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Turn cytopathology's crisis into opportunity

Cytopathology is a profession created to implement Pap smear as a screening tool for cervical cancer prevention with great success. However, DNA test is much more sensitive in detecting HPV infection, a necessary factor in the pathologic process which may lead to cervical cancer development. The trend of detecting HPV infection as a surrogate indicator for cervical cancer risk assessment has been set. Pap smear cytopathology will continue to be used but probably as a gateway check to colposcopic biopsies rather than a primary screen test for its higher specificity in predicting CIN2/CIN3 lesions than HPV tests. The recent loss of test volumes has caused a feeling of uncertainty for the future among the cytopathology professionals. The author proposes that the practicing cytopathologists turn this crisis into an opportunity by getting actively involved in helping the community hospitals to create their own molecular diagnostic laboratories to perform Sanger sequencing-based molecular tests for various infectious diseases including the HPV, gonorrhoea, chlamydial and Lyme disease infections, the 4 major non-nosocomial infections. In the era of molecular personalized medicine, Sanger sequencing will be the routine "gold standard" tool as a Petri dish for the diagnosis of numerous infectious diseases and other common genetic abnormalities such as BRCA gene mutations which can be tested on the cell samples prepared for HPV assays. The cytopathologists are in the drivers' seat in implementing Sanger sequencing in community hospital laboratories because they are directing the test flows of thousands of liquid-based cytology samples each year.

Biography

Sin Hang Lee has graduated from Wuhan Medical College in China. After a Residency-Fellowship at Cornell-New York Hospital and Memorial Hospital for Cancer, he was certified by the American Board of Pathology and obtained the FRCP (C) degree by examination in 1966. He was on the Faculty of McGill University and Yale University from 1968-2004 while practicing hospital-based pathology. He is currently the Director of Milford Molecular Diagnostics, Milford, Connecticut. In the past 10 years, he has developed Sanger sequencing-based testing methods for HPV, *Neisseria gonorrhoeae*, *Chlamydia trachomatis*, Lyme disease borreliae and Ebola virus implementable in community hospitals.

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