LIPIODOL IN THE DIAGNOSIS OF CONGENITAL ŒSOPHAGEAL ATRESIA

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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 Œsophagus 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.

FIG. 2. Case 1.—Above, the blind œsophagus is seen. Below, the œsophagus leads out of the trachea just above its bifurcation.

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,

In Case 2 (investigated October, 1932), the ante-mortem radiograms suggested complete atresia of the œsophagus (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 œsophagus from above and below, was sufficient to show the existence of complete atresia without tracheo-œsophageal fistula (Fig. 4).

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

Discussion.

This aid to the diagnosis of congenital œsophageal 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 Durston⁸ in 1670 does not, in the absence of surgical intervention so far considered inadvisable⁶, exceed 13 days. It is of interest that the two infants reported here present examples of both types of congenital atresia known to occur^{3, 7}. The first case is an example of the commoner variety, namely, atresia with tracheo-œsophageal fistula. This occurs in 84 to 92 per cent. of recorded

instances^{2, 4}, 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 œsophagus 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.

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

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