

ORIGINAL ARTICLE

Christening the Anatomic Pathology Service in Nigeria: A Follow Up

Innocent Emmanuel¹, Chidi Okorie Onwuka², Chikwendu Amaike³, Philip Ojile Akpa¹, Patrick Chim Nzekwe⁴, Olaleke Oluwasegun Folaranmi⁵, Dauda Eneyamire Suleiman⁶, Nansok Fadok Titus⁷, Bankole Kofi Adedeji⁸, Obiora Jude Uchendu⁹, Abdullahi Muhammad Ahmad¹⁰, Abdulazis Saleh Longwap¹¹, Ibrahim Bawa Abubakar¹², Umar Mohammed¹³

¹Department of Anatomic Pathology and Forensic Medicine, Jos University Teaching Hospital/Department of Pathology University of Jos, Nigeria.

²Department of Histopathology, University of Uyo Teaching Hospital, Nigeria.

³Department of Community Medicine, School of Clinical Sciences, Benjamin Carson (Senior) College of Health and Medical Sciences, Babcock University, Ilishan-Remo, Ogun State, Nigeria.

⁴Department of Anatomic Pathology, Asaba Specialist Hospital, Asaba, Nigeria.

⁵Department of Anatomic Pathology, University of Ilorin Teaching Hospital, Nigeria.

⁶Department of Histopathology, College of Medical Sciences, Abubakar Tafawa Balewa University, Bauchi, Nigeria.

⁷Department of Histopathology, Federal Medical Centre, Jalingo, Nigeria.

⁸Department of Histopathology, Federal University of Health Sciences Otukpo/Teaching Hospital Otupko, Nigeria.

⁹Department of Morbid Anatomy and Histopathology, Delta State University, Abraka, Nigeria.

¹⁰Department of Pathology, Aminu Kano Teaching Hospital, Kano, Nigeria.

¹¹Department of Chemical Pathology, University of Jos, Nigeria.

¹²Department of Chemical Pathology, College of Medical Sciences, Abubakar Tafawa Balewa University, Bauchi, Nigeria.

¹³Department of Morbid Anatomy and Forensic Medicine, Sokoto/Department of Histopathology Usmanu Danfodiyo University Teaching Hospital Sokoto, Nigeria.

Corresponding author:

Dr. Innocent Emmanuel,
Department of Anatomic Pathology and Forensic Medicine,
Jos University Teaching Hospital/Department of Pathology
University of Jos, Jos Nigeria. Email:
kinapele58@yahoo.com Phone number: +2348085386111.

Keywords: Nomenclature, Name, Histopathology, Morbid Anatomy, Anatomic Pathology, Clinical Pathology.

This article is available online at: <http://www.mjz.co.zm>, <http://ajol.info/index.php/mjz>, doi: <https://doi.org/10.55320/mjz.52.2.560>

The Medical Journal of Zambia, ISSN 0047-651X, is published by the Zambia Medical Association

© This is an Open Access article distributed under the terms of the Creative Commons Attribution License (<http://creativecommons.org/licenses/by/4.0>), which permits unrestricted use, distribution, and reproduction in any medium, provided the original work is properly cited.



ABSTRACT

Background: The names that have been used for a system offering histopathology, cytopathology, and autopsy services vary and include anatomic pathology, histopathology, morbid anatomy, and pathology. In 2016, we recommended the label 'Anatomic Pathology' as the most appropriate name. This study aims to review the impact of our advocacy on the nomenclature of the discipline of anatomic pathology in government tertiary institutions across Nigeria from 2016 to 2024.

Methodology: In June 2024, we collated the names given to the pathology departments that undertake the services of histology, cytology, and autopsy as was done in 2016. The data was analysed using the IBM SPSS (International Business Machines Corporation, Statistical Product and Service Solutions) version 2022. The data obtained in 2024 was compared with that of 2016 using chi square test.

Results: Histopathology was the terminology used by the highest number of institutions in both 2016 (13; 40.6%) and 2024 (31; 50.0%). The most improved nomenclature was Anatomic Pathology, growing from 5(15.6%) to 19(30.6%) institutions respectively in 2016 and 2024. Anatomic Pathology was the least favoured nomenclature in 2016 and the second most favoured in 2024. There was however no statistical significance of this change in the use of this terminology across geopolitical regions (anatomic pathology $p = 0.734$, histopathology $p = 0.503$, morbid anatomy $p = 0.545$, and pathology $p = 0.686$) or the years under study ($p = 0.078$).

Conclusion: The advocacy for the use of 'Anatomic Pathology' as the proper term for the laboratories offering cytopathology, histopathology, and autopsy is a step in the right direction. This designation in addition to being representative offers an expansion room for accommodating the ever-dynamic field of surgical pathology in tandem with advancements in the modern era.

INTRODUCTION

In literal terms, 'Pathology' means the study of suffering and is defined as the study of disease.¹ As a discipline, it is broadly divided into two: clinical pathology and anatomic pathology.² Clinical pathology studies blood, other body fluids and their constituents (chemicals and cells), and the detection of microorganisms.^{2,3} The entities under clinical pathology therefore include chemical pathology (clinical chemistry), medical microbiology, and haematology (and blood transfusion). Anatomic pathology is a wide discipline that is dedicated to the diagnosis of diseases in tissues/organs, including the prognostication of diseases and the monitoring of treatment.^{4,7} The services of anatomic pathology include histopathology, cytopathology, autopsy, and molecular studies.

The nomenclatures used for a system offering anatomic pathology services vary and include: anatomic pathology, histopathology, morbid anatomy, and pathology.⁸ In 2016, we undertook a study and reported diverse names used for departments, divisions, or units delivering the services of histopathology, cytopathology, and autopsy, and concluded that "anatomic pathology" is the label that comes closest to perfection.⁸ We then recommended this name to all existing hospitals, prospective facilities, and academic bodies, offering the services or certification covered by this discipline of pathology in Nigeria and beyond.⁸ This study aims to review the impact of our advocacy on the nomenclature of the discipline of anatomic pathology in government tertiary institutions across Nigeria from 2016 to 2024.

METHODOLOGY

Getting started, we made advocacy for the name "Anatomic Pathology" as the ideal for the establishments offering the services of histopathology, cytopathology, and autopsy. We did this through social media platforms accessible to all doctors, and specifically anatomic pathologists across Nigeria. Furthermore, we made overtures and engagements with pathologists and canvassed for

the label of Anatomic Pathology. These we did from 2016 to June 2024, through discussions and sharing of the document we published in 2016.⁸

In June 2024, we collated the names given to the pathology department that undertake the services of histology, cytology, and autopsy. Like 2016, the names were gotten through phone calls and internet searches for hospitals across the country. The information from phone calls and the internet served to improve accuracy. All government-owned secondary and tertiary hospitals were included in the study. Government-owned secondary and tertiary hospitals where the service of anatomic pathology was not provided and non-governmental secondary and tertiary institutions where this service is offered were excluded. Also excluded were the additional/ancillary services such as molecular pathology or forensic medicine: only the lead name of either anatomic pathology, histopathology, morbid anatomy or pathology were considered. From the foregoing, this study adopted the “total sampling technique” focusing on a population of hospitals (and including all members of the population) that offer the services of histology, cytology, and autopsy. Errors or biases were minimized or eliminated by the mobilization of the authors of this manuscript to include at least one individual (in some two to four) per the six geopolitical regions of Nigeria (each geopolitical region comprises of five to seven States of the Nigerian Federation), yet from different States within a region. These carefully selected authors from across Nigeria serve to cross-check the data received from their respective regions (North-East, North-West, North-Centra, South-East, South-West, and South-South Nigeria). Since the required information and obtained data thereof on the nomenclature of the anatomic pathology department/units were freely available in the public domain (signboards, letter headed paper and online), thereby posing no (or minimal) risk to individuals or organizations, no ethical approval was obtained. The Data obtained in 2024 was compared with that of 2016, analysed using the IBM SPSS

(International Business Machines Corporation, Statistical Product and Service Solutions) version 2022, and presented in tables as frequencies and percentages. Chi square test was done to determine the relationship between the findings in 2016 and 2024. At 95% confidence interval, a p-value of less than 0.05 was statistically significant.

RESULTS

The number of institutions collectively offering cytopathology, histopathology, and autopsy services in 2024 were 62; compared to 32 reported in 2016. This represents a 51.6% increase in the number of centres offering this service (table 1).

In 2016, the geopolitical region with the most institutions was the North-Central region with 8 (25%), while in 2024 it was the South-West with 12(19.4%). The most improved region in the number of institutions was the North-East which improved from 3(9.4%) in 2016 to 11(17.7%) institutions in 2024 (table 1).

'Histopathology' was the terminology used by the highest number of institutions in both 2016 (13; 40.6%) and 2024 (31; 50.0%). The most improved nomenclature was Anatomic Pathology, growing from 5(15.6%) to 19(30.6%) institutions respectively in 2016 and 2024. Anatomic Pathology was the least favoured nomenclature in 2016 and the second most favoured in 2024. Table 1. There was however no statistical significance of this change in the use of this nomenclature across the geopolitical regions (anatomic pathology $p = 0.734$, histopathology $p = 0.503$, morbid anatomy $p = 0.545$, and pathology $p = 0.686$) or the years under study ($p = 0.078$), Tables 2a and 2b.

Table 1. Distribution of nomenclature of surgical pathology departments in 2016 and 2024 according to geopolitical region.

Region	Name of Department/Division/Unit									
	Anatomic Pathology		Histopathology		Morbid Anatomy		Pathology		Total	
	2016	2024	2016	2024	2016	2024	2016	2024	2016(%)	2024(%)
North-East	0	1	3	10	0	0	0	0	3(9.38)	11(17.74)
North-West	0	2	2	3	0	0	2	2	4(12.50)	7(11.29)
North-Central	0	3	5	7	2	0	1	0	8(25.00)	10(16.13)
South-East	1	4	1	5	2	2	1	0	5(15.63)	11(17.74)
South-West	2	3	0	4	2	3	2	2	6(18.75)	12(19.35)
South-South	2	6	2	2	1	1	1	2	6(18.75)	11(17.74)
Total (%)	5(15.66)	19(30.65)	13(40.63)	31(50.00)	7(21.88)	6(9.68)	7(21.88)	6(9.68)	32(100.00)	62(100.00)

Table 2a. Statistical association nomenclature of surgical pathology departments in 2016 and 2024 according to geopolitical region.

Regions	Years of study		X ²	P-value
	2016	2024		
	Name of Department/Division/Unit			
	Frequency (%)	Frequency (%)		
	Anatomic Pathology			
North-East	0 (0.0)	1 (100.0)	2.779	0.734
North-West	0 (0.0)	2 (100.0)		
North-Central	0 (0.0)	3 (100.0)		
South-East	1 (20.0)	4 (80.0)		
South-West	2 (40.0)	3 (60.0)		
South-South	2 (33.3)	6 (66.7)		

	Histopathology			
North-East	3 (27.1)	10 (76.9)	4.330	0.503
North-West	2 (40.0)	3 (60.0)		
North-Central	5 (41.7)	7 (58.3)		
South-East	1 (16.7)	5 (83.3)		
South-West	0 (0.0)	4 (100.0)		
South-South	2 (50.0)	2 (50.0)		
	Morbid Anatomy			
North-East	0 (0.0)	0 (0.0)	2.136	0.545
North-West	0 (0.0)	0 (0.0)		
North-Central	2 (100.0)	0 (0.0)		
South-East	2 (50.0)	2 (50.0)		
South-West	2 (40.0)	3 (60.0)		
South-South	1 (50.0)	1 (50.0)		
	Pathology			

Table 2b. Statistical association between nomenclature of surgical pathology departments in 2016 and 2024 according to geopolitical region.

Name of Department/Division/Unit	Year of study		X ²	P-value
	2016 [no(%)]	2024 [no(%)]		
Anatomic Pathology	5(20.83)	19(79.17)	6.803	0.078
Histopathology	13(29.55)	31(70.45)		
Morbid Anatomy	7(53.85)	6(46.15)		
Pathology	7(53.85)	6(46.15)		

DISCUSSION

“A good name is rather chosen than great riches and loving favour rather than silver or gold.”⁹ A name gives one identity, inspiration, courage, strength, vision and an ability to see far into the future from the beginning.¹⁰ Jumbo et al in 2020 found out that names of Departments in pathology laboratories with poorly defined designations are a source of bitter conflicts in the Nigerian health system amongst professionals.¹⁰

In 2016, we recommended the use of the name Anatomic Pathology to all institutions offering cytopathology, histopathology, and autopsy pathology services.⁸ This brand is all-encompassing as it embraces all specific services and novel evolving practices, a limitation inherent in other nomenclature (Pathology, Morbid Anatomy, and Histopathology) of this discipline. Eight years on (2024, this study) since our 2016 report, the advocacy for the adoption of Anatomic Pathology has yielded some fruits with an improved proportion of institutions adopting this name. However, with the name Histopathology still blazing in the lead as the preferred label, the recorded change was not statistically significant.

It is a cliché that "the only constant thing is change." Indeed, change in the right direction is desirable. Lukan et al, in 2022 concluded that great times are ahead for the surgical pathology profession with

expected significant changes in the foreseeable future. They opined that anatomic pathologist do not like change, being fearful and defiant when pressed to adopt change in the pattern of their practice.¹¹ This is likely responsible for the statistically insignificant change seen over time up to the time of this follow-up study.

In 2010, Humphrey observed that although the basic foundational tool of histopathology involving the gross examination of tissues, staining with the routine stain Haematoxylin and Eosin, and light microscopy for diagnosis has remained unchanged, a staggering torrent of ancillary investigations have greeted anatomic pathology in the modern era.¹² These includes, immunohistochemistry, cytogenetics, flow cytometry, microbial analysis, DNA and RNA sequencing, and yet artificial intelligence emerging as a new front.^{13,14} These sophisticated techniques and technologies have empirically improved diagnostic speed and accuracy toward better patient outcomes and widened the scope of research for the greater good of the practice and humanity.⁵ These modern additions to Anatomic Pathology for example, "molecular medicine" are added to the names of some Anatomic Pathology facilities in Nigeria. Indeed, the increasing new landmarks in diagnostic methods will continue to reflect in the nomenclature of surgical pathology (perhaps as suffixes), but the name Anatomic Pathology is timeless.

Histopathology as a name for a department/unit is the most preferred label in Nigeria, perhaps a homage paid to the colonial masters, the Briton who initiated the practice in Nigeria.⁸ The terminology is limited by the fact that it is a subset of anatomic pathology as it fails to fully account for postmortem examinations and other services so offered by these departments. Morbid Anatomy as a name portrays 'death'. However, and evidently, Anatomic Pathology attends to the living and the dead, ultimately a discipline aimed at advancing the course of the living. Finally, the name "Pathology" is a broad and general designation for both Clinical Pathology and Anatomic Pathology. Therefore, such a designation is too big for any branch or subunit of pathology.

CONCLUSION

To conclude, the advocacy for the use of Anatomic Pathology nomenclature for the entity offering cytopathology, histopathology and autopsy is a step in the right direction. The resulting change of nomenclature by institutions to this proposed label indicates that the future offers promise in this regard. This designation of Anatomic Pathology in addition to being representative offers an expansion room for accommodating the ever-dynamic field of surgical pathology in tandem with advancements in modern technology.

Financial support and sponsorship

There was no external funding of this research.

Conflicts of interest

There are no conflicts of interest.

Authors Contribution

IE developed the concept and initial draft. All authors contributed the data, manuscript review and editing as well as critical review of final draft. CA analysed data. All authors read and approved the final manuscript up to submission.

Running Title

Nomenclature of anatomic pathology.

REFERENCES

1. Anatomic Pathology. J Mol Path Biochem. [Internet]. [cited 2024 May 6]. Available from: <https://www.longdom.org/scholarly/anatomical-pathology-journals-articles-ppts-list-1578.html>
2. Wallace DW. What is anatomic pathology? A UCLA doctor explains. David Geffen School of Medicine. [Internet]. [cited 2024 May 6]. Available from: <https://medschool.ucla.edu/blog-post/what-is-anatomic-pathology>
3. Kumar V, Roy S, Barman D, Paul L, Kumar K. Clinical pathology and its potential application in disease diagnosis. *Int J Agric Sci*. 2013;3(9):5-15.
4. Trent RJ. Complex genetic traits. In: Molecular medicine: An introductory text. 3rd ed. London: Academic Press; 2005.
5. Morgagni GB. Founders of modern medicine: Giovanni Battista Morgagni (1682-1771). *Med Lib Hist J*. 1903;1(4):270-7. ISSN: 0898-1868. PMC: 1698114. PMID: 18340813.
6. Clinical pathology overview. Health Encyclopedia. University of Rochester Medical Center. [Internet]. [cited 2024 Jan 23]. Available from: www.urmc.rochester.edu
7. Idowu BM, Obafunwa JO. History of histopathology (anatomical pathology) in Nigeria—Models, mentors, memories, and milestones. [Internet]. 2022 Mar. doi:10.5281/zenodo.6372816. Available from: <https://zenodo.org/record/6372816>
8. Emmanuel I, Onwuka CO, Daniel Y. Appropriate name for the anatomic pathology department in Nigerian health institutions. *Ann Trop Pathol*. 2016;7(2):135-7.
9. Proverbs 22:6. The Holy Bible, English Standard Version®. Wheaton (IL): Crossway Bibles; 2001.
10. Jombo G, Odimayo M, Adaja T, Onoja A, Ojo B. Giving correct names to disciplines in pathology in the 21st century: A review of working

- environments among pathologists across Nigeria. *West J Med Biomed Sci.* 2020;1(1):35-42. Available from: <https://wjmb.com.ng/index.php/wjmb/article/view/4>
11. Lujan G, Li Z, Parwani AV. Challenges in implementing a digital pathology workflow in surgical pathology. *Hum Pathol Rep.* 2022;29:300673. doi:10.1016/j.hpr.2022.300673.
12. Humphrey AP. Diagnostic anatomic pathology in the era of molecular medicine. *Mo Med.* 2010;107(2):76-7.
13. Anatomic Pathology. Duke University School of Medicine. [Internet]. [cited 2024 May 6]. Available from: <https://pathology.duke.edu/divisions/anatomic-pathology>
14. Chew EJC, Tan PH. Evolutionary changes in pathology and our understanding of disease. *Pathobiology.* 2023;90(3):209-18. doi:10.1159/000526024.
15. Melt M. The role of anatomic pathology in improving patient outcomes. *J Mol Pathol Biochem.* 2023;4(1):1000134. doi:10.35248/jmpb.23.4.134.