

Bronchography with a New Water-Soluble Medium (Dionosil¹) and the Use of a Simple Technic*

by

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The value of bronchography in the diagnosis of certain pulmonary diseases has been well established. Prior to the introduction of water-soluble media in 1948, various preparations of iodized oil were used for bronchography. These media gave excellent roentgen visualization of the tracheo-bronchial tree, but proved to have serious undesirable side effects⁶. For this reason, a search was made for new media which would be free from untoward effects and this led to the introduction of a series of water-soluble compounds. *Dionosil* is the latest addition to this group of bronchographic media.

The water-soluble contrast media used for intravenous pyelography could not be used for bronchography because of their fast absorption and irritating effect upon bronchial mucosa. During the second world war however, a series of cellulose compounds were synthesized in an effort to find a plasma substitute. One of these compounds namely carboxymethylcellulose was used successfully by Swedish workers in 1948, as the vehicle for a contrast medium for bronchography (Xumbradil Viscous B)⁶. Since then, many other compounds using various concentrations of a contrasting agent and carboxymethylcellulose have been introduced and clinically evaluated. *Dionosil* differs from these

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(1) *Dionosil* was kindly supplied by Galxo-Laboratories Ltd, Greenford, Middlesex, England.

compounds by being a suspension rather than solution of propylidione and sodium carboxymethylcellulose in water. Propylidione is the N-propylester of 3,5 di-iodo-4-pyridone-N acetic acid acid^{1,2}.

Dionosil is supplied in two forms: The oily dionosil which is a suspension of propylidione in arachis oil and the aqueous dionosil which is a suspension of propylidione in isotonic saline plus about one per cent of sodium carboxymethylcellulose as viscosifying agent. The iodine content of these media is about 30%.

Elimination of Dionosil:

Part of this contrast medium is expectorated. That which is not thus eliminated is absorbed after hydrolysis⁷ and then excreted by the kidneys. There is no liberation of free iodine or inorganic iodide^{3,4}.

Technic of Bronchography:

The contrast medium is introduced through an intra-tracheal tube. The whole procedure of bronchography is carried out by the radiologist.

Preparation of the Patient:

Patient is instructed to take nothing by mouth for about 5-6 hours prior to examination. Mild sedation of the patient is accomplished by subcutaneous injection of 10 mg. of morphine sulphate. In addition to this, 0.4 mg. of atropine sulphate is given S.C. in order to reduce excessive bronchial secretion during examination.

Topical anesthesia of the upper air passage is accomplished by spraying a solution of 2% amethocain to the back of the tongue, the oral pharynx, and the laryngeal region followed by instillation of 2 cc. of the same drug into the course of the trachea.

After anesthesia is completed, a №14 French urethral catheter is introduced via one of the unobstructed nostrils (already anesthetised) into the nasopharynx and then gently eased into the larynx and the trachea. During the insertion of the catheter, the patient is instructed to take deep breaths with open mouth. If the catheter fails to enter the trachea after initial attempts, the procedure will be carried out under

direct fluoroscopic vision. We have never had a case in whom we were unable to place the catheter in the trachea by this method. The tip of the catheter is placed at the proper position in the desired bronchus. The patient is made to lie on the same side. At this time the contrast medium is slowly injected through the catheter by an assistant while the radiologist manoeuvres the patient in an attempt to fill the desired bronchial segments. Spot roentgenograms are also obtained if necessary.

Our Experience with Dionosil:

Using the above described technic, we have performed about 40 bronchographic examinations with Dionosil during a one year period at the Nemazee Hospital, Shiraz, Iran. This medium proved to be totally satisfactory for the visualization of the tracheobronchial tree. The oily and the aqueous suspensions were both used with equal results. *Alveolization* of the contrast medium seldom occurred. Thus unobstructed views of the bronchi could be achieved in almost all cases. No significant untoward local or systemic reactions were noted in any of our patients. We have had no instances of death due to this procedure. No skin reaction or gastro-intestinal disturbance were observed. Some of our patients, however, developed slight pyrexia following bronchography. This subsided within 24 hours without any specific therapy. This minor complication has also been reported by others^{5,6}. In several cases in whom roentgenograms of the chest were obtained following bronchography, no detectable lesion that could be attributed to this procedure was elicited. Usually no trace of contrast medium is seen in the bronchi 3-4 days after bronchography (Fig. 1, 2). Elimination of the contrast medium usually takes more than three days in patients with emphysema or in those with chronic inflammatory disease.

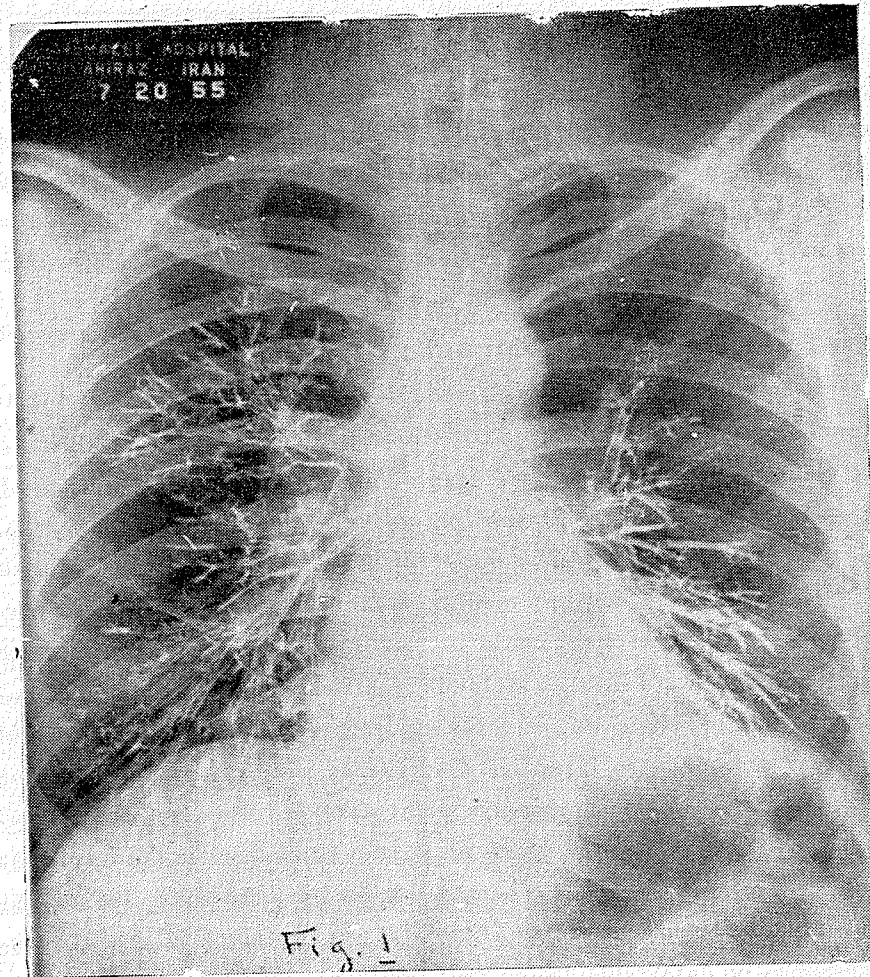


Fig. 1—Bronchogram using Dionosil showing excellent visualization of the tracheobronchial tree.

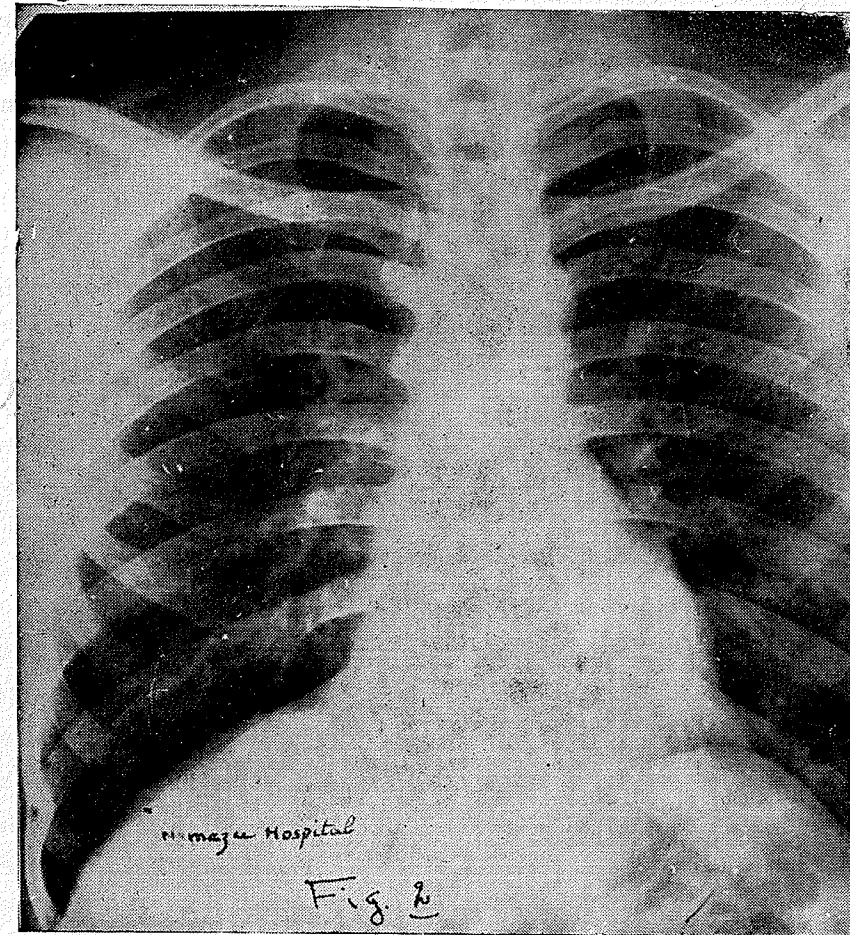


Fig. 2—Taken three days after fig. 1 shows no residual contrast medium in the lungs.

SUMMARY

A simple technic of bronchography which can be carried out by the radiologist is described. Our experience with *dionosil* has been discussed. We believe the dionosil to be a satisfactory medium for bronchography.

RÉSUMÉ

Nous avons décrit ici une technique simple de bronchographie qui peut être utilisée par le radiologue. Notre expérience avec le *Dionosil* a été discutée. Nous le tenons comme une substance opaque satisfaisante pour la bronchographie.

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Technique de la Réaction de Fixation du Complément Modifiée*

(M.C.F.)

par

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A) Matériels :

1) ANTIGÈNE

L'antigène de cette réaction est un mélange de cardioline (0,03°/o), de lécithine (0,2°/o) et de cholestérine (0,9°/o) dans l'alcool (à 96 degrés). On peut aussi se servir de l'émulsion préparée de l'antigène de V.D.R.L. test dilué dans le sérum physiologique à 8,5°/o en raison de 1 pour 14. L'antigène de Kahn Standard peut aussi être utilisé en raison de 1 pour 20, en diluant l'émulsion préparée en raison de 1+19 dans l'eau salée.

2) COMPLÉMENT

Le sérum frais, lyophilisé ou conservé de cobaye, mélangé à parties égales avec la solution conservatrice suivante :

Acide borique	5 gr
Acétate de sodium	12 gr
Eau distillée Q.S.P.	100 cc.

3) HÉMOLYSINE

L'hémolysine anti-mouton est préparée en faisant tous les 2,3

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