



Contribution ID: 67

Type: **Poster**

Optimisation of protection in breast mamamography

Thursday 22 June 2017 15:35 (5 minutes)

****ABSTRACT**

BACKGROUND

Xray mammography is the most reliable method of detecting breast cancer being the method of choice for breast screening program in many countries ,high mammogram s have to be obtained at a reduced breast dose in combination of correct equipment used

Methodology

linear attenuation coefficients for different types of breast tissue are similar in magnitude and the soft tissue contrast can be quite low tha is to say the main variable of mammographic imaging system that were considered in this study included contrast ,sharpness ,dose and noise

Results

contrast was made as high as possible by imaging with a low photon energy hence increased breast dose was seen . contrast decreased by a factor of 6 between 15 and 20keV . the glandular tissue contrast fall below 0.1 for energies above 28keV

unsharpness in the image contributor included receptor blur eas made as small as 0.1 -0.15mm full width at half maximum of a point of response function

Dose decreased rapidly with depth in tissue due to low energy Xray spectrum used at 20keV there was dose increase by a factor 17 between thickness 2cm and 8cm of 30 between photon energies 19 and 30keV for 8cm thick breast there was a dose increase of a factor of 30 between photon energies 19 and 30keV image noise was contributed from film grain and electronic noise

conclusion

In practice breast dose was a compromise made between the requirements of low dose and high contrast. these factors are the important physical parameters for optimisation of protection in mammography

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Session Classification: Thursday afternoon - Poster Presentations - Screen5