277 A measurment of medical X-ray film with a screen-film method

Jin An district hospital of Shanghai Cao hou -De
Shanghai photosensitive material corperation Wang yong ming

Purpose: The sensitivities of X-ray films have the possibility of measuring by: (1) a day-light exposure with sensitometer; (2) a Bootstrip exposure with screen-film system. This study resulted in the differences and applications between the two groups.

Materials and methods: (1) A five film types with different sensitivities were loaded in turns and performed to the radiation exposure using Bootstrip method; (2) The same type and emulsion batch of the films were exposed to a light sensitometer (according with « QB 500-83 »); (3) The films above were then read with a calibrated densitometer, the densities of each piece film were respectively recorded and curved in order to obtain a comparison; (4) Absorbational peaks of these five film types were measured by a spectrometer.

Discussion: This might not match completely between the maximum emissive peak of the intensifying screen and absorbational peak of some films, because the sensitivity of screen-film system increases nothing or less to the radiation, while the sensitivity of films increases to the light. Therefore, this of the film to the light can not correctly represent this of the film in pratical use.

Conclusion: (1) This is a big difference between these two methods. (2) With a sensitometer measurement to the light, what a result has showed is not the same as the conventional radiography, and may not be applied to the daily use as a standard. (3) The conditions of the screen-film system are coincidence with radiography and the results of the measurement could be considered as a reference when make up the parameters of radiography.