LIPIODOL IN THE DIAGNOSIS
OF CONGENITAL ÖESOPHAGEAL
ATRESIA

BY

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Two infants, aged 12 and 6 days at the time of death, were admitted to the Hospital for Sick Children, Great Ormond Street, with the history of 'going blue and suffocating' on attempting to take food. The injection of

Fig. 1. Case 1.—The shadow of the blind öesophagus is seen above the level of the clavicles. Lipiodol, spilt back into the larynx, has passed down the trachea, has outlined the bronchial tree, and has also reached the stomach by way of a tracheo-bronchial fistula.
5 c.cm. of lipiodol into the œsophagus during life was successful in establishing by radiography the diagnosis of atresia of the œsophagus in both cases. In practice this may be performed with the aid of fluoroscopy. The accompanying radiograms demonstrate the conditions found on admission to hospital.

In Case 1 (investigated June, 1932), skiagrams during life showed a blind end to the œsophagus with a little lipiodol both in the stomach and in the lungs (Fig. 1). A post-mortem examination in this infant revealed complete atresia of the œsophagus with a communication extending from the bifurcation of the trachea to the lower portion of the œsophagus (Fig. 2).

It was thus evident that the lipiodol present in the lungs and stomach of this infant in the ante-mortem skiagrams had spilt over from the upper end of the œsophagus into the trachea, thus finding its way into the bronchial tree and, through the fistula, into the stomach.
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In Case 2 (investigated October, 1932), the ante-mortem radiograms suggested complete atresia of the oesophagus (Fig. 3). It was not possible to obtain a post-mortem examination in this case, but post-mortem radiography after the injection of lipiodol into the trachea, and into the oesophagus from above and below, was sufficient to show the existence of complete atresia without tracheo-oesophageal fistula (Fig. 4).

Fig. 3. Case 2.—Ante-mortem radiography. The oesophagus which is dilated, ends blindly at the level of the sixth costal cartilage.

Discussion.

This aid to the diagnosis of congenital oesophageal atresia, also reported upon by Reid1 soon after the beginning of our work, is of more than academic interest. The clinician, confronted with a new-born infant presenting the symptoms of choking and cyanosis on feeding, may be required to give a definite diagnosis of congenital atresia, a diagnosis which carries with it an invariably fatal prognosis. Radiological confirmation of his diagnosis may be valuable. The expectation of life of the 250 or more cases2 which have been reported since the condition was originally described by Durston3 in 1670 does not, in the absence of surgical intervention so far considered inadvisable4, exceed 18 days. It is of interest that the two infants reported here present examples of both types of congenital atresia known to occur5,6. The first case is an example of the commoner variety, namely, atresia with tracheo-oesophageal fistula. This occurs in 84 to 92 per cent. of recorded cases.
instances² ¹, and only about 10 per cent (of which the second case is an example) consist of simple atresia without fistula. For a discussion of the probable mechanism producing atresia of the cesophagus in the newborn, reference may be made to the writings of Keith and Spicer³ and of Sheldon⁵.

We are indebted to Dr. Poynton for permission to publish these two cases, and to Dr. Shires for help in the interpretation of the radiograms.

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**REFERENCES.**

1. Reid, M. D., *J. Pediat.*, St. Louis, 1932, 1, 87.

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**FIG. 4.** Case 2.—Post-mortem radiography. First the blind cesophagus was filled with sodium iodide. Subsequently the bronchial tree was injected. If a tracheo-cesophageal fistula had been present some of the opaque fluid would have passed into the stomach.