Developing Telepathology Program in Promoting Cervical Cancer Research and Training in Nigeria

Olugbenga Akindele Silas[1], M.D., Fatimah Abdulkareem[2], M.D., Jorge Novo[3], M.D., Demirkan Gursel[3], Ph.D., Robert Murphy[3]M.D., Lifang Hou[3], M.D. Ph.D., Jian-Jun Wei[3], M.D *1.Jos University, Nigeria2.College of Medicine of the University of Lagos, Nigeria 3.Northwestern University, U.S.*

Collaborating institutions

What is the problem?

Cervical cancer is one of the AIDS defining malignancies. This project focuses on identifying markers specific to HIV-associated cervical dysplasia and invasive cervical cancer by comparing cervical women (with or without HIV-infection) with cervical cancer-free HIV-infected women in one of the most populous nations in Africa. This program screens and collects cervical cancer tissues of women from multiple geographic regions with variable HIV and HPV prevalence

What are some previous approaches?

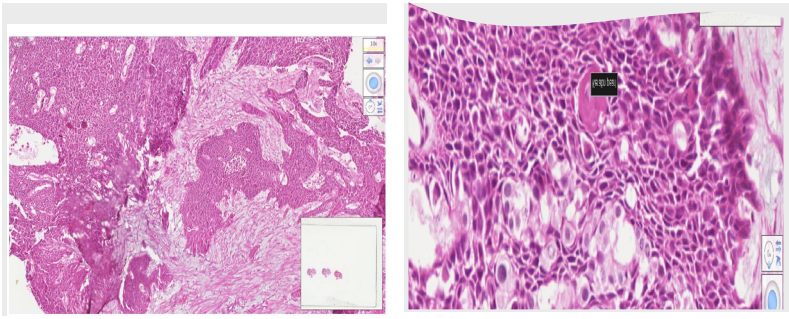
The COVID-19 outbreak has meant that we adopt new approaches or methods to the review of histological slides for the diagnosis. Traditional method of histological slides review under light microscope although still vital to the practice of pathology is fast being replaced by Telepathology.

What is our approach now?

To accomplish this study we employed a web-based network in which all traditional histology evaluation of cancer under microscope was replaced by digital slide review.

How does our approach work?

A web-based digital image storage system was established which allows for sharing and synchronizing digital images remotely from the three different institutions.
Approximately 200 of the 400 proposed cases of cervical cancer for this study have been recruited for the U54 study from both JUTH and LUTH.
Telepathology provides an exceptional resource-efficient tool for research, education and training of local students and medical professional staff.



What did we Learn?

Cervical cancer samples processed and digitalized can easily be viewed and assessed from the three collaborating institutions thus overcoming the challenge of tissue transportation to the US. We demonstrated that telepathology has broad applications in medical diagnosis, research and education.

Where are we going?

Apart from the need for well trained technicians and pathologists, telepathology also requires components such as scanner, cloud, computer, constant power source and digital storage devices which are considered costly in most developing countries.

Conclusion

- Telepathology provides an exceptional resource-efficient tool for research, education and training of local students and medical professional staff.
- We recommend the optimization of the current system in promoting the current U54 study and other similar multi-institutional collaborative studies in future.
- Adoption of this system by institutions in resource-limited regions will enhance the capacity and efficiency of pathology services in these regions