

and it is possible to expose the patient to the influence of the ray every day, from forty-five minutes to an hour.

Quinine *per se* has no effect in this disease. It is solely on account of its fluorescent properties that it is useful in connection with the X-ray, which may be demonstrated by taking a solution of quinine bisulphate, say, one grain to the ounce, and place inside a fluoroscope which has been wrapped in several thicknesses of black paper, and exposing to the X-ray, when the bottle of quinine solution will be seen most distinctly fluorescing.

Quinine bisulphate is used in preference to the other salts of quinine, on account of its solubility, being soluble in one to twelve of cold water, while the sulphate is only soluble in one to seven hundred and forty cold water.

The quinine should be given in large doses, commencing at ten grains, increasing up to fifteen or twenty grains daily, an hour before exposure to the X-ray, and the treatment kept up daily.

The tube should be one of high vacuum. This is all important. A low tube will not give good results, according to Dr. Morton. By a high tube is meant one that will at least have resistance sufficient to back a six or eight-inch spark. The patient should be placed about three feet from the tube, and the exposure should last from thirty to forty-five minutes, or even one hour, according to the severity of the case, the patient being turned from time to time, so that all the affected parts may be exposed. This treatment should be persisted in as long as good results are obtained.

As to just what tissue change takes place I am not prepared to state. In some situations a decided softening occurs, the enlarged glands becoming normal so far as one can judge, while in others the enlarged glands shrink and become quite fibrous. This corresponds to the theory of some authorities, that a fatty degeneration ensues in some cases, while a change to fibrous tissue occurs in others. I am sorry that I was unable to obtain a post-mortem examination in this case, and thereby determine what changes actually did take place, yet I am convinced that great good may come from the use, especially the early use, of quinine fluorescence in all cases of sarcoma, but on the other hand, unless used properly and with a powerful X-ray apparatus, using a high vacuum tube, anything but good results may ensue.