Study of the display quality for digital mammographic radiographs on VDT (Visual Display Terminai)

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ABSTRACT

ABSTRACT With the highly science and technology advanced on computer, the improvement of medical radiology is becoming much faster than before. In addition to the digital trend of radiology, the display medium of radiology has changed from view-box to VDT (Visual Display Terminal) workstation. Because the diagnosis characteristics of different nidus are different and the display quality varies under view-box and VDT, the diagnosis performance of doctors is affected by those factors. Nowadays, the resolution of medical screen has reached to three-six million pixels and the resolution of general screen has also reached to two million pixels. Consequently, the effect of displayed medium of radiology on the diagnosis performance of doctors is still deserved studied further. This study is designed to investigate the effect of mammogram display medium (VDT and view-box) on the diagnosis performance and subjective preference of doctors according to different professional experience. In addition, this study is measured quality of mammogram display on the VDT according on the basis of HVS (Human Visual System).The diagnosis performance is evaluated by the ROC (Receiver-Operation- Characteristics) test, and subjective preference is evaluated by the Likert-type rating scale, and quality of mammogram display on the VDT is evaluated by VQP (Visual Quality Plot). On the basis of this study, some suggestions will be proposed for the adequate display medium of mammogram to assist in improving the diagnosis performance of doctors according to different professional experience.

Keywords : Mammogram ; view-box ; VDT ; ROC ; HVS ; VQP

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