involve the underlying dura or brain, as we have learned when we have had occasion to re-operate upon patients in whom this screen has been utilized. Fig. 1 shows an x-ray of such a piece of screen covering an anterior burr hole.

We have also used somewhat larger segments of screen* to cover other types of small cranial defects with satisfactory results. Fig. 2 shows a fairly large occipital defect covered with screen which was held in place by suturing the periosteum over its edges. The defect was produced during the process of splitting the tentorium prior to the insertion of a Torkildsen tube in a hydrocephalic infant with an aqueduct stenosis and a subarachnoid block at the tentorial ring.

REFERENCE

* The screen can be obtained from Uza Nudell, 125 West 45th Street, New York City.

ENCEPHALOGRAPHY IN THE PRESENCE OF A TANTALUM IMPLANT

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(Received for publication March 6, 1950)

Tantalum appears to be the most satisfactory material for the repair of cranial defects, but one objection frequently raised to its use is that its radio-opacity interferes with subsequent encephalography. The degree of radio-opacity of tantalum, of course, is dependent upon the thickness of the plate employed. Many surgeons seldom use anything less than .015 of an inch in thickness. We have found that a sheet of tantalum .007 of an inch in thickness is perfectly adequate to repair a cranial defect of any size, and it has the following advantages. It can be more

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Fig. 1. Air-filled ventricles visualized through a tantalum implant 0.007 inch thick.

Fig. 2. Diodrast-filled arteries visualized through a tantalum implant 0.007 inch thick.
readily shaped at the operating table. It can be cut with a pair of scissors, and holes can be punched in it with a modified card punch. When properly shaped and fastened to the edges of the skull by means of tantalum screws, it affords perfectly adequate protection to the underlying brain. In addition to being more readily formed, it is less expensive than the thicker sheets, and by using more penetrating x-rays it is possible to obtain satisfactory visualization of the air-filled ventricles beneath the implant or of diodrast-filled vessels as shown in Figs. 1 and 2.

**A NEW PERCUTANEOUS NEEDLE FOR ARTERIOGRAPHY**

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(Received for publication April 10, 1950)

Because of certain difficulties which arose when the conventional straight 18 gauge intravenous needle was used for the closed method of arteriography, it was

**Fig. 1.** This needle has been used in over 200 cases in which carotid arteriograms were made. We have found it a great improvement over the straight needles. The needle is made of a strong and malleable material so that it can be adjusted to any angle. The tip is short and sharp; the proximal end is attached to a Luer-Lok syringe (Fig. 2).

**Fig. 2.** Same as shown in Fig. 1, with 10 cc. syringe and two-way petcock attached.

**Fig. 3 (Left).** The angle is shown at which the straight needle enters the artery. (From Poppen, J. L.: Aid of arteriograms in diagnosis and treatment of intracranial aneurysms. *Radiology*, 1949, 52: 347-352, Fig. 2.)

**Fig. 4 (Right).** The angulated needle is shown in position lying in a plane horizontal to the artery rather than at the acute angle shown in Fig. 3. In this position, the needle is less likely to be displaced from the lumen of the artery by slight movement at the time of injection.

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