cytopathology of limited or no clinical value

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Authors: Dr Rachael Liebmann, Dr Murali Varma

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Comments	<p>This guideline is in line with the overarching principles and recommendations made in the GIRFT Pathology report. It has been reviewed and is fully endorsed by the GIRFT Pathology project team. In accordance with the College's pre-publication policy, this document will be on the Royal College of Pathologists' website for an abridged consultation from 9 to 23 October 2024. Responses and authors' comments will be available to view on publication.</p> <p>The following changes have been made to this BPR.</p> <ul style="list-style-type: none"> The sections 3.6.7 Gallbladders and 3.6.8 Appendices have been added. <p>Dr Michael Eden, Clinical Director of Quality and Safety</p>



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Foreword

Best practice recommendations (BPRs) published by the Royal College of Pathologists should assist pathologists in providing a high standard of care for patients. BPRs are systematically developed statements intended to assist the decisions and approach of practitioners and patients about appropriate actions for specific clinical circumstances. They are based on the best available evidence at the time the document was prepared. It may be necessary or even desirable to depart from the advice in the interests of specific patients and special circumstances. The clinical risk of departing from the BPR should be assessed and documented.

A formal revision cycle for all BPRs takes place every 5 years. The College will ask the authors of the BPR to consider whether or not the recommendations need to be revised. A full consultation process will be undertaken if major revisions are required. If minor revisions or changes are required, a short note of the proposed changes will be placed on the College website for 2 weeks for members' attention. If members do not object to the changes, a short notice of change will be incorporated into the document and the full revised version will replace the previous version on the College website.

This BPR has been reviewed by the Professional Guidelines team. It will be placed on the College website for an abridged consultation with the membership from 9 to 23 October 2024. All comments received from the membership will be addressed by the authors to the satisfaction of the Clinical Director of Quality and Safety.

This BPR was developed without external funding to the writing group. The College requires the authors of BPRs to provide a list of potential conflicts of interest. These are monitored by the College's Professional Guidelines team and are available on request. The authors of this document have declared that there are no conflicts of interest.

1 Introduction

2 In January 2001, an article entitled 'A recovery plan for histopathology' was published in
3 the *Bulletin* of the Royal College of Pathologists.¹ This article emanated from a meeting of
4 consultant histopathologists in September 2000 in response to growing concerns about
5 cellular pathology consultant staffing. The article was published as a draft, with the express
6 purpose of encouraging comments and debate through wide consultation with the College
7 membership.

8 The salient points were:

- 9 • the relationship between the College and cellular pathologists
- 10 • recruitment and training
- 11 • workforce and workloads
- 12 • flexible working
- 13 • service configuration.

14 Under the heading 'Workforce and workloads', the report stated that the College should
15 'initiate a series of evidence-based multidisciplinary evaluations of investigations of
16 doubtful clinical utility to identify those that make little or no contribution to patient care and
17 welfare. Some diagnoses made traditionally by histopathology may be made with higher
18 sensitivity and specificity by other methods, thus relieving histopathologists of some of
19 their burden'.

20 That statement formed the remit of the working group for the first version of this BPR (then
21 known as guidance).²

22 2 Methods

23 The first version of this BPR was published in August 2002 after a period of consultation.
24 The second version was reviewed and published in accordance with the College
25 publications policy in December 2015. In addition to the BPR's original goals, the second
26 version examined areas not covered by the first version. It included data generated as a
27 response to the original report (for example, audits, published work and abstracts).

28 This fourth version has been produced after articles in the *Bulletin* drew attention to the
29 need among fellows for an up-to-date document of this type, as many of the original

1 drivers mentioned in the introduction are still very relevant and are reinforced by the recent
2 Choosing Wisely principles.

3 In recent years, workforce shortages in cellular pathology have been exacerbated by the
4 COVID-19 pandemic, as initially the workload dropped during lockdown and then
5 rebounded higher than pre-pandemic levels. Additionally, the implementation of digital
6 pathology across many pathology networks requires the validation of digital diagnosis by
7 individual histopathologists and double reporting cases with glass slides and digital
8 images. In the short term, this will inevitably place more strain on an already overloaded
9 consultant workforce. This makes the recommendations in this document more relevant
10 than ever.

11 **3 Recommendations**

12 **3.1 General points**

13 The authors re-emphasise the following general principles. After this section, there are
14 recommendations for specific systems.

15 It must be stressed that this BPR should be discussed and agreed at a local level with
16 clinical colleagues. Implementation will vary depending on local circumstances, such as the
17 degree of training, staffing and research interests.

18 It should be appreciated that unnecessary biopsies have an impact beyond cellular
19 pathology laboratories; for example, these specimens have to be transported to the
20 laboratory, the reports read and filed, and appropriate letters about them written to GPs by
21 clinicians.

22 Cellular pathologists should critically review the length and complexity of their reports. A
23 brief comparison of breast cancer reports from a number of neighbouring trusts revealed
24 huge variation. Some reports covered less than a single page and others many pages, yet
25 all contained similar data as outlined in the College's datasets for breast cancer. As well as
26 being time-consuming to dictate, type and authorise, long and complex descriptive reports
27 make clinical decision-making more difficult and increase the potential for
28 misunderstanding.

29 The use of standard 'canned' reports is strongly encouraged. This will save both secretarial
30 and consultant time.

1 College datasets and tissue pathways for cancers and other specimens are welcomed and
2 play a key role in standardising reporting. Published evidence shows that the use of
3 templates improves the quality of information in pathology reports.³⁻⁵ A national initiative to
4 enable the easy introduction of datasets into departmental laboratory information
5 management systems is being sought by the College.

6 There are a number of idiosyncrasies that lead to increased workloads, which occur in
7 almost every laboratory. Publicising these issues might help with their eradication.
8 Historical panels of special stains and immunohistochemical panels should be examined
9 critically and care should be taken to avoid redundancy.

10 The major factors that cause increases in workload are those associated with increased
11 clinical demand and a rise in the number of relevant prognostic factors. This has led to
12 increased work on difficult cases, as well as an absolute increase in requests and reducing
13 numbers of practising pathologists.

14 Cellular pathologists are often asked for an opinion on a specimen that may not
15 necessarily need extensive histopathology. For some specimens, a gross inspection with a
16 single histopathology section to act as a record and, for audit purposes, may well suffice.
17 However, specimen photography of slices could also provide more complete records of
18 macroscopic normality than a random section that needs histological examination and
19 reporting. As mentioned, photography is often excellent for documenting macroscopic
20 appearances of a specimen; however, it is also time-consuming at dissection and should
21 be used appropriately for the more complicated cases. Routine macroscopic photography
22 is not justified.

23 Thorough macroscopic examination by thin slicing of properly fixed specimens is more
24 important than random histological sampling. Only about 0.2% of a specimen is examined
25 under microscope, even if the specimen is all embedded. Specimen blocking should be
26 aimed at answering specific questions; the number of routine background blocks should be
27 limited. In most instances, a single block of macroscopically normal tissue for potential
28 genetic testing would be sufficient.

29 The aim of histopathological examination is to stratify patients by identifying features that
30 affect prognosis, so extensive histological sampling of specimens with no clinical suspicion
31 of malignancy should be discouraged.

32 There should be an aim to reduce the clinically irrelevant macroscopic description,
33 particularly specimen measurements. In some instances, weight may be a simpler and more

1 reproducible measure of specimen size. The key to macroscopic examination is to identify
2 focal abnormalities: recording 'no focal lesion' is more valuable than specimen dimensions,
3 which are frequently estimated rather than measured and then need to be dictated and
4 typed.

5 Some operations are therapeutic in nature; specimens from such procedures do not need
6 extensive histology (for example, thyroidectomy for Graves, breast reduction specimens).
7 Thin slicing after proper fixation and careful macroscopic examination is more important
8 than random blocks.

9 Some clinicians appear to feel that an examination is not complete without a biopsy – a
10 good example being a normal upper gastrointestinal (GI) endoscopy. A change in this
11 clinical behaviour pattern will only be achieved by good audit evidence and local
12 discussion within clinical teams. Major changes in the method of diagnosing *Helicobacter*
13 *pylori* have resulted in fewer gastric biopsies for this purpose. Pathologists should also be
14 prepared to provide feedback to their requesting clinical colleagues when requests are
15 inappropriate, or cases are designated as 'urgent' when not justified by the clinical context.

16 When drawing up guidelines, it would be helpful if clinical societies and organisations
17 consult with cellular pathology colleagues with, ideally, 1 being on the team making the
18 recommendations. Unless there is a clinical or radiological concern about malignancy,
19 abdominal wall hernia contents do not need to be submitted for histological examination.

20 Stoma reversal specimens at ileostomy or colostomy/Hartmann's reversal do not need to
21 be submitted for histological examination in cases of benign disease.

22 Specimens that are not human tissue and are not suitable for histological processing – for
23 example, mesh removed at hernia repair and salivary calculi – should be macroscopically
24 described and not submitted for histological processing. Feedback to the requestor should
25 be provided to discourage the sending of these inappropriate specimens for
26 histopathology.

27 The value of each test should be maximised by the correct submission of samples – for
28 example, 3 sputum specimens should be sent on 3 separate occasions, rather than
29 together at 1 time.

30 Extended roles for biomedical scientists can be very effective in releasing consultant and
31 trainee time. All available conjoint board examinations should be considered for the
32 development of biomedical scientists and departmental efficiency. These extended roles

1 now include qualifications for specimen dissection, including all major cancer resections,
2 independent reporting for diagnostic and cervical cytology and biomedical scientist
3 histopathology independent reporting in the high-volume areas of GI, gynaecological and
4 dermatopathology. The introduction of these extended roles enables consultants to focus
5 their activity on the most complex cases, to which their skills add the most value.

6 Macroscopic description by biomedical scientists and advanced practitioners is supported
7 by the College, but there must be regular review and updating so that block numbers do
8 not escalate in protocol-driven practice. At macroscopy, as in the rest of histopathology,
9 judgement must be exercised.^{6,7}

10 All changes to established protocols for referring cases to the laboratory need to be
11 reviewed as part of laboratory and personal annual review processes.

12 **3.2 Cytology systems**

13 **3.2.1 Cervical cytology**

14 Owing to a change in the age range for cervical screening and the introduction of liquid-
15 based cytology, there has been a reduction in screening cervical cytology samples as a
16 first-line investigation.^{8,9} Cervical cytology should not be used as a diagnostic test due to
17 the known false negative rates; colposcopy +/- biopsy is therefore the appropriate
18 investigation.

19 **3.2.2 Respiratory cytology**

20 Sputum samples should be requested in the main by respiratory physicians and only for
21 patients unfit for bronchoscopy.¹⁰⁻¹⁵ A 60% reduction in sputum samples was reported
22 following discussions with clinical colleagues about this BPR in 2015.^{16,17}

23 The British Thoracic Society's guidelines recommend biopsy, brushings and washings at
24 bronchoscopy.¹⁸ The authors feel that if a tumour is visible, biopsy and brushings should
25 suffice. Washings are unnecessary when the tumour is visible. However, the diagnosis
26 requires as many cells as possible that are used for further prognostic markers. This is an
27 invasive procedure and cannot be repeated again easily, so maximum sampling should be
28 attempted in the first bronchoscopy.

29 Cytology should not be used to diagnose *Pneumocystis carinii*. A sample for microbiology
30 is more appropriate as a result is available within 24 hours of using specific
31 immunofluorescence.

32

1 **3.2.3 Urine cytology**

2 A single cytospin slide is sufficient for diagnosis.¹⁹ Negative urines are often reported by
3 biomedical scientists.¹⁶

4 An unpublished audit from Edinburgh looked at 2,256 cases and concluded that urine
5 cytology should not be used in the follow-up of low-grade transitional cell carcinoma (TCC)
6 due to poor sensitivity and that it should not be used in patients before, or during,
7 intravesical therapy. The authors also noted the extreme rarity of TCC in patients under
8 the age of 50 years and that no patient with a biopsy-proven TCC presented clinically with
9 microscopic haematuria.²⁰ The use of urine cytology as a reflex protocol-driven
10 investigation following a positive dipstick test is not justified. The Paris classification for
11 urine cytology emphasises that urine cytology is primarily for identification of high-grade
12 urothelial neoplasia. 'Atypia, cannot exclude low-grade urothelial neoplasia' should be
13 reported as 'negative for high-grade urothelial neoplasia'.²¹

14 The NHS Cancer Registry Office suspended all further work on the National Bladder
15 Cytology Recall Scheme with effect from 1 June 2003.²² Screening urines should,
16 therefore, not be encountered.

17 The practice of sending urine cytology from urodynamic clinics in patients without evidence
18 of haematuria is inappropriate.

19 **3.2.4 Pleural fluid**

20 Only a single sample should be assessed when draining effusions related to cardiac
21 failure, unless there is other good evidence of malignancy. Once a patient's pleural fluid
22 has been reported as positive for malignancy, subsequent pleural taps performed for
23 symptomatic relief should not be sent for cytology but should be discarded.

24 **3.2.5 Ascitic fluid**

25 For peritoneal washings and ovarian cyst fluid, see section on gynaecological pathology.

26 **3.2.6 General fine-needle aspiration comments**

27 A maximum of 4 well-prepared slides should be submitted for examination.

28 **3.2.7 Breast**

29 Fine-needle aspiration (FNA) should only be undertaken and reported by those skilled in
30 each area.²³

1 Breast cyst fluid should only be examined if bloodstained or if there is a residual lump after
2 aspiration.

3 For those using direct smears from FNAs, a maximum of 4 well-prepared slides is
4 recommended, as previously stated.

5 **3.2.8 Salivary gland and thyroid**

6 FNA cytology of thyroid nodules and salivary gland lesions has an established role in the
7 initial assessment of patients and in deciding which patients require surgery. However, this
8 is a specialised field; both aspiration and interpretation of the material obtained is best
9 restricted to centres and individuals with specialist expertise.²⁴

10 **3.2.9 Cerebrospinal fluid**

11 Cytological examination should only be performed on cases with a suspicion of
12 malignancy²⁵ or aseptic meningitis. The possibility of multiple sclerosis is not an indication
13 for cerebrospinal fluid cytology.

14 **3.3 Gastrointestinal pathology systems**

15 After dialogue with clinical colleagues, it became clear that GI pathology systems can
16 benefit from a significant reduction in workload, if this BPR is followed. At consultation for
17 the first version of this BPR, many pathologists responded that a management BPR such
18 as this should be targeted to pathologists and also endoscopists.

19 Following the publication of the first version of this BPR, reductions of 18–38% of total
20 biopsy numbers were reported, with larger percentages seen for gastric biopsies.^{26–29}

21 Audits have shown that no serious pathology would have been missed by this policy.³⁰ A
22 simple rule of thumb is that biopsies from the upper GI tract should only be taken from
23 endoscopic lesions and not from endoscopically normal mucosa. While some pathologists
24 have stated that an upper GI endoscopy is incomplete without a biopsy (especially for the
25 diagnosis of gastritis and carditis),³¹ most GI pathologists are unconvinced by this
26 argument. There is no good evidence base to state that such biopsies are useful in the
27 management of individual patients; the authors fear that the recommendation is more for
28 research than for the provision of useful clinical information.

29 The same applies to most colonoscopies, with the notable exception of an examination for
30 chronic diarrhoea when biopsies of endoscopically normal large bowel are needed to
31 detect the various forms of microscopic colitis.

32

1 **3.3.1 Oesophagus**

2 There is no justification for a biopsy from a normal oesophagus.

3 Biopsies from patients with reflux oesophagitis are unhelpful; endoscopy is better at
4 assessing reflux than histopathology. However, if there is considerable ulceration, biopsy
5 may be justified to exclude malignancy. In the presence of specific symptoms, it may be
6 reasonable to take steps to exclude eosinophilic oesophagitis.

7 Diagnostic and surveillance biopsies for Barrett's oesophagus are reasonable, not least
8 due to the increasing prevalence of the disease and its complicating adenocarcinoma.³²

9 Ultra-short segment Barrett's oesophagus (cardia intestinal metaplasia), with or without
10 carditis, is a highly prevalent condition and its management is not yet determined. We
11 believe that this condition should not be sought as it infers a normal junction; there are
12 currently no recommendations on the appropriate management of this condition or its
13 neoplastic risk. However, as with all recommendations in this document, the decision to
14 undertake biopsies of an endoscopically normal oesophagogastric junction must rest with
15 the local medical community.

16 Oesophageal biopsy to demonstrate mainly *Candida* is much less sensitive than
17 oesophageal brushing. Oesophageal brushing is often sent, particularly for clinically
18 suspected cases of *Candida*. A recent audit shows oesophageal brushing to be sensitive
19 in 90% of cases and biopsy to be sensitive only in 12% of cases of suspected *Candida*.

20 **3.3.2 Stomach**

21 There is no evidence that biopsy of the normal stomach gives any useful clinical
22 information that is likely to alter management in the routine setting. It is emphasised that
23 there is always a need to biopsy abnormal areas of the stomach.³³

24 Biopsies should not be done purely to identify *H. pylori*. There are equally good,
25 alternative, much cheaper tests.^{34–38}

26 There is little evidence that histopathological grading of gastritis, with or without intestinal
27 metaplasia, gives any useful information for the subsequent management and follow-up of
28 individual patients. Indeed, there are 2 time-honoured, admittedly retrospective, studies
29 that indicate that the demonstration of intestinal metaplasia, particularly of incomplete type,
30 is not of any use in the clinical setting for identifying those patients likely to suffer from
31 subsequent gastric cancer.^{39,40} While there is an important role for gastric biopsies in
32 research, we believe that routine biopsies of the endoscopically normal stomach cannot be

1 justified because there is no evidence base that the information gleaned alters patient
2 management.

3 We agree that there is little or no correlation between endoscopic appearances and the
4 presence or absence of gastritis.^{41,42} Nevertheless, we reiterate our view that biopsies are
5 unlikely to change management based on such a lack of correlation; there is no evidence
6 that they do.

7 Once again, we emphasise that any policy on biopsy for the diagnosis of any form of
8 gastritis must be local, after discussion with all interested parties. For instance, advocates
9 of routine gastric biopsy have indicated that the evidence of severe atrophic gastritis in
10 *H. pylori*-associated disease is predictive of gastric cancer risk. We would not deny the
11 evidence for this,⁴³ but we would question whether such data justify the routine biopsy of
12 all stomachs at endoscopy and whether the demonstration of such a phenotype changes
13 management in any way (assuming the *H. pylori* gastritis is appropriately treated).

14 **3.3.3 Duodenum and small bowel**

15 Biopsy of the second part of the duodenum (D2) or beyond remains the gold standard for
16 the diagnosis of coeliac disease, as serological tests are neither 100% specific nor
17 sensitive. There are national and international recommendations indicating that 4 'good-
18 sized' biopsies are taken from D2 or beyond as the histopathological changes of coeliac
19 disease can be strikingly focal.

20 Proof of completion of the upper GI endoscopy is best concluded with a clear endoscopic
21 picture of the duodenal mucosa instead of the 'Everest' biopsy which has no
22 histopathological benefit.

23 **3.3.4 Colonoscopic biopsies**

24 A colonoscopic examination, with a normal appearance, should only prompt biopsies in the
25 correct clinical setting. That is, persistent watery diarrhoea without blood, usually in a
26 middle-aged or older (often female) patient, with the express intention of confirming or
27 refuting a diagnosis of microscopic colitis.

28 When biopsied, a maximum of 5 or 6 biopsies are recommended and, in the correct
29 clinical setting, there is a case for dividing them into 2 or 3 from the right side (caecum to
30 distal transverse colon) and 2 or 3 from the left, so that only 2 slides need be examined.⁴⁴
31 This is because collagenous colitis, in particular, is more likely to be demonstrated in right
32 colonic and transverse colonic biopsies.⁴⁵

1 Ileal biopsies purely to demonstrate that the colonoscopist has reached the terminal ileum
2 are not justified (a photograph will suffice for audit and training purposes). Ileal biopsies for
3 the demonstration of chronic inflammatory bowel disease and other inflammatory
4 conditions are merited.⁴⁶

5 Random rectal biopsies with a clinical history of rectal bleeding are not justified.

6 **3.3.5 Resection margins**

7 For colorectal cancer cases, there is no indication to take sections of the resection margins
8 from a tumour case if the tumour is more than 3 cm from the margin in question. Resection
9 margins do not need to be examined in resections for Crohn's disease as there is no
10 evidence that a positive margin is predictive for recurrent disease, although macroscopic
11 active ulcerating disease at a margin may influence subsequent therapy.

12 **3.4 Gynaecological pathology systems**

13 **3.4.1 Termination of pregnancy**

14 Specimens should not be sent to the laboratory if fetal parts are visible. For terminations,
15 there is no indication to undertake histology if there are no abnormal clinical findings.⁴⁷

16 **3.4.2 Endometrium**

17 Endometrial sampling should not routinely be performed in women with abnormal bleeding
18 under the age of 40 years. Some gynaecologists do not biopsy the endometrium, even in
19 women over this age, if the transvaginal ultrasound shows a thin endometrium with no
20 focal lesions and a normal hysteroscopy.

21 **3.4.3 Normal uterus for abnormal bleeding**

22 It is rare for a significant abnormality to be found on histopathology if the gross examination
23 is negative.⁴⁸ A larger audit on this subject is recommended.

24 **3.4.4 Uterus for prolapse**

25 If there are no focal lesions, 1 block from the cervix and 1 from the endo/myometrium are
26 all that are required.⁴⁹ Focal lesions should be examined as per protocols.

27 **3.4.5 Hysterectomies after previous cervical intraepithelial neoplasia**

28 The whole cervix should be sampled if examined soon after diagnosis of cervical
29 intraepithelial neoplasia (CIN). However, when there has been a series of interim negative
30 smears, more limited sampling is appropriate.⁵⁰

31

1 **3.4.6 Ovarian cyst fluid**

2 It is not necessary to send ovarian cyst fluid with oophorectomy specimens as no lining
3 cells are present in up to 76% of cases and the diagnosis would be based on the
4 histological rather than cytological examination. In some infertility or other investigations,
5 the examination of ovarian cyst fluid may be helpful. Rarely, solid ovarian lesions may be
6 investigated by FNA.

7 **3.4.7 Peritoneal washings**

8 These should not be sent for cytology during gynaecological surgery for benign disease.⁵¹
9 However, when there is doubt whether an ovarian mass is benign or malignant, washings
10 must be sent for cytological examination. These samples should be reported in conjunction
11 with the resection specimen. Peritoneal washings are required for International Federation
12 of Gynaecology and Obstetrics (FIGO) staging in cancer cases.

13 **3.4.8 Omental sampling**

14 Based on a 10-year experience of 692 cases, it is recommended that 1 block is needed if
15 the ovary and omentum are either both benign or both malignant on gross inspection.⁵² If
16 the ovary is malignant or borderline on gross inspection or histological examination and the
17 omentum appears normal, and in post neo-adjuvant cases, thorough sampling is needed.

18 **3.5 Urological pathology systems**

19 Channel transurethral resection of the prostate (TURP) for treatment of retention in
20 patients with known advanced prostate cancer requires minimal histological sampling.⁵³

21 The rationale for systematic sampling of TURP specimens from patients with no clinical
22 suspicion of malignancy is questionable. Sampling protocols designed to identify almost all
23 incidental cancers in specimens from patients with no clinical suspicion of malignancy
24 could amount to histological screening for cancer. Hence, we suggest that such protocols
25 should be reviewed.

26 Orchidectomy for the treatment of prostate cancer requires only limited sampling if there is
27 no focal lesion.

28 Foreskin from a young patient with no macroscopic evidence of abnormality requires
29 macroscopic description only.⁵⁴

30

31

1 **3.6 General systems**

2 **3.6.1 Breast reductions for cosmetic purposes**

3 These can generate a considerable amount of work. A section from macroscopically
4 abnormal areas is always justified; however, the value of random histopathology is limited.
5 A retrospective audit on 1,289 patients showed that, when 2 random blocks were taken
6 from each breast, 'important diagnoses' were made in 2.1% of cases.⁵⁵ The question
7 remains as to how many blocks are reasonable. Increased numbers of sections are
8 reasonable in symmetrisation specimens when breast cancer has already been found in
9 the contralateral breast, as these patients are at increased risk.

10 **3.6.2 Mastectomy specimens after primary chemotherapy**

11 These can involve taking many blocks to look for residual tumour. Marking tumours before
12 chemotherapy and using Faxitron images of the slices will aid the location of residual tumour
13 and reduce the number of blocks that need to be taken.

14 **3.6.3 Breast implant capsules**

15 The description of breast implant-related anaplastic large cell lymphoma has resulted in the
16 need to sample these explanted capsules thoroughly and submit for
17 immunohistochemistry, where clinically indicated.^{56,57}

18 **3.6.4 Skin biopsies**

19 Many plastic surgeons in secondary care units triage specimens that they send for
20 histopathology. This applies in particular to multiple small (3 mm or less) skin tags. This
21 can be supported.

22 Excisions of non-pigmented benign keratoses and resolved lesions by plastic surgery
23 teams often yield no discrete pathology; the minimum number (1) of blocks is sufficient. No
24 laboratory or consultant time should be wasted by the reporting pathologist chasing a non-
25 existent lesion through levels or extra sections.

26 In primary care, there is widespread clinical good practice consensus that GPs undertaking
27 minor surgery and GPs with a specialist interest in dermatology should submit all tissue
28 removed for histopathological examination. This requirement is often part of local protocols
29 to accredit service provision to ensure that any case of skin pre-cancer or cancer is not
30 missed, as endorsed by the National Institute for Health and Care Excellence (NICE) in its
31 *Improving outcomes for people with skin tumours including melanoma* guidelines.⁵⁸ In view

1 of the low risk, however, it would appear reasonable that multiple small (3 mm or less) skin
2 tags are submitted in 1 specimen container.

3 Reports for excision margins on benign lesions should be limited to those with clinical
4 relevance for potential recurrence and/or if specifically requested by a local clinician or
5 agreed in local protocols. With adequate macroscopic examination and submission of
6 transverse sections, routine submission of the tips or ends is not supported by
7 evidence.^{59,60}

8 In the performance of Mohs surgery under frozen section control, routine paraffin
9 haematoxylin and eosin (H&E) examination is not required, if there is a regular audit of the
10 frozen sections.

11 Breast cancer wide local excision cavity shavings need to be kept to a reasonable number
12 and volume, since the recommended submission of these in their entirety for histological
13 examination creates a great deal of additional histological work for histopathologists.
14 Surgeons should be encouraged to keep the shavings thin, appropriate and clinically
15 relevant, as these generate a lot of work and histologically may not yield much information.

16 **3.6.5 Orthopaedic and soft tissue**

17 Femoral heads and other articular surfaces removed for known osteoarthritis or
18 inflammatory arthritis do not need to be submitted for histopathology, unless there is a
19 specific clinical question, such as: 'Is there evidence of pre-existing osteonecrosis, sepsis
20 or a radiological abnormality suggestive of a coincidental metabolic bone disease or
21 tumour?' In contrast, tissue removed at surgery for revision of a prosthesis requires
22 examination to differentiate between mechanical loosening and infection.

23 In patients with femoral neck fractures, femoral heads should only be examined where
24 there is a suspicion radiologically of a pathological fracture or there is relevant past history
25 of malignancy.

26 All soft tissue lumps and bumps (for example, ganglia and Morton's neuromas) do need to
27 be examined because of the risk of missing small juxta-articular synovial sarcomas,
28 epithelioid sarcomas and the like.

29 Amputation specimens for non-tumorous reasons, such as ischaemia, should not be sent
30 to the laboratory for examination.

31

32

1 **3.6.6 Re-excision of melanomas**

2 There is evidence in the UK literature to show that gross inspection, with a single slide
3 from the centre of the previous biopsy site, is all that is needed if the original lesion was
4 fully excised and in the absence of macroscopic disease.^{61–64}

5 **3.6.7 Gallbladders**

6 These should be examined macroscopically, as significant pathology may be present.
7 There are studies indicating that routine gallbladder histopathology is not indicated.⁶⁵
8 Since that publication, several series of gallbladder routine histology have replicated and
9 confirmed the central findings of that study that the incidental gallbladder cancer found at
10 histology is always less than 1% and that, in majority of the cases, the neoplastic
11 gallbladders are described as abnormal or suspicious at examination either by surgeons
12 and/or pathologists. We would, therefore, recommend a policy of selective routine
13 histology of the gallbladder.

14 **3.6.8 Appendices**

15 These should continue to be examined histologically, as significant pathology may be
16 present with normal gross morphology.

17 **3.6.9 Placenta⁶⁶**

18 There is no justification for examination of the placenta following a normal birth. In general,
19 only those placentae associated with maternal conditions, such as pre-eclampsia or with
20 abnormal live births (prematurity, growth retardation, malformation, etc.), should be
21 examined. There are few indications for placental examination in the case of twin births
22 where both twins have been delivered and are thriving. Full indications for
23 histopathological examination of the placenta are detailed in the Royal College of
24 Pathology tissue pathway. Please refer to the [Tissue pathways for histopathological
25 investigation of the placenta](#).⁶⁷ It is reasonable to suggest that placental examination in the
26 case of abnormal live births should ideally be undertaken by a pathologist with a special
27 interest.

28 **3.6.10 Nasal polyps**

29 It is rare to find significant pathology in nasal polyps that are not worrying on clinical
30 grounds or gross inspection, therefore most should not be submitted for histopathology.⁶⁸ If
31 nasal polyps are sent to the laboratory, then we recommend only minimal sampling.

32

1 **3.6.10 Tonsils**

2 These should not be submitted for histopathology unless there is a clinical suspicion of
3 malignancy.

4 **3.7 Discussion**

5 It is clear that the areas identified in these recommendations have resulted in some
6 decrease in work of limited or no clinical value. The topics should be discussed with
7 clinical colleagues in a multidisciplinary manner.

8 **4 Conclusion**

9 The authors have produced this fourth edition to maintain the level of College BPRs in this
10 important area and to prompt discussion with local colleagues to help with workload
11 management. The issues roughly divide into the following:

- 12 • specimens being sent for histopathology without any obvious clinical reason, for
13 example, ischaemic limbs, placentas from normal pregnancies and pleural fluid and
14 ascites from patients with known disseminated cancer
- 15 • changing clinical practice, for example, gastric biopsies for *H. Pylori* and identification
16 of *P. carinii*
- 17 • misuse of the service by users, for example, inappropriate sputum and urine cytology
18 and overuse of the urgent designation for cases with no clinical urgency
- 19 • inefficient service provision, for example, unnecessarily long-winded reports and a lack
20 of involvement of biomedical scientists for extended roles.

21 It is stressed that any decision regarding limiting clinicians' access to cellular pathology
22 must be discussed and recorded at local multidisciplinary team and management
23 meetings. It should be remembered that clinical requestors are frequently nursing and
24 other healthcare professionals who work to protocols that have not been designed with the
25 involvement of a pathology consultant. With frequent discussion, consultants and their
26 teams should be entirely happy to comply with demand management.

27 Undoubtedly, the value of certain cellular pathology tests will change over time and with
28 further evidence. This area should be interpreted as fluid and reflecting the views of the
29 authors in 2024. It should not be seen as a permanent record.

5 References

1. Underwood JCE. A recovery plan for histopathology. *The Bulletin of the Royal College of Pathologists* 2001;113:12–14.
2. The Royal College of Pathologists. *Histopathology of limited or no clinical value* London, UK: The Royal College of Pathologists, 2002.
3. Leslie KO, Rosai J. Standardization of the surgical pathology report: Formats, templates, and synoptic reports. *Semin Diagn Pathol* 1994;11:253–257.
4. Bull AD, Biffin AH, Mella J, Radcliffe AG, Stamatakis JD, Steele RJ, Williams GT. Colorectal cancer pathology reporting: A regional audit. *J Clin Pathol* 1997;50:138–142.
5. Reid WA, al-Nafussi AI, Rebello G, Williams AR. Effect of using templates on the information included in histopathology reports on specimens of uterine cervix taken by loop excision of the transformation zone. *J Clin Pathol* 1999;52:825–828.
6. Liebmann R, Haynes M, Carson J, Kirk N. Breaking new ground in histopathology: Report from the pilot of BMS histopathology reporting. *The Bulletin of the Royal College of Pathologists* 2015;169:27–30.
7. Horne J. Training healthcare scientists in histopathology reporting. *The Bulletin of the Royal College of Pathologists* 2018;169:89–91.
8. NHS Cancer Screening Programmes. *Achievable standards, benchmarks for reporting and criteria for evaluating cervical cytopathology*. Accessed July 2024. Available at: www.gov.uk/government/publications/cervical-screening-cytopathology-standards-and-evaluation-criteria
9. NICE. *Guidance on the use of liquid-based cytology for cervical screening*. Accessed July 2024. Available at: www.nice.org.uk/guidance/ta69/resources/guidance-on-the-use-of-liquidbased-cytology-for-cervical-screening-pdf-2294706450373
10. Benbassat J, Regev A, Slater PE. Predictive value of sputum cytology. *Thorax* 1987;42:165–172.
11. MacDougall B, Weinerman B. The value of sputum cytology. *J Gen Intern Med* 1992;7:11–13.

12. Gledhill A, Bates C, Henderson D, DaCosta P, Thomas G. Sputum cytology: A limited role. *J Clin Pathol* 1997;50:566–568.
13. Burton JL, Lee JA, Goepel JR. Successful demand management in histopathology: A model using sputum cytology. *J Clin Pathol* 2001;54:896.
14. Murray KL, Duvall E, Salter DM, Monaghan H. Efficacy and pattern of use of sputum cytology as a diagnostic test. *Cytopathology* 2002;13:350–354.
15. Ghataura SS, Young JA. Sputum cytology: An unsatisfactory test? *J Clin Pathol* 2003;56:78–79.
16. Herbert A. Signing and validation of cytopathology reports. *The Bulletin of the Royal College of Pathologists*, 1996;96:12–14.
17. Monaghan H, Wallace W. Sputum audit follow-up 2002. Unpublished.
18. British Thoracic Society Bronchoscopy Guidelines Committee. British Thoracic Society guidelines on diagnostic flexible bronchoscopy. *Thorax* 2001;56 Suppl 1:i1–i21.
19. Burton JL, Goepel JR, Lee JA. Demand management in urine cytology: A single cytospin slide is sufficient. *J Clin Pathol* 2000;53:718–719.
20. Mayer NJ, Grigor KM. Urine cytology audit. Unpublished.
21. Barkan GA, Wojcik EM, Nayar R, Savic-Prince S, Quek ML, Kurtycz DF, Rosenthal DL. The Paris system for reporting urinary cytology: The quest to develop a standardized terminology. *Acta Cytol* 2016;60:185–197.
22. Letter to National Screening Committee (National Bladder Cytology Recall Scheme). 2004.
23. Howat AJ, Coghill S. Normal breast cytology and breast screening. *In: Gray W (ed) Gray's cytopathology*. Edinburgh, UK: Churchill Livingstone, 2003.
24. Kocjan G. Pitfalls in fine needle aspiration cytology (fnac) of endocrine organs. 2002;4:127–129.
25. Weatherall MW, Chatterjee KM, Tan AT, Dawson T. Audit can reduce inappropriate requests for cytological examination of cerebrospinal fluid. *Cytopathology* 2004;15:119–120.
26. Cross SS, Stone JL. Proactive management of histopathology workloads: Analysis of the UK Royal College of Pathologists' recommendations on specimens of limited or no

clinical value on the workload of a teaching hospital gastrointestinal pathology service. *J Clin Pathol* 2002;55:850–852.

27. Kumaraswamy V, Wyatt JI. *The effect of intervention on the number of biopsies of limited or no clinical value in gastrointestinal pathology*. 2003.
28. Littleford SE, Rembaken BJ, Cairns A. How would implementation of the Royal College of Pathologists' 'limited or no clinical value' recommendations affect the gastrointestinal biopsy workload of a teaching hospital? *J Pathol* 2003;201:18A.
29. Jeffery A, Holbrook M, McGregor A, Richards C. Gastrointestinal biopsies of limited or no clinical value within a large teaching hospital. *J Pathol* 2004;204:26A.
30. Littleford SE, Rembaken BJ, Cairns A. Gastrointestinal endoscopic biopsies of 'limited or no clinical value' (loncv): Completing the audit cycle. *J Pathol* 2004;204:29A.
31. Carpenter HA, Talley NJ. Gastroscopy is incomplete without biopsy: Clinical relevance of distinguishing gastropathy from gastritis. *Gastroenterology* 1995;108:917–924.
32. Hellier MD, Shepherd NA. Diagnosis of columnar-lined oesophagus. In: Watson A, Heading RC, Shephard NA (eds). *Guidelines for the Diagnosis and Management of Barrett's Columnar-line Oesophagus*. London, UK: The British Society of Gastroenterology, 2005.
33. Cadman B, Dixon MF, Wyatt JI. Value of routine, non-targeted biopsies in the diagnosis of gastric neoplasia. *J Clin Pathol* 1997;50:832–834.
34. Peterson WL, Fendrick AM, Cave DR, Peura DA, Garabedian-Ruffalo SM, Laine L. Helicobacter pylori-related disease: Guidelines for testing and treatment. *Arch Intern Med* 2000;160:1285–1291.
35. Hahn M, Fennerty MB, Corless CL, Magaret N, Lieberman DA, Faigel DO. Noninvasive tests as a substitute for histology in the diagnosis of helicobacter pylori infection. *Gastrointest Endosc* 2000;52:20–26.
36. Lassen AT, Pedersen FM, Bytzer P, Schaffalitzky de Muckadell OB. Helicobacter pylori test-and-eradicate versus prompt endoscopy for management of dyspeptic patients: A randomised trial. *Lancet* 2000;356:455–460.
37. McColl KE, Murray LS, Gillen D, Walker A, Wirz A, Fletcher J *et al*. Randomised trial of endoscopy with testing for helicobacter pylori compared with non-invasive H pylori testing alone in the management of dyspepsia. *BMJ* 2002;324:999–1002.

38. McNulty C, Teare L, Owen R, Tompkins D, Hawtin P, McColl K. Test and treat for dyspepsia--but which test? *BMJ* 2005;330:105–106.
39. Ectors N, Dixon MF. The prognostic value of sulphomucin positive intestinal metaplasia in the development of gastric cancer. *Histopathology* 1986;10:1271–1277.
40. Ramesar KC, Sanders DS, Hopwood D. Limited value of type iii intestinal metaplasia in predicting risk of gastric carcinoma. *J Clin Pathol* 1987;40:1287–1290.
41. Khakoo SI, Lobo AJ, Shepherd NA, Wilkinson SP. Histological assessment of the Sydney classification of endoscopic gastritis. *Gut* 1994;35:1172–1175.
42. Belair PA, Metz DC, Faigel DO, Furth EE. Receiver operator characteristic analysis of endoscopy as a test for gastritis. *Dig Dis Sci* 1997;42:2227–2233.
43. Miehlike S, Hackelsberger A, Meining A, Hatz R, Lehn N, Malfertheiner P *et al.* Severe expression of corpus gastritis is characteristic in gastric cancer patients infected with helicobacter pylori. *Br J Cancer* 1998;78:263–266.
44. Prior A, Lessells AM, Whorwell PJ. Is biopsy necessary if colonoscopy is normal? *Dig Dis Sci* 1987;32:673–676.
45. Offner FA, Jao RV, Lewin KJ, Havelec L, Weinstein WM. Collagenous colitis: A study of the distribution of morphological abnormalities and their histological detection. *Hum Pathol* 1999;30:451–457.
46. Geboes K, Ectors N, D'Haens G, Rutgeerts P. Is ileoscopy with biopsy worthwhile in patients presenting with symptoms of inflammatory bowel disease? *Am J Gastroenterol* 1998;93:201–206.
47. Smith SC, Dutta I. Termination of pregnancy (top). *Obst Gynae Reprod Med* 2014;24:221–226.
48. Salmon HA, Smith JH, Balsitis M. Is microscopic assessment of macroscopically normal hysterectomy specimens necessary? *J Clin Pathol* 2002;55:67–68.
49. Yin H, Mittal K. Incidental findings in uterine prolapse specimen: Frequency and implications. *Int J Gynecol Pathol* 2004;23:26–28.
50. Greene A, Heatley MK. The appropriateness of examining the entire cervix histologically in hysterectomy specimens from women with a previous history of cervical intraepithelial neoplasia or dyskaryosis. *J Clin Pathol* 2001;54:155–157.

51. Sharifi S, Ducatman BS, Wang HH, Fraser JL. Peritoneal washing cytology is unnecessary in gynecologic surgery for benign diseases. *Cancer* 1999;87:259–262.
52. Doig T, Monaghan H. Thorough sampling of the omentum; how many blocks does a Pathologist need to take?, Unpublished.
53. The Royal College of Pathologists. *Dataset for histopathology reports for prostatic carcinoma*. Accessed June 2024. Available at: www.rcpath.org/resourceLibrary/g048-prostatedataset-jun16-pdf.html
54. Shah VS, Jung NL, Lee DK, Nepple KG. Does routine pathology analysis of adult circumcision tissue identify penile cancer? *Urology* 2015;85:1431–1434.
55. Cook IS, Fuller CE. Does histopathological examination of breast reduction specimens affect patient management and clinical follow up? *J Clin Pathol* 2004;57:286–289.
56. Hwang MJ, Brown H, Murrin R, Momtahan N, Sterne GD. Breast implant-associated anaplastic large cell lymphoma: A case report and literature review. *Aesthetic Plast Surg* 2015;39:391–395.
57. Ezekwudo DE, Ifabiyi T, Gbadamosi B, Haberichter K, Yu Z, Amin M *et al*. Breast implant-associated anaplastic large cell lymphoma: A case report and review of the literature. *Case Rep Oncol Med* 2017;2017:6478467.
58. NICE. *Improving outcomes for people with skin tumours including melanoma*. Available at: www.nice.org.uk/guidance/csg8
59. The Royal College of Pathologists. *Dataset for histopathological reporting of primary cutaneous basal cell carcinoma*. Accessed July 2024. Available at: www.rcpath.org/profession/guidelines/cancer-datasets-and-tissue-pathways.html
60. The Royal College of Pathologists. *Dataset for histopathological reporting of primary invasive cutaneous squamous cell carcinoma and regional lymph nodes*. Accessed July 2024. Available at: www.rcpath.org/profession/guidelines/cancer-datasets-and-tissue-pathways.html
61. Johnson R, Sviland L. Is extensive histological examination of wide excision specimens necessary following a diagnosis of melanoma. *Histopathology* 1998;32:379–380.
62. Martin HM, Birkin AJ, Theaker JM. Malignant melanoma re-excision specimens--how many blocks? *Histopathology* 1998;32:362–367.

63. Kirkham N. What is there to find in malignant melanoma re-excision specimens? *Histopathology* 1998;32:566–567.
64. The Royal College of Pathologists. *Dataset for histopathological reporting of primary cutaneous malignant melanoma and regional lymph nodes*. Accessed July 2024. Available at: www.rcpath.org/profession/guidelines/cancer-datasets-and-tissue-pathways.html
65. Taylor HW, Huang JK. 'Routine' pathological examination of the gallbladder is a futile exercise. *Br J Surg* 1998;85:208.
66. Langston C, Kaplan C, Macpherson T, Mancini E, Peevy K, Clark B *et al*. Practice guideline for examination of the placenta: Developed by the placental pathology practice guideline development task force of the college of american pathologists. *Arch Pathol Lab Med* 1997;121:449–476.
67. The Royal College of Pathologists. *Tissue pathways for histopathological examination of the placenta*. Accessed July 2024. Available at: www.rcpath.org/profession/guidelines/cancer-datasets-and-tissue-pathways.html
68. Kale SU, Mohite U, Rowlands D, Drake-Lee AB. Clinical and histopathological correlation of nasal polyps: Are there any surprises? *Clin Otolaryngol Allied Sci* 2001;26:321–323.