ORIGINAL ARTICLE

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

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Aims: To investigate the effect on the workload of a gastrointestinal pathology service of implementing the recommendations of the Royal College of Pathologists' (RCPath) working party on specimens of limited or no clinical value (LONCV).

Methods: All endoscopic gastrointestinal pathology reports for the first three months of 2001 at a large teaching hospital were reviewed against the RCPath recommendations. Specimens in the category of LONCV were recorded and the final histopathology diagnosis noted.

Results: The biopsies in the LONCV category were 30% of oesophageal, 61% of gastric, 0.5% of duodenal, and 7% of colorectal origin.

Conclusions: Implementing the RCPath recommendations would reduce the number of requests for the examination of gastrointestinal endoscopic specimens by 3500 specimens each year in this department. None of the specimens in the LONCV category showed an abnormality that could not have been detected by a more efficient and less invasive method. In the UK, where there is a severe shortage of trained histopathologists, the implementation of these recommendations would ensure that these scarce resources are not misused.

Histopathology, like other laboratory medicine specialties,[1 2] has been a demand led specialty responding to the work sent for examination.[3] This has led to many imbalances between demand and histopathology resources, with health care managers often making no extra provision for histopathology, despite appointing additional staff who generate histopathology work (for example, consultant gastroenterologists, endoscopy nurses, etc). At the same time, there has been an intrinsic increase in histopathology work because of the increased information that is included in reports,[4] often stimulated by minimum dataset guidelines from national pathology organisations.[5] In the UK, there has been an additional problem because there has been an imbalance between the number of trainees and the number of consultant post vacancies, so that at present 20% of consultant histopathologist posts in the UK are unfilled.

All these factors suggest that histopathologists should take a proactive role in the management of their workload. As part of its recovery plan for histopathology,[6] the Royal College of Pathologists (RCPath) in the UK has recently convened a working group to make an evidence based evaluation of investigations of doubtful usefulness, which make little or no contribution to patient care and welfare. This group has produced a report of its findings.[7] In this report there are many categories of gastrointestinal specimens that have been found to be of little or no clinical value, including oesophageal and gastric biopsies from endoscopically normal organs and gastric biopsies for the sole purpose of detecting *Helicobacter pylori*. Because gastrointestinal specimens constitute a large proportion of the workload in most histopathology departments, the application of these guidelines could result in significant workload reductions. This study makes a retrospective evaluation of the effect of applying these guidelines to the gastrointestinal pathology specimens received in a large department of histopathology.

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MATERIALS AND METHODS

All endoscopic gastrointestinal biopsies received in the first three months of 2001 by the department of histopathology at the Royal Hallamshire Hospital, Sheffield were reviewed. Biopsies referred from other centres for specialist review were excluded. Cases were divided according to anatomical site—that is, oesophageal, gastric, duodenal, or colorectal. For uniformity, the number of requests was recorded, rather than the number of patients or number of biopsies. This was because some cases had more than one request for each patient and some requests involved multiple biopsies grouped together in one pot as a single request. Requests were classified as either "valid" or "invalid" according to the working group's guidelines. Any significant abnormalities found in the invalid requests were noted. The number of requests where multiple random colonic biopsies were submitted in separate pots were counted. A separate tally was made of the number of requests that this figure could potentially be reduced to if following the working group's guidelines for such

Abbreviations: LONCV, specimens of limited or no clinical value; RCPath, Royal College of Pathologists

Table 1 Numbers of "valid" and "invalid" requests at each organ site

	Oesophageal		Gastric		Duodenal		Colonoscopic	
	N	%	N	%	N	%	N	%
Total requests	184		286		378		966	
Valid requests	127	69.0	108	37.8	364	96.3	891	92.2
Invalid requests	56	30.4	175	61.2	2	0.5	64	6.6
No clinical details given	1	0.6	3	1.0	13	3.2	11	1.1
Clinically relevant abnormalities in invalid requests	3		0		0		1	

Table 2 Categories of "invalid" requests in each organ site

Organ	Reason for invalidity	N
Oesophagus	Biopsy of normal oesophagus	3
	Biopsy for reflux oesophagitis without discrete lesion	50
	Biopsy for so called ultra short Barrett's oesophagus	3
	Total	56
Stomach	Biopsy of normal stomach	16
	Biopsy for *Helicobacter pylori*	68
	Biopsy for gastritis/intestinal metaplasia without a discrete lesion	91
	Total	175
Duodenum	Biopsy not related to the investigation of coeliac disease	2
	Total	2
Colorectum	Terminal ileum biopsy	26
	Normal scope, no diarrhoea	26
	Random rectal biopsy for rectal bleeding	12
	Total	64

biopsies to be submitted in two separate pots (left side and right side of the colon).

The guidelines gave no specific age limit for "the correct clinical setting" for biopsies of normal appearing colon in the investigation of persistent watery diarrhoea. Therefore, all requests matching these criteria (regardless of age) were deemed valid for the purposes of this review. Incidentally, most of these cases fell into the suggested range of "middle aged or elderly".

RESULTS

The results are summarised in tables 1 and 2.

Oesophageal biopsies

A review of these biopsies revealed a high proportion of invalid requests (30.4%), particularly of biopsies for reflux oesophagitis without a discrete lesion. Three clinically relevant abnormalities were reported in the 56 invalid requests. All three showed columnar lined lower oesophagus.

Gastric biopsies

A large proportion of these biopsies were classified as invalid (61.2%). Biopsies for *Helicobacter pylori* and biopsies of gastritis without a focal abnormality were the most frequent categories. No further clinically relevant abnormalities were found in the invalid requests.

Duodenum

Most of these requests were valid. Exclusion of, diagnosis of, and the follow up of coeliac disease were the main indications for duodenal biopsy.

Colonoscopic biopsies

A small proportion of these requests were invalid (6.6%). This proportion would have been slightly higher if a strictly defined cut off age for random colon biopsies for microscopic colitis was included in the review criteria. One clinically relevant abnormality was found in an invalid request. This was a finding of ulcerative colitis in random rectal biopsies for rectal bleeding. In total, 387 valid random colonic biopsies from different sites were submitted in the three months. If these were submitted collectively in right and left pots, as advised by the guidelines, this figure would be reduced to 184. This is a reduction in workload by 203 requests over three months.

DISCUSSION

These results show that a considerable proportion of the endoscopic gastrointestinal biopsies submitted for examination in a large teaching hospital fall into the category of specimens with limited or no clinical value (LONCV) as defined in the RCPath report.[7] They also show that very few clinically relevant abnormalities were found in the specimens that fell into that category. Three oesophageal specimens were reported as showing columnar lined lower oesophagus, but this diagnosis is dependent on biopsies being taken from above the anatomical gastro-oesophageal junction. We cannot exclude the possibility that these biopsies were taken from below the gastro-oesophageal junction or that they represented so called ultrashort segment Barrett's oesophagus, for which the RCPath report does not recommend histopathology examination. There was one case of ulcerative colitis diagnosed in a patient where the clinical details on the request form only recorded rectal bleeding. It is likely that the endoscopic appearances in this case were abnormal and it would therefore represent a valid biopsy.

> "It is a significant reduction and if this was extended across the UK, and to other categories of histopathology specimens, it would represent a significant reduction in workload, which would ease the current staffing crisis"

Take home messages

- By extrapolation of results, we calculate that implementing the recommendations of the Royal College of Pathologists would reduce the number of requests for the examination of gastrointestinal endoscopic specimens by 3500 specimens each year in our department
- None of the specimens in the specimens of limited or no clinical value category showed an abnormality that could not have been detected by a more efficient and less invasive method
- In the UK, where there is a severe shortage of trained histopathologists, the implementation of these recommendations would ensure that these scarce resources are not misused
- To achieve these reductions, a multidisciplinary dialogue needs to be opened between clinicians who use histopathology services, healthcare managers, and histopathologists and conflicting guidelines will need to be resolved

If all the invalid specimens had not been reported and the individual colonic biopsies combined into right and left sided pots then there would have been a reduction in specimen requests of 862 in the first three months of 2001. This extrapolates to a reduction of 3500 requests each year. It is difficult to express this in terms of whole time consultant histopathologists in a UK teaching hospital because the RCPath recommended workloads are for an overall mixed workload. The specimens in our study that would be eliminated by applying the recommendations of the Howat report are all of low complexity, so it would be incorrect to calculate that 3500 specimens equates to the workload of 1¾ whole time consultant histopathologists in a UK teaching hospital. However, it is still a significant reduction and if this was extended across the UK, and to other categories of histopathology specimens,[7–10] it would represent a significant reduction in workload, which would ease the current staffing crisis. There is a similar staffing crisis among biomedical scientists working in histopathology laboratories in the UK and the elimination of specimens of LONCV would also provide some alleviation of this.

This is a retrospective analysis which shows that significant reductions in histopathology workload can be achieved by applying the recommendations of the RCPath's working party on histopathology of limited or no clinical value. To achieve these reductions, a multidisciplinary dialogue needs to be opened between clinicians who use histopathology services, healthcare managers, and histopathologists. There will have to be some resolution of conflicting guidelines—for example, some gastroenterology guidelines recommend biopsy of the terminal ileum to "prove" complete colonoscopic examination, which conflicts with the RCPath's recommendations.[11–13] Nevertheless, there is considerable scope for a more proactive role for histopathologists in workload management.

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