Short Review

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Audit Report: Evaluation of Diagnostic Accuracy and Completeness of Documentation in Frozen Sections of CNS Lesions: A Tertiary Care Center Audit.

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ABSTRACT

Objective: This audit aimed to evaluate the diagnostic accuracy and completeness of documentation in frozen section reporting of CNS lesions at a tertiary care center.
Methods: A retrospective analysis was conducted on 46 frozen section pathology reports from September 2023 to September 2024. Data were collected on the inclusion of critical documentation elements such as imaging findings, specimen receipt time, and informed diagnosis time. Diagnostic concordance between frozen section diagnoses and final histopathological diagnoses was also assessed.
Results: All reports included a unique patient identification number, while 38 (82.6%) documented imaging findings. Only 5 reports (10.9%) recorded the specimen receipt time, and 16 reports (34.8%) documented the informed diagnosis time. Diagnostic concordance was achieved in 40 cases (87%).
Conclusion: Although diagnostic accuracy was high, significant gaps were identified in documentation, particularly regarding specimen receipt and informed diagnosis times. Recommendations include adopting standardized documentation practices, improving communication with the neurosurgical team, and encouraging frequent use of frozen sections to enhance diagnostic accuracy and exposure for histopathologists.

INTRODUCTION

Frozen sections are a vital diagnostic tool in the intraoperative assessment of CNS lesions, allowing surgeons to make immediate decisions regarding tumor resection and patient management. In addition to diagnostic accuracy, comprehensive documentation of frozen section reports is essential for ensuring smooth communication between the surgical and pathology teams, and for medico-legal purposes. This audit aimed to assess the completeness of documentation in frozen section reporting of CNS lesions and the concordance between frozen section and final histopathological diagnoses. Additionally, it explores the collaboration between the neurosurgical and pathology teams to enhance diagnostic practices.

LITERATURE REVIEW

Role of Frozen Sections in CNS Lesions

Frozen sections provide real-time information critical for intraoperative decision-making in neurosurgery. Their use allows the surgeon to determine tumor margins, assess tumor type, and make decisions about further resection. Studies have shown frozen section diagnoses to have an accuracy rate of 94-97%, making them a reliable tool for CNS lesion diagnosis. However, diagnostic challenges remain in cases of low-grade tumors or inflammatory conditions, where intraoperative assessments may not always be definitive.

Documentation in Frozen Section Reporting

Accurate and complete documentation in pathology reports is not only a requirement for clinical communication but also has important medico-legal implications. Best practice guidelines recommend that frozen section reports should include the following elements:

- A unique patient identification number.
- Imaging findings.
- Specimen receipt time.
- The time the diagnosis was communicated to the surgical team.

Incomplete documentation can lead to miscommunication during surgeries and may result in legal complications. Previous audits have revealed a high rate of incomplete

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documentation, particularly concerning specimen receipt time and diagnosis communication.

Diagnostic Concordance

The comparison of frozen section diagnoses with final histopathological findings serves as a measure of diagnostic accuracy. While frozen sections for CNS lesions are highly accurate, discrepancies can occur in certain complex cases. Previous studies report concordance rates of 85-90%, with occasional discordance in challenging cases such as gliomas or mixed neoplastic/inflammatory lesions.

METHODOLOGY

- **Study Design:** A retrospective audit of frozen section reports of CNS lesions was performed at National Hospital Kandy.
- **Sample:** A total of 46 frozen section reports, generated between September 2023 and September 2024, were analyzed.
- **Data Collection:** Key documentation elements were reviewed in each report:
    - Unique identification number.
    - Imaging findings.
    - Specimen receipt time.
    - Informed time of the diagnosis.
    - In addition, frozen section diagnoses were compared to final histopathological diagnoses to evaluate diagnostic concordance.

RESULTS

1. **Unique Identification Number:** All 46 reports (100%) contained a unique patient identification number.
2. **Imaging Findings:** 38 reports (82.6%) included relevant imaging findings.
3. **Specimen Receipt Time:** Only 5 reports (10.9%) documented the time the specimen was received.
4. **Informed Time of the Diagnosis:** 16 reports (34.8%) documented the time the diagnosis was communicated to the surgical team.
5. **Diagnostic Concordance:** Concordance between frozen section diagnosis and final histopathological diagnosis was observed in 40 cases (87%), while 6 reports (13%) demonstrated discordance.

DISCUSSION

The results of this audit reveal strengths and areas for improvement in frozen section reporting for CNS lesions. While all reports included unique patient identification numbers, significant gaps were found in documenting specimen receipt and informed diagnosis times. Intraoperative communication and patient safety may be compromised if these essential details are omitted.

The diagnostic concordance rate of 87% is consistent with findings from similar studies, demonstrating the reliability of frozen sections in CNS lesion diagnosis. However, the discordant cases highlight the limitations of frozen sections in certain challenging or borderline lesion types.

Recommendations

Based on the findings of this audit, several recommendations are proposed to enhance both documentation and diagnostic processes:

1. **Adopt Standardized Reporting Templates:** Implement a standardized reporting template to ensure that all critical documentation elements, such as specimen receipt time and informed diagnosis time, are consistently recorded.
2. **Training and Awareness:** Provide training to pathologists and pathology staff on the importance of complete and accurate documentation, with a focus on improving the documentation of times for specimen receipt and diagnosis communication.
3. **Encourage Regular Use of Frozen Sections:** Work with the neurosurgical team to encourage the use of frozen sections whenever feasible, especially for CNS cases. Increased use will provide valuable diagnostic experience to histopathologists and enhance intraoperative decision-making.
4. **Improve Communication with the Neurosurgical Team:** Foster better collaboration with the neurosurgical team by:
    - Ensuring the frozen section diagnosis is mentioned when the specimen is sent for final histopathological analysis.
    - Regularly discussing the benefits of intraoperative frozen section diagnoses to improve surgical decision-making and outcomes.
5. **Review Frozen Section Diagnosis During Final Reporting:** Emphasize the importance of revising the frozen section diagnosis during final histology reporting to ensure accuracy and consistency between the intraoperative and final diagnoses.
6. **Re-audit:** After implementing the proposed changes, conduct a follow-up audit to assess improvements in documentation practices and the overall diagnostic process.

CONCLUSION

This audit highlights the high diagnostic accuracy of frozen section diagnoses for CNS lesions, with a concordance

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rate of 87%. However, there are significant deficiencies in documentation, particularly regarding specimen receipt time and informed diagnosis time. By adopting standardized documentation protocols, fostering better communication with the neurosurgical team, and encouraging the increased use of frozen sections, we can improve both the quality of reporting and patient outcomes.

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