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Cytologic-Histologic Correlation of Musculoskeletal Lesions

Dipakkumar Prajapati*

Department of Pathology and Microbiology, University of Nebraska Medical Center, Omaha, NE, USA

Abstract

An interdisciplinary, multistep technique is used to diagnose a suspicious soft tissue or bone tumour that includes the clinical picture and history, radiographic appearance, and morphological study of cytological or histological material. The diagnosis of bone and soft tissue neoplasms might be difficult for pathologists in practise. Both soft tissue and bone tumours are diverse collections of countable unique tumour entities. Sarcoma incidence is 4.7/100,000 year, making up about 1% of all human malignancies, while the vast majority of soft tissue and bone neoplasms are benign.

Keywords: Cytological • Morphological • Tissue • Bone neoplasms

Introduction

It is commonly accepted that a multimodal approach should be used to diagnose bone lesions, taking age, clinical history, radiography, and cytology/histopathology into account. Regarding radiology, while the specificity has remained low, the sensitivity in identifying bone lesions has significantly enhanced utilising contemporary imaging techniques. In fact, it is still commonly accepted that traditional radiography provides the highest level of specificity in the identification of bone abnormalities. To make a diagnosis, however, the majority of radiographic evaluations should be supplemented with microscopic examination of tissue samples. In general, a method based on the histology of open biopsy or core biopsy specimens is advised.

Clinical practise may reveal superficial soft-tissue masses, but a methodical approach may aid in establishing a conclusive diagnosis or differential diagnosis for soft tissue lesions. The cystic lesions are a heterogeneous category with a wide range of cytology, histology, and pathogenesis. The purpose of this study is to compare FNAC diagnosis with radiographic and histopathological diagnosis to examine the accuracy of FNAC diagnosis of various cystic lesions of soft tissue lesions. [1].

Description

The cytology-histology correlation (CHC) method compares the histopathology interpretation of specimens from the same site with the cytology interpretation in order to identify errors in the diagnostic process. As part of the laboratory quality control (QC) programme for the cytology laboratory, it evaluates the concordance and discrepancy of the interpretation, as required by CLIA 1998. It improves the precision and accuracy of cytology reports. It is a system-based process that is typically passive and retrospective in nature. CHC identifies errors and assesses their frequency, nature, and clinical consequences, including their severity.

The dichotomous assessment of RCA for discordant instances was done as sampling error and interpretation error. If the biopsy slide diagnostic material was unavailable or unrepresentative and the interpretation was correct, it was assumed that sampling mistake had occurred. If the diagnostic tools are present and representative in the biopsy slides but are not interpreted correctly, it was assumed that there had been an interpretation error. In particular for non-gynecology cases, the discordant cases were evaluated in terms of site/organ, time between cytology report and biopsy sample, change of diagnosis within the same category, or to a different category (between benign and malignant category). Every case pair was also examined for a stepwise discrepancy in the event of a diagnosis change. [2].

Both cytopathology and surgical pathology benefit greatly from the process of cytologic-histologic [3,4] correlation since it offers a plethora of information that can be used to enhance diagnostic testing and screening procedures. Because longer institutional participation was also related with higher sampling sensitivity, it appeared that improvement in preanalytic Papanicolaou (Pap) test sampling was the primary factor driving overall improvement in this study. The authors proposed that the advent of liquid-based technology, which was used in numerous laboratories during the study period, may have enhanced Pap test sampling. Institutions can determine which projects are successful or unsuccessful by performing continuous data tracking and retrospective root cause analysis to find factors that may have influenced any observed changes in performance indicators.

Medical errors are present at all levels of healthcare, according to the IOM report To Err Is Human. The majority of human errors, according to patient safety researchers, are caused by flawed systems; medical errors typically result from active events occurring in a system with latent conditions that induce active failures. An example of an active error is when a surgeon amputates the incorrect

***Address for Correspondence:** Dipakkumar Prajapati, Department of Pathology and Microbiology, University of Nebraska Medical Center, Omaha, NE, USA, E-mail: dipakkumarprajapati@gmail.com*

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leg. Lack of required time-out checks to prevent an error may be one of the latent factors causing this issue [5].

Conclusion

Both cytopathology and surgical pathology benefit greatly from the process of cytologic-histologic correlation since it offers a plethora of information that can be used to enhance diagnostic testing and screening procedures. Because longer institutional participation was also related with higher sampling sensitivity, it appeared that improvement in preanalytic Papanicolaou (Pap) test sampling was the primary factor driving overall improvement in this study. The authors proposed that the advent of liquid-based technology, which was used in numerous laboratories during the study period, may have enhanced Pap test sampling. Institutions can determine which projects are successful or unsuccessful by performing continuous data tracking and retrospective root cause analysis to find factors that may have influenced any observed changes in performance indicators..

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Conflict of Interest

There are no conflicts of interest by author.

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