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An audit on concordance rates between diagnoses of frozen and subsequent formalin fixed sections of the same sample in a tertiary care centre

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Introduction and objectives: Frozen sections are indicated to assess the nature, extent and margins of lesions intraoperatively. The accuracy of frozen section diagnosis is important in patient management as well as in quality assurance in surgical pathology. An audit on concordance between diagnoses of frozen and formalin-fixed sections helps to identify the rates and causes of diagnostic errors and recognize measures that can be taken to minimize errors. The objective of this study was to find the concordance rate of histological diagnosis between frozen and formalin-fixed sections of the same sample over the study period.

Methodology: This was a retrospective study of frozen sections received at the Department of Histopathology, at a tertiary care centre, from January 2020 to March 2022. Histopathology data were extracted from the archives.

Results: A total of 42 frozen sections were received for histological confirmation (23-sentinel node biopsies of breast carcinomas, 10 colonic biopsies to exclude Hirschsprung disease, 5 biopsies to confirm the presence of parathyroid tissue, 1-to confirm choroidal melanoma, 1-to exclude anaplastic carcinoma in suspected Riedel thyroiditis, 1-to exclude carcinoma in an oesophageal stricture). Overall concordance rate was 92.85% (n=39). Discordant rate was 2.4% (n=2). Both cases that showed discordance were sentinel-node biopsies reported as malignant on frozen sections that were benign in formalin-fixed sections. One aberrant diagnosis was made where granulomatous lymphadenitis was diagnosed in the formalin-fixed section of a sentinel lymph node sent to detect metastatic tumour deposits.

Discussion and conclusion: A concordance rate of 92.85 % shows that intraoperative frozen sections show high accuracy. Proper sampling and gross inspection by an experienced pathologist, better communication with the surgical team and re-evaluation by a second pathologist for uncertain cases are recommended to minimize the discordance rates. Periodic audits will assure quality and accurate service on frozen sections.

Keywords: frozen section, audit, concordance rate.

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