temptations in the way of patients to ascribe all their misfortunes to their employments.

One reason, perhaps, why onychia has not drawn much attention as an occupational disease may be that many of the cases occur in patients whose hands are already affected by severe industrial dermatitis, and in whom it is largely secondary to that dermatitis. Here I am especially concerned with onychia occurring independently, and I think that if looked for it will be found to be of more importance industrially than has hitherto been supposed.

A NEW METHOD FOR THE INJECTION OF LIPIODOL

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The intra-bronchial injection of an iodized oil, opaque to the x rays, for the diagnosis of certain conditions of the lungs and bronchial tubes has been practised for some time. This method of investigation has advantages peculiar to itself, and there is no other method which gives the same information. It is therefore important that the method of injection should be rapid, painless, and efficient. The condition under treatment may require repeated injections of the oil, and the objections of patients to these repeated injections by the methods at present in use has made it apparent that some easier and more rapid technique should be evolved.

There are two possible methods of injection: the intra-laryngeal (usually called the oral route), and injection through the crico-thyroid membrane direct into the larynx.

The great disadvantage of the oral route is that it is not applicable to children. The condition which most commonly requires lipiodol injection, a pneumonitis involving the larger bronchi, occurs frequently in children, so that in any attempt to evolve a technique of injection which can be universally applicable only the alternative method can be considered.

A general anaesthetic has previously been necessary for the treatment of children, and this has been a serious disadvantage. If a little anaesthetic only is given the children cough as they come round, and are apt to cough up the oil and swallow it. With deep anaesthesia, apart from the risks which attend the abolition of the cough reflex, the x -ray picture has to be taken with the patient lying down, and so fails to show fluid levels, which are an important diagnostic help.

An attempt has here been made to simplify the technique of injection through the crico-thyroid membrane and to dispense with the necessity of a general anaesthetic for child cases. The illustration is of a special syringe devised for this purpose.

DESCRIPTION OF APPARATUS

This is a 20 c.cm. syringe with a barrel greater in diameter and thus shorter in length than the one generally in use. The usual thumb-piece has been replaced by a lever. The piston is attached to the working arm of this lever by a rod, and into the other arm is screwed the barrel of the syringe. The rod is attached to the piston by a universal joint. A spring is inserted between the two arms of the lever to keep them constantly apart and to bring the piston up the barrel. To the end of the barrel is attached a bayonet joint. A filling tube is provided. A special trocar-pointed needle with lateral

holes fits the syringe. On this needle a shoulder may be placed, if desired, to prevent it penetrating the larynx beyond a certain point.

TECHNIQUE OF INJECTION

The injection may be made through the crico-thyroid membrane or between two of the upper rings of the trachea. Some time before the injection the skin over the selected site is swabbed with spirit and painted with 1 per cent. picric acid, and this area protected with sterile cotton-wool held in place by a bandage. Before proceeding with the injection the patient should be instructed to bring up as much sputum as possible. At the time of injection the dressing is removed, the patient lies down and, using a syringe fitted with a very fine hypodermic needle, the skin is anaesthetized with $1/2$ c.cm. of 2 per cent. novocain and adrenaline. It is good practice to form a bleb to mark the position of the crico-thyroid membrane. The filling tube is fitted to the special syringe and the lever is compressed until the piston reaches the end of the barrel. The tube is then placed in a bottle of warmed oil and the pressure gradually released. As the spring separates the arms of the lever, the piston moves and the oil flows into the barrel.

The piston is so arranged that it goes past the 20 c.cm. mark; the barrel therefore contains 20 c.cm. of oil and 3 to 5 c.cm. of air. The filling tube is removed and the needle attached. The syringe is then inverted and the air expelled. The piston is kept steady at this point by means of a check-piece. The filling of the syringe and fitting of the needle takes about thirty seconds.

With adults it is now usual to inject about 5 minims of 10 per cent. cocaine hydrochloride into the larynx from an ordinary 1 c.cm. syringe, but with children I generally omit this in order to make the operation more rapid.

The needle of the special syringe is now gently pushed through the crico-thyroid membrane until it is felt to enter the larynx, and the patient is sat

up. The lever is held firmly and the check-piece released with the first finger of the right hand. Tension on the lever is now gradually released. If the end of the needle is in the larynx bubbles of air will enter the syringe. When this occurs proceed with the injection. At any stage of the injection the position of the end of the needle can be verified by gently releasing the lever. At the end of the injection the lever is released, any oil in the needle being pulled back into the barrel. The needle is then withdrawn, the neck gently rubbed, and the puncture sealed.

The x -ray picture is taken in the upright position.

There are no after-effects to these injections and no complications have occurred.

In practice this method will be found considerably quicker and far more comfortable for the patient than those previously in use. It is not usually necessary to admit patients into hospital; provided the condition for which the investigation is made permits, the patient may be allowed to go after the investigation has been completed.

A syringe of this type, with the various modifications as they have been introduced, has been in use for nine months and has given satisfaction. It is made by Messrs. Allen and Hanburys.

Special syringe, showing filling tube (above), and needle with shoulder fitted.