TWO CASES OF DIPHTHERIA WITH UNUSUAL COMPLICATIONS.

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The following cases, recently under our care in the Croydon Borough Isolation Hospital, are of special interest as showing two complications of diphtheria seldom met with in the practice of infectious fevers and not specifically mentioned in any of the standard textbooks dealing with this subject.

CASE I.—*Pulmonary Abscess.*

A girl, aged 9 years, was sent to the hospital as an ordinary case of laryngeal diphtheria. The symptoms on admission were those of well-pronounced laryngeal obstruction; she was deeply cyanosed, breathing was laboured with marked laryngeal stridor, and she displayed all the distressing symptoms of asphyxia. There was pronounced recession of both supra-sternal and infra-sternal notches, together with indrawing of the intercostal spaces and, indeed, of all the soft parts of the chest. The pulse at the wrist was almost imperceptible, the extremities were cold and blue, and the chance for the child's recovery looked extremely black. Tracheotomy was immediately performed, the opening being made in the trachea just below the cricoid cartilage. No sooner was this done than a large quantity of thick yellow pus mingled with blood spouted from the wound, smothering the operator and his assistants. The actual quantity seemed to be about 4 oz., and another ounce was coughed up by the child while she was yet on the table. A Parker's tracheotomy tube of large size was inserted and tied in, and the child taken back to bed. Colour and pulse rapidly improved, and an hour after the operation the child was sleeping comfortably. During the course of the next four days she continued to cough up pus through the wound, its consistency becoming more glairy and mucoid as the quantity decreased.

The tube was removed on the third day; on the fifth day the discharge had completely ceased, and on the twentieth day the wound had closed. As soon as the child was out of danger, and before removal from the theatre, the throat and pharynx were examined, as there had been no time for this prior to the operation. Both were somewhat congested, but no diphtheritic membrane was present. Swabs of the throat proved negative. A swab of the larynx and of the trachea above the wound, however, distinctly showed the presence of the Klebs-Löffler bacillus, and in culture there was a pure growth of this organism. A smear preparation of the pus was examined but no Klebs-Löffler bacilli were found, the only organisms present being *Fraenkel's pneumococcus* and some short chains of streptococci. These organisms were also found in culture, but there was entire absence of Klebs-Löffler bacilli. A smear from the wound itself, however, did show the presence of this organism, due probably to an extension of the infection from the larynx. On the first appearance of pus from the wound a retropharyngeal abscess was suspected, but on further investigation these suspicions proved to be unfounded. The chest was examined, and was noted to be somewhat malformed (pigeon-shaped); expansion was poor, especially on the left side; the percussion note was dull over the left lower lobe, the dullness extending to the level of the spine of the scapula, and to a less marked degree above that.

Breath sounds over the affected lung were distinctly impaired, being of the broncho-vesicular type over the apex and upper lobe, and of the bronchial type over the lower. A well defined area about 3 in. in diameter at the level of the inferior angle of the scapula suggested cavitation. Over this region the breath sounds were amphoric, with tinkling râles and abundant moist sounds; there was pronounced increase of the vocal resonance, the whispered voice being very distinctly heard.

Empyema and lung abscess suggested themselves as being at the root of the trouble; failure, however, to find pus in the pleural cavity after two explorations eliminated the former, and, having regard to the signs displayed over the affected area, the latter seemed the more probable. To help in the elucidation of the case an x-ray examination of the chest was made by Dr. Stanley Melville, who reported "that the whole of the left side was diffusely opaque, the opacity obscuring any view of the diaphragm on this side. The upper lobe was patchy. The condition suggested thickened pleura with some breaking down of lung tissue." As it was thought that the case might have a tuberculous origin the von Pirquet reaction was sought for on two separate occasions, but without result. A history of long-standing bronchitis was obtained from the mother,

but whether the lung abscess was primary or secondary or had anything at all to do with the laryngeal condition seems to be a matter of great doubt. The child made a good recovery, and, with the exception of some signs of fibrosis and bronchiectasis in the left lung, was discharged in good health.

CASE II.—*Paralysis of the Circumflex Nerve.*

C. M., a girl aged 7 years, was admitted as an ordinary case of scarlet fever, with all the signs and symptoms of this disease well developed. In addition to these, membrane was present on both tonsils, and as this suggested the possible presence of diphtheria a swab of the throat was taken, and its examination revealed the Klebs-Löffler bacillus. At the same time it was noted that the condition of the heart was somewhat abnormal, the character of the first sound being altered. Two days after admission she suddenly became collapsed, pulse rapid and feeble, colour poor, extremities cold, and she displayed all the symptoms of heart failure; cardiac stimulants were administered, and she recovered. Several days later it was noticed that there was definite loss of power in the right arm, and it was found that while she was able to use the forearm and hand she could not raise the limb at the shoulder-joint. Comparison with the limb of the opposite side pointed to weakness of the deltoid as being the cause. Signs of paralysis could not be found in any other region. The child was kept completely at rest for fourteen days, the heart symptoms improved, but the arm condition remained the same. About this time wasting began to manifest itself in the affected muscle, and, notwithstanding treatment by massage and strychnine, improvement did not take place. The wasting continued, and on the date of discharge, six weeks after admission, she was still unable to raise the limb. On three successive days after admission 4,000 units of anti-diphtherial serum were administered, and a definite serum rash occurred on the thirteenth day.

The paralysis was evidently one of the circumflex nerve, and was in all probability attributable to the diphtheria toxin, as no other cause seemed to suggest itself.

Several writers have reported cases in which the diphtheria toxin has picked out nerves supplying muscles or groups of muscles, and, taking into account the condition of the heart, which was typically that usually present in severe cases of diphtheria, we feel justified in concluding that this case was of a similar nature.

We are indebted to Dr. R. Veitch Clark, Medical Officer of Health for the County Borough of Croydon, for permission to publish notes of these cases.

Memoranda:

MEDICAL, SURGICAL, OBSTETRICAL.

TWO UNUSUAL CASES OF ABSCESS OF THE LIVER.

In the JOURNAL of December 13th, 1913, Dr. Ashton Bond published a case of tropical liver abscess which came under his care in hospital at Toro, Uganda, in which the abscess was situated in the epigastric region. The case was of peculiar interest to me, as it recalled to my mind a very similar case I had to treat while living in a temporary camp, the nearest white settlement being more than 100 miles away. It occurred in a native of North-East Rhodesia in December, 1911. He had been working as a carrier for some time, and had only ceased to work as such ten days previous to my seeing him, though this was difficult to believe, as he presented a most pitiable and anxious appearance. The man was suffering from the most extreme degree of emaciation, and the upper part of the abdomen was greatly swollen and tense. The temperature was 101°, and the pulse 78. Liver dullness was increased both in an upward and downward direction; the spleen could not be felt, owing to the nature of the swelling, which filled the whole of the epigastric and left hypochondriac regions. This swelling, which he said was not painful, was only slightly tender. There was some degree of jaundice, but he had had no rigors or sweats. I was able to get a definite history of previous attacks of dysentery. As his condition called for immediate treatment, and he consented to operation, I had small trees cut down and a table made and covered with grass and placed in a large hut, open on one side, where I operated. On cutting through the abdominal wall, the abscess, about the size of a small coconut, was found to be divided into