AN EASY-TO-USE AND COST EFFECTIVE IMAGE ACQUISITION AND MANAGEMENT SYSTEM FOR SURGICAL PATHOLOGY

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Introduction

Gross and microscopic images are critical components of surgical pathology for diagnosis, legal documentation, teaching and training, and telepathology consultation. Digital imaging offers several advantages over conventional photography:

1. It generates instant graphic results, allowing assessment of image data before the specimen is further processed.
2. Image data can easily be modified with readily available computer software.
3. It allows information transfer over the Internet.
4. Elimination of film processing and printing drastically reduces expenses.

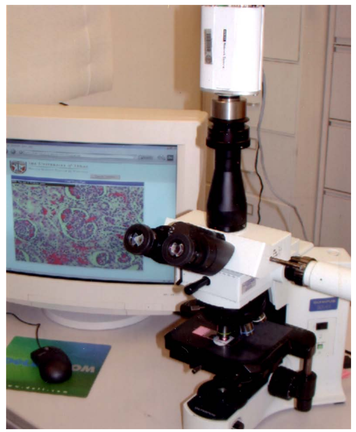
Materials & Method

The core components of this system include a Nikon Coolpix 995 digital camera with both digital and video outputs, an Axis 2400 Video Server and an image database (ThumbsPlus™). The camera allows both static and web-based live image acquisition and is connected to a video splitter that relays the image signal to a computer monitor, Samsung SyncMaster 150MP, for on-site view of the live image. The digital output is connected to the computer for on-site image download. For microscopic image acquisition, the digital camera is mounted to the ocular port on an Olympus BX41 microscope or mounted to an eye piece of the microscope via a MDC-A relay lens.

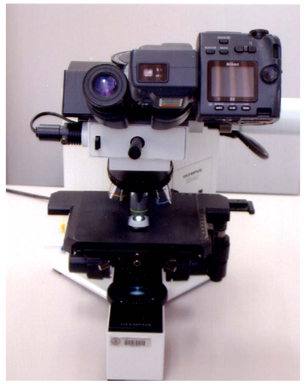
Conclusions

The proposed digital imaging system that can be used for both *gross* and *microscopic* imaging, presents both *live* and *static* images to the *on-site* and *remote* Internet user. This system is highly cost-effective, non-proprietary, flexible, easy to operate, and permits effective cataloging.

On-site Components of Imaging System



Network Camera With Web Server (Axis 2140)



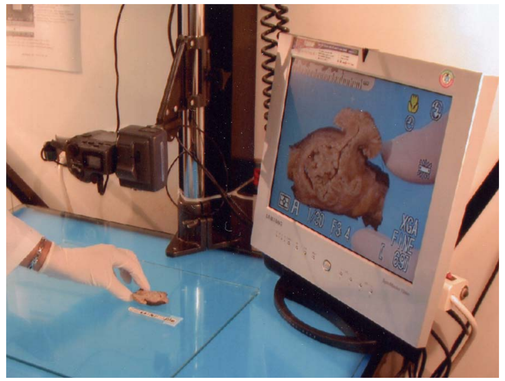
Digital Camera (Nikon Coolpix)

Video Output

Digital Output

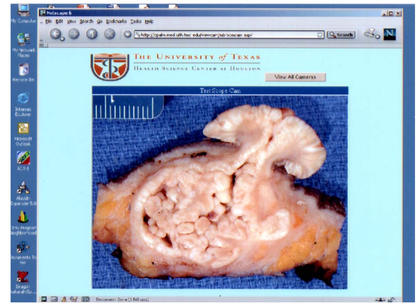
Mobile Web Server (Axis 2400)

On-site Computer Monitor (Samsung 150 MP)

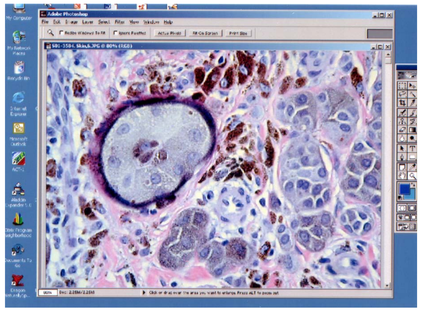


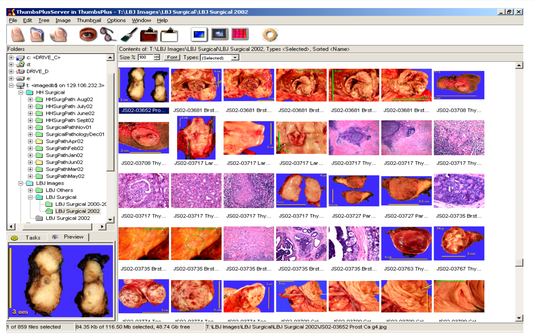
On-site Computer (Dell GX 150)

Remote (Network)



Remote PC





Central Image Database