Introduction

We have built a readily accessible and comprehensive digital collection of haematological blood and bone marrow cells. The morphology collection includes over 3000 conventional slides of blood and bone marrow cells. The morphology collection is being used by a number of institutions in the UK and is proving to be a valuable resource for teaching and research.

Digital Imaging

The procedure involves electronic scanning of conventional 35mm transparency slides (2 x 2) into digital format. Imaging of this material is made using digital photomicroscopy, with final images enhanced for colour correction and magnification using commercial imaging software.

Interactive Teaching

Our initial aim was to improve accessibility of the morphology collection via the Internet. The compactness of the images makes it possible to transmit the images to any location via the Internet and to allow access to the material.

Internet Access to UK NEQAS (H) Morphology

To take advantage of this facility and the increasing availability of digital electronic communications, a collaborative study is to be piloted with UK NEQAS (H) for morphology and cytochemistry.

Materials

- Nikon Coolscan LS-30 Scanner
- MA Slide Mount Adapter
- FH-2 Strip film holder
- SA-20 Strip film adapter and film tray
- CSSI Connection
- 496 PCI/AT with Windows 95 (minimum 16MB RAM)
- Paintshop Pro version 5.0
- Microsoft Word
- Adobe Photoshop version 5.0
- Foto Station 4
- Nikon Coolpix 990 digital camera
- Nikon Coolpix MDC relay lens (0.82 – 0.29 x)
- Luxor card reader / writer (Model: CG-UPD 080A-TF)
- Leitz ST C-Mount adapter
- Leitz Microscope
- Plan Apo lenses

Images can be exported after a pre-scanning step using Nikon Scan 2.2 (Figure 2) to photo-editing applications such as Adobe Photoshop or image manipulation applications such as Paintshop Pro (V5.01).

Interactive Teaching

We have used Microsoft Word to develop an Interactive Teaching Package, which illustrates the morphology of various haematological disorders. The package includes scanned 35mm slides that have been inserted into the program in digital format. Users view the images and click on key words to reveal clinical details and educational notes about the disorders. The package is being developed to be available on CD-ROM and via our Trust Intranet.

Conclusion

The digital images will provide uniformity of material. In addition, the facility to visualise the same cell, a process which is achieved offline will allow individual specificity and provide the basis for improved national morphological consistency.

In the future electronic data interchange will provide real time morphological examination and rapid return of results.