

Determining Source Location for Tandem and Ovoid Brachytherapy Implants Using Non-Orthogonal films

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Tandem and ovoid applicators have been used for many years to treat gynecological cancers. When using these applicators, orthogonal films of the patient with the applicator in place are often used to determine the location of the sources in order to calculate a dose distribution. However, when using a conventional radiographic unit, it is not always easy to take orthogonal films, and if the films are not perfectly orthogonal, errors will be introduced into the calculations. These errors could then effect the calculated tumor dose and calculated doses to normal tissues such as the rectum and bladder. The purpose of this research was to develop a computer program that allows the user to determine the source location from two films that may not be perfectly orthogonal. This will increase the accuracy of the source location thereby improving the dose calculations. Any time dose calculations can be improved, it benefits the patient by allowing physicians better knowledge concerning the actual dose delivered to normal and diseased tissues.