

Diagnostic Pitfalls In Anatomic Pathology

Thesis

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Summary

Errors in surgical pathology occur at a low rate. They range from those having no or minimal impact on patient care to those causing great harm to patient care up to death.

Our aim was reviewing the literature to discuss why errors occur in surgical pathology diagnosis, the common pitfalls in various systems and the suggested strategies to eliminate or minimize these errors.

In our retrospective study, we studied the consultation cases referred to our pathology departments at Ain Shams university hospitals over a ten- year period (2001-2010) in order to assess the error rate in pathology practice.

Consultation cases were 477 (0.58%) from which 167 (35%) were excluded from the study mainly due to unavailable initial diagnosis. So the final number of consultation cases analyzed in this work was 310 (65%).

The results were much higher than other studies discussing the same issue. Total diagnostic disagreement was demonstrated in 125 cases (40.3%) and clinically significant disagreement in 75 cases (24.2% of all cases reviewed). The frequency of total disagreement (12 of 23, 52.2%) and clinically significant disagreement (7 of 23, 30.4%) was higher in cytopathology cases than that noted in all other surgical

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List of Contents

Introduction	1
Aim of the Work	3
Review of Literature:	
▪ Chapter (1): Errors in surgical pathology diagnosis	4
▪ Chapter (2): Second Opinion In Surgical Pathology	26
▪ Chapter (3): Common Pitfalls in Surgical Pathology	32
▪ Chapter(4): Medicolegal aspects in surgical pathology	78
▪ Chapter (5): Quality assurance in the practice of anatomic pathology	90
Material and Methods	102
Results	106
Discussion	127
Conclusion & Recommendations.....	135
Summary	136
References	138
Arabic Summary	—

List of Figures

Figure	Title	Page
1	<i>Error Types and Test Cycle Phases</i>	17
2	<i>Distribution of Consultation Cases Included in the Study</i>	106
3	<i>Total and Major Diagnostic Disagreement in Various Organ System Cases</i>	108

List of Tables

Table	Title	Page
(1)	<i>Benign, Usually Indolent Oral Lesions that may Resemble Aggressive Processes them ...</i>	64
(2)	<i>Quality Assurance Monitors That May be Implemented Listed by the Phases of the Test Cycle</i>	99
(3)	<i>Total, Major and Minor Diagnostic Disagreement in Various Organ System Cases</i>	107
(4)	<i>Categories of Minor Disagreements in Various Organ Systems</i>	109
(5)	<i>Categories of Major Disagreements in Various Organ Systems</i>	110
(6)	<i>Distribution of the 19 Diagnostic Disagreements in the Lymph Node Cases</i>	112
(7)	<i>Distribution of the 25 Diagnostic Disagreements in the Respiratory System Cases</i>	114
(8)	<i>Distribution of the 17 Diagnostic Disagreements in the Digestive system Cases</i>	116
(9)	<i>Distribution of the 9 Diagnostic Disagreements in Female Genital System (FGS) Cases</i>	118
(10)	<i>Distribution of the 12 Diagnostic Disagreements in Bone Cases</i>	119
(11)	<i>Distribution of the 12 Diagnostic</i>	

	<i>Disagreements in Cytology Cases</i>	121
(12)	<i>Distribution of the 8 Diagnostic Disagreements in Central Nervous System (CNS) Cases</i>	122
(13)	<i>Distribution of the 8 Diagnostic Disagreements in Soft Tissue Cases</i>	123
(14)	<i>Distribution of the 4 Diagnostic Disagreements in Urogenital system Cases ...</i>	124
(15)	<i>Distribution of the 5 Diagnostic Disagreements in Mediastinum and Peritoneum Cases</i>	125
(16)	<i>Distribution of the 6 Diagnostic Disagreements in Endocrine system Cases</i>	126
(17)	<i>Comparison of the Present Study with Previous Studies</i>	131

Abbreviations

AL	Atypical Lipoma
ALCL	Anaplastic large-cell lymphoma
ALH	Atypical Lobular Hyperplasia
ALK	Anaplastic Lymphoma Kinase
ADH	Atypical Ductal Hyperplasia
BAL	Broncho Alveolar Lavage
BCL	B Cell Lymphoma
BL	Burkitt lymphoma
CA 125	Cancer Antigen 125
CAP	College of American Pathologists
CCE	Clear Cell Ependymoma
CD	Cluster of Differentiation
CHL	Classical Hodgkin's Lymphoma
CK	Cytokeratin
CNS	Central Nervous System
CSL	Complex Sclerosing Lesion
CT	Computed Tomography
DCIS	Ductal Carcinoma In Situ
DLBCL	Diffuse Large B Cell Lymphoma
DMM	Desmoplastic Malignant Melanoma
DNT	Dysembryoplastic Neuroepithelial Tumor

DOG1 Discovered On GIST 1
e.g Exempli gratia
EBV Epstein-Barr virus
EMA Epithelial Membrane Antigen
Etc Et cetera
FA Fibroadenoma
FH Fibrous Histiocytoma
FNA Fine Needle Aspiration
FNAC Fine Needle Aspiration Cytology
FS Frozen Section
GBM Glioblastoma Multiforme
GIST Gastrointestinal Stromal Tumor
gp100 glycoprotein 100
H&E Hematoxylin and Eosin
HL Hodgkin lymphoma
HPF High Power Field
i.e. id est
Ig Immunoglobulin
IHC Immunohistochemistry
IMN Infectious Mononucleosis
IPCs Interinstitutional pathology consultations
LCIS Lobular Carcinoma In Situ
LGFMS Low Grade Fibromyxoid Sarcoma

LLH..... Lipoma-like Hibernoma

MA Malpractice Action

MDs..... Medical Doctorates

MFH..... Malignant Fibrous Histiocytoma

MGA Microglandular Adenosis

MM Medical Malpractice

MS..... Multiple Sclerosis

NC Neurocytoma

NCI..... National Cancer Institut

No Number of

NK cells..... Natural Killer cells

NLPHL Nodular Lymphocyte-Predominant Hodgkin's Lymphoma

NMM..... Nevoid Malignant Melanoma

PT..... Phylloides Tumor

PXA..... Pleomorphic Xanthoastrocytoma

QA..... Quality Assurance

QI Quality Improvement

RFH..... Reactive Follicular Hyperplasia

RS cells..... Reed Sternberg cells

RSL Radial Sclerosing Lesion

RVU's..... Relative Value Units

SA..... Sclerosing Adenosis

SCL Spindle Cell Lipoma

SFT..... Solitary Fibrous Tumor
SPTL Subcutaneous Panniculitis-like T-cell lymphoma
TAT..... Turnaround Time
TCRBCL... T-Cell Rich B-Cell Lymphoma
UK..... United Kingdom
US..... United States
USA United States of America
UEH Usual Epithelial Hyperplasia
vs Versus
VSTP..... Virtual Slide Telepathology
VSTP-QA.. Virtual Slide Telepathology-Quality Assurance
WDLS Well Differentiated Liposarcoma
WHO World Health Organization
WT-1 Wilm's Tumor 1

Introduction

In recent years there has been an increasing awareness of patient safety issues in medicine **(Frable, 2006)**. Diagnostic accuracy is crucial in anatomic pathology, including surgical pathology and cytopathology, and remains a subject of considerable research interest **(Renshaw & Gould, 2006)**.

The clinically significant diagnostic error rate in surgical pathology reported in the literature varies from 0.26% to 1.2% **(Safrin & Bark, 1993 and Renshaw et al., 2003)**

There are many ways to define error in surgical pathology, including cognitive versus operational error, clinically significant versus academic errors (differences in classification, nomenclature, grading) **(Renshaw, 2001)**.

From the medicolegal aspect of view, error is defined as patient injury resulting from medical negligence. Negligence is defined as medical practice that falls below the standard of care **(Troxel, 2006)**.

In order to eliminate errors, there must be a good understanding of how and why errors occur in surgical pathology **(Nakhleh, 2008)**.

Nakhleeh (2008) reported that the most important reasons of errors in surgical pathology are:1) Misleading or

Introduction and Aim of the Work

incomplete clinical information,2)Complexity; surgical pathology has numerous steps in receiving, processing and reporting a specimen,3)Inconsistency in the level of training,4)Human intervention; humans do poorly at routine repetitive tasks, since they are susceptible to distraction,5)Time constraints; batch work and deadlines may force individuals to work in a hurried mode.

Recently, some strategies have been used to prevent errors in surgical pathology (**Zarbo et al., 2005**).