

Polaroid Photoscanning¹

R. W. Kyle, A.B. and G. S. Johnston, M.D.

Washington, D.C.

The introduction of Polaroid film in Radiology has been a significant step forward in diagnostic radiography. The advantages and disadvantages of Polaroid film in radiography have been discussed elsewhere (1). This study was undertaken to determine the feasibility of using Polaroid film in photoscanning.

METHOD

Each of approximately 200 selected patients with suspected thyroid disease was given 25 μ c of sodium iodide-131. Twenty-four hours later, each was scanned using a Picker Nuclear Magnascanner with a special adapter to hold the Polaroid Casette. Polaroid Radiographic Packets No. 1001, daylight loading, were used in the place of x-ray film which is commonly employed for photoscanning. The completed scans were developed with the aid of a Polaroid Rapid Film Processor and required a processing time of sixty seconds.

RESULTS

Figure 1 shows the scan of a thyroid. The normal sized gland contains a regular distribution of isotope. By comparison, Figure 2 pictures a scan of the enlarged thyroid in a patient with Graves' disease. Figure 3 demonstrates the appearance of a series of multinodular goiters in euthyroid patients. The isotope distribution is irregular and areas of increased concentration as well as areas of no isotope concentration are outlined.

DISCUSSION

Polaroid photoscanning with Polaroid Rapid Film Processor developing permits the physician without dark room facilities to perform photoscanning. In addition, there is an advantage in the speed with which the photoscan can be made available for interpretation.

The most notable disadvantage of the Polaroid film is the 10" x 12" size of the film currently available. Photoscans of only smaller organs and areas can be obtained with it. Nevertheless, it is usually possible to place four thyroid scans on one sheet of film. We have used it for large organ scanning with some success, however, the entire organ did not fit on film in some instances.

The technique of using Polaroid film in scanning is simple, but it requires attention while the cassette is being loaded. The Polaroid Packet consists of a negative, processing chemicals and paper for the final print. If care is not exercised, the pods containing the processing chemicals may be inadvertently broken

¹Material for this study was furnished by the Polaroid Corporation, Cambridge, Massachusetts.



Fig. 1. Polaroid photoscan of a normal thyroid gland in a 40-year-old man.

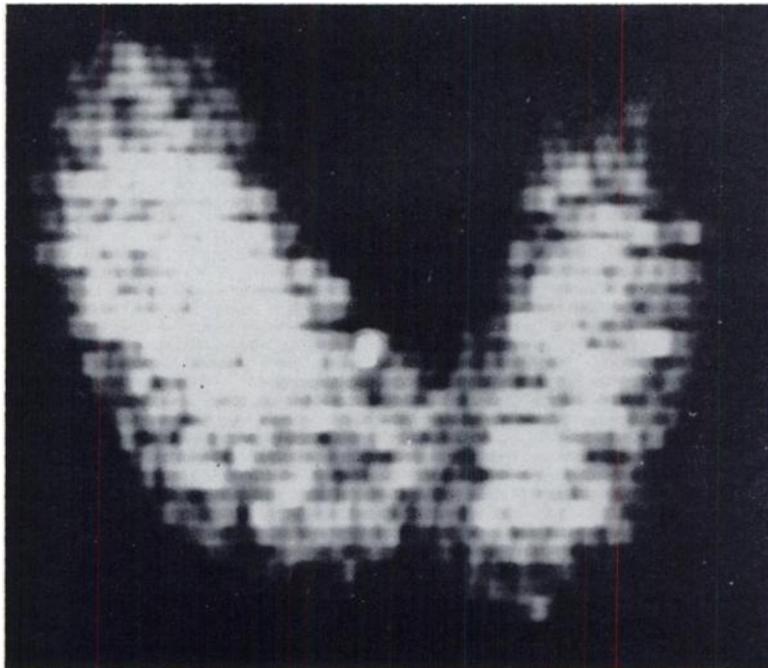


Fig. 8. Polaroid photoscan of an enlarged thyroid in a 23-year-old woman with Graves' Disease.

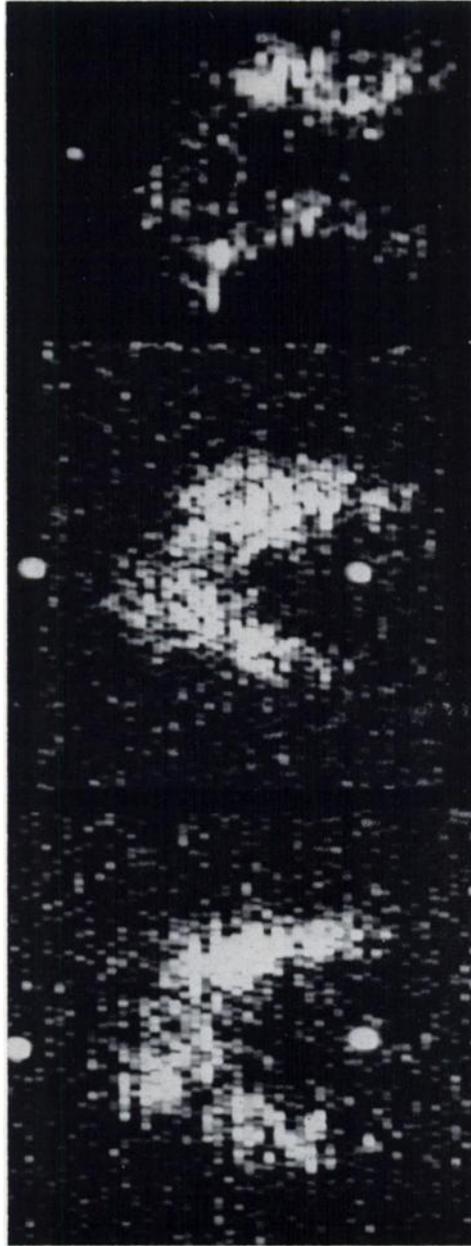


Fig. 3. Polaroid photoscan of multinodular goiters in three euthyroid patients.

releasing the chemicals prior to the scanning procedure resulting in streaking of the finished copy.

The finished copy is the reverse of the usual Radiographic film scan in that it is white on black as compared to black on white. As experience is gained with this process, the interpretation of the finished film is no more difficult than with

ordinary radiographic film. The developed film is translucent and the scan can be enhanced through the use of an x-ray viewing box.

SUMMARY

Approximately 200 thyroid photoscans were performed in this clinic utilizing Polaroid film. These scans have demonstrated the usefulness of this film in photoscanning. Dark room facilities were not required and the photoscan was available for interpretation 60 seconds after the scan was completed. With the addition of an enlarged radiographic packet, Polaroid film could be used instead of regular radiographic film for scanning all organs. However, the currently available film is adequate for most photoscanning.

Through this Polaroid scanning method, photoscanning could be made more universally available as a diagnostic technique.

BIBLIOGRAPHY

1. WISE, R. E. AND JOHNSTON, D. O.: Rapid radiographic processing. *Lahey Clinic Bulletin* 12:130, 1961.

Announcement

The Section of Therapeutic Radiology and the Section of Radiobiology, Department of Radiology, University of California School of Medicine, San Francisco, are now offering a four-year training program in radiation therapy under the auspices of the National Cancer Institute of the National Institutes of Health. Clinical and basic training will be well integrated. The program is conducted jointly by Dr. Franz Buschke and by Dr. Harvey Patt.

Those interested should write directly to the Training Director, Dr. Franz Buschke, Department of Radiology, University of California Medical Center, San Francisco, California 94122.