

5. Quality Control in Histopathology

Compilation and editing of this volume:

Dr. Isha Prematilleke (Consultant Histopathologist)

List of contributors

Consultant Histopathologists

Dr. Sujeewa Rathnayake

Dr. Ruchira Fernando

Dr. A. Illeperuma

Coordinators

Consultant Histopathologists

Dr. Siromi Perera

Dr. Kamani Samarasinghe

Dr. Modini Jayawickrama

INDEX

CONTENT	PAGE NUMBER
5.1. The importance of quality control in Histopathology.....	92
5.2. Quality control in diagnosis.....	95
5.3. Quality control in technique.....	97
5.4. References.....	100

5.1 The importance of quality control in histopathology

Histopathology is the branch of pathology based on the examination of tissues obtained from a patient at surgery or autopsy. Histopathologists provide diagnostic expertise and advice for clinical colleagues, and work in clinical teams that care for patients.¹

Histopathologists need to work in partnership with clinical colleagues, hospital administrators, laboratory technical officers and support staff to provide the best possible histopathology standards and service.¹

Quality assurance is a management system designed to achieve an acceptable level of service. Quality control measures are the operational techniques and activities used to fulfill the requirements.²

The objective of a quality assurance programme in histopathology is to ensure the completeness, accuracy and timeliness of a histopathology report.

Completeness of a histopathology report requires that the information given in the report should not merely be the diagnosis, but should also include pathological features of prognostic and therapeutic importance.³ The use of datasets and national guidelines is a good way to ensure consistency of diagnostic criteria and standards.² This long-felt need has been fulfilled by

compilation of national guidelines and minimum datasets for the reporting of common malignancies by the College of Pathologists of Sri Lanka. This is being done under the auspices of the Health Sector Development Project for hospitals of the Uva and Southern provinces initiated by the Ministry of Health and funded by the World Bank.

Quality control in histopathology involves both external and internal components for improving the standards of technical work as well as of reporting. Both aspects have been addressed in this volume.

The College of Pathologists of Sri Lanka proposes a National Histopathology External Quality Assurance (EQA) scheme, where the College will appoint a central committee which will assess diagnostic and technical quality in histopathology.

Measures for internal quality assurance including audit, review of diagnosed cases, and proper documentation have also been outlined.

Timeliness of reports requires that individual laboratories maintain records regarding turnaround time of each case. This is the time taken from the date of receipt of the sample in the laboratory to the time the report has been signed out. If proper records are maintained the pathologist will then be able to identify the causes for delay in turnaround time in his or her laboratory.³

For further improvement of the quality of technical work involved in histopathology, and continuing education of technical staff, the College also recommends that workshops on technical quality for laboratory staff should be organized and conducted at regional level.

The importance of the need for introducing audit procedures and setting up quality assurance schemes based on their findings needs to be stressed in the postgraduate teaching programme.³ This volume will also serve to educate postgraduate trainees in pathology regarding the implementation of such a quality assurance scheme.

The quality control measures outlined below are meant to achieve acceptable standards in the handling of histopathology specimens, the technical aspects of slide preparation and staining, reporting and documentation justifying the need for these to be diligently adhered to in routine histopathological practice.

The detection of errors and error avoidance in histopathology depends upon individuals practicing to the highest standards by ensuring they are up-to-date and accountable for what they do.²

5.2 Quality Control in Diagnosis

5.2.1 External Quality Control measures

These include a National EQA scheme, review of selected cases by a panel of pathologists and referral of cases where necessary for a second opinion or other special tests.

External quality assurance (EQA) scheme (GRADE Y)

The central committee appointed by the College will annually issue a set of EQA slides to individual pathologists. These will be accompanied by relevant details regarding the cases. The pathologist will be given a reasonable period of time to review these cases, and a date by which the reports on these cases should be submitted to the central committee.

The committee will evaluate the results and issue a report to the pathologist as to their performance on the EQA scheme as compared with percentages of other pathologists at national level.

Review of randomly selected cases (GRADE Y)

As a method of obtaining the majority opinion on selected cases which would help the pathologist in further diagnostic work, pathologists should select approximately 1% of their reported cases annually for discussion with a regional panel of pathologists. These cases would be discussed on several aspects, including

majority opinion on the diagnosis, completeness of the histopathology report issued, and completeness and accuracy of documentation of these cases in the laboratory.

This would aid in assessing the accuracy of diagnosis, the inclusion of all pathological data of importance in diagnosis as well as for prognosis and treatment in the reports and assessing turnaround times of the laboratory.

Referral of slides for second opinion and special techniques (GRADE Y):

Where necessary, slides and blocks should be referred for a second opinion (i.e. to a centre dealing with a large number of such cases, or to pathologists with special training or interest in certain areas).

It may also be necessary in certain cases to refer blocks (with or without stained slides) for certain ancillary tests such as immunohistochemistry.

In all such situations, it should be the responsibility of the referring hospital authorities (and not the individual pathologist) to properly transport and safely handover these slides/blocks to the referral centre.

5.2.2 Internal quality control

Audit on cyto-histological diagnostic correlation (GRADE Y)

Audit is a useful method of reducing inaccuracies in reporting.² [An audit on correlation of cytology and histology of cases should be carried out annually by each laboratory.](#) Results of this audit should be documented in the laboratory.

5.3 Quality Control in Technique

5.3.1 External Quality Control

External quality assurance (EQA) scheme (GRADE Y)

[The central committee will annually send paraffin blocks of selected cases to each laboratory.](#) These will be accompanied by instructions on stains to be performed, and a date will be given by which the laboratory should submit stained slides (along with the remaining blocks) to the central committee.

The laboratory will be required to cut sections, perform haematoxylin and eosin stains as well as any special stains requested and mount and label slides.

The committee will assess the quality of cutting, staining and mounting of these slides and issue a report to the laboratories regarding their performance.

Depending on the results, the committee will issue a certificate to individual technicians taking part in this scheme.

Regional workshops on technical skills (GRADE Z)

Regional health authorities should consider the feasibility of conducting regional workshops for their laboratory technical officers to enhance their knowledge and technical skills.

5.3.2 Internal quality control:

Review of random samples (GRADE Y)

At every laboratory, it is recommended that the histopathologist in charge should [select cases randomly every 6 months, and review the slides](#) of each case.

Technical shortcomings in these cases should be discussed with the laboratory technical officers. The pathologist should recommend changes to overcome these problems.

Documentation in the laboratory

Maintenance of appropriate registers is of utmost importance in every laboratory. This will not only keep a record of the specimens received, but will also help the pathologist and laboratory staff to assess turnaround times of the laboratory and detect and rectify unnecessary delays.

These registers include

- iv. the specimen reception register, which includes the date of reception, patient details, type of specimen and laboratory identification number of the specimen **(GRADE X)**
- v. a record of the date of processing, date of forwarding slides to the pathologist, date of reporting, date of typing and date of issue of the report **(GRADE Y)**

5.4 References

9. Code of practice for histopathologists and histopathology services. Royal College of Pathologists, May 2005. Available at <http://www.rcpath.org/resources/pdf/G030-HistoCodeOfPrac-May05.pdf>
10. Du Boulay C. Error trapping and error avoidance in histopathology. In: Lowe DG, Underwood JCE editors. *Recent Advances in Histopathology 20*. London: The Royal Society of Medicine Press Limited; 2003. Chapter 7, p. 103-113
11. De Silva MVC, Hevawisenth SJ de S. Editorial: Quality assurance in histopathology. *The Journal of Diagnostic Pathology*. 2001 October; 2(1) : 1-2