NMT Gadgetry

A Device for Vertex Imaging

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A lead-plywood device has been designed to assist in enhancing the quality of vertex imaging. The device can be easily constructed for adaptation to the scintillation camera.

When taken in conjunction with routine brain images, the vertex view can contribute significantly to identifying cranial lesions. It is used to detect superior midline and parasagittal lesions, metastatic disease, and traumatic states (*1*). This communication describes a device that was constructed in our laboratory for the purpose of obtaining better vertex images.

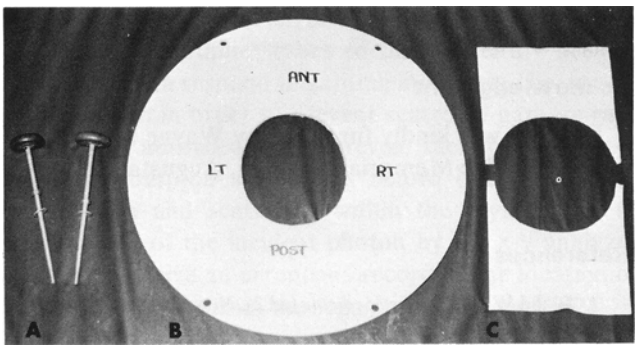

FIG. 1. (A and B) Materials needed for constructing vertex imaging device. (C) Lead diaphragm used to adapt to different patient head size.

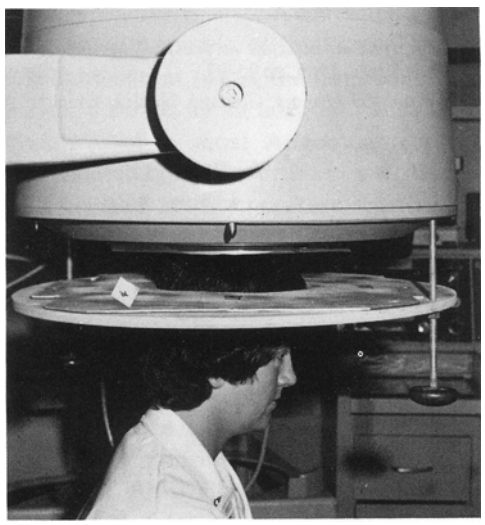

FIG. 2. Vertex imaging device mounted on camera. Note positioning of head diaphragms on top of device.

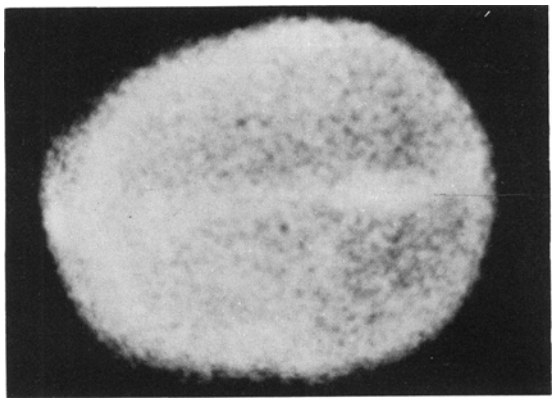

FIG. 3. Vertex image taken without device.

Materials and Methods

The vertex imaging device can be constructed with a minimum of effort and building materials. Materials include a circular piece of ½-in. plywood measuring 23 in. in diameter, a piece of ⅛-in. lead with the same diameter as the plywood, and two ⅜-in. screws measuring 10 in. in length (Fig. 1 A and B).

Holes are drilled in the plywood and lead so that they coincide with the holes in the collimator. The lead is then attached to the plywood. A hole, measuring 8¼ in. by 7¼ in. in diameter, is cut in the center of the lead–plywood combination.

The head opening in the device is small enough to accomodate almost any head size. If the patient's head is too small for the opening, half-circle lead diaphragms (Fig. 1C) can be placed around the patient's head on top of the device (Fig. 2).

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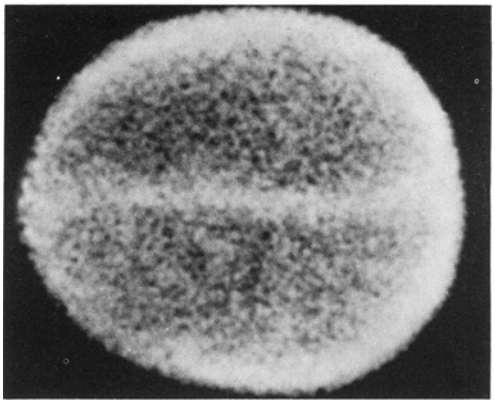

FIG. 4. Vertex image taken with device.

The device is attached to the camera by removing one of the front and one of the back collimator screws and placing the ⅜-in.-diam., 10-in.-long screws through the drilled holes, securing them in the holes in the collimator. An alternative method is to remove the two guide pins from the detector head and insert the 10-in. screws in the holes, thus leaving all four collimator screws in place for additional support.

Results

Although the main function of this device is to improve the quality of vertex imaging by eliminating backscattering resulting from the head, neck, and chest activity (Figs. 3 and 4), it also aids in patient immobilization.

Reference

1. Blahd WH: *Nuclear Medicine.* New York, McGraw-Hill, 1971, pp 250–251