A CASE OF GANGRENE OF THE LUNG.¹

BY W. H. SWAN, M.D., BEVERLY, MASS.

G. H. C. is an oil-clothing manufacturer, thirty-six years old, and father of two healthy children. His family history is not important. Has been subject to attacks of asthmatic bronchitis for the past six years, otherwise has always been well, except for a debilitating siege with peri-tonsillar abscess in early November, 1896. He regained his usual health and vigor slowly after this attack.

In the early morning of December 13, 1896, he awoke with a chill, cough, and pain in the left chest. I found him suffering pretty severely — temperature 99°, pulse 100, respiration 25. There was a dry friction rub a short distance outside the left nipple, chest examination otherwise not abnormal.

In the evening his chart showed temperature 102°, pulse 120, respiration 32; but he was largely relieved of his pain and the cough was less troublesome.

In the next two days the temperature had gradually fallen to 99°, with disappearance of the friction sound and no evidence of effusion.

On the afternoon of December 16th, the third day of his illness, he had another chill, with more cough, rusty sputum, elevated pulse, temperature and respiration. Examination showed an area of consolidation, apparently about the size of the palm, in the left axilla, extending into the back.

The temperature began to fall next day, and December 19th reached 99.5°.

From this time till December 25th the temperature remained a little elevated — around 99°, pulse about 100, and respiration somewhat elevated.

Subjectively he was feeling pretty well, except for considerable sweating and a continuance of the cough, with a little yellowish tenacious sputum. The area of consolidation was less distinct and showed numerous coarse and medium moist râles — as is usual in the resolution of a pneumonia.

From December 25th the temperature gradually rose till it reached 103° on December 28th, and during this time he coughed up a good deal of dirty brown sputum, with an extremely offensive odor. The appearance of tympanic resonance in the upper part of the chest with flatness below, and a well-marked *succussion sound*, coincident with profuse sweating, great prostration and beginning delirium, made it evident that there was now a *pyo-pneumothorax*, secondary to gangrene of the lung, which had sloughed into the pleural cavity.

On December 28th nearly two quarts of brownish, offensive pus were drawn from the left chest by aspiration.

Next day he was given chloroform, Drs. Torrey and Manchester assisting, and after excising some three inches of the seventh or eighth rib in the posterior axillary region an opening was made into a cavity containing, by estimate, three quarts of the sanious stinking pus, with some shreds of sloughy tissue. Just opposite the opening was a softened, gangrenous portion of lung, with a clearly defined hole the size of the little finger, through which could be seen a bubbling during respiratory movements. The ragged, loose sloughs were scraped away with the finger, the cavity flushed with sterile water, two large drainage-tubes

stitched in place, and the external wound partially closed. There was a good deal of shock following the operation, but the patient rallied in a few hours, and during the next week there was a marked improvement in his condition — less sweating, mind clear and free discharge from the tubes. This was followed by more sweating, more delirium, irregular temperature, increasing prostration and diminished discharge from the tubes, till January 9th, when he was again given chloroform, Drs. Torrey and Shatswell assisting. The wound was enlarged by a long semi-circular incision, and another rib hurriedly excised to give easy access to the inside of the chest. Some three inches above the original opening a constriction was found, the dilatation of which allowed the escape of a large amount of foul pus, and disclosed a cavity extending upwards beyond the reach of a urethral steel sound, but apparently not extending very far laterally.

After thorough dilatation of the narrowed outlet, and flushing the cavity, two large rubber drainage-tubes, the shorter one fenestrated, were carried up some six and ten inches respectively, and stitched in place *inside* the chest wall, thus giving an opportunity for repeated flushings of the whole cavity.

During the next twelve hours the patient was in a precarious condition — one bordering on collapse — then he began to rally and had a violent chill. From the day following the second operation till the early part of February his condition was that of profound sepsis — more or less delirium, some sweating, irregular temperature and rapid, irregular pulse, which required a good deal of stimulation.

During this time, as throughout his illness, he was able to take and assimilate an extraordinary amount of nourishment, which undoubtedly saved his life.

Cough was often troublesome while the tubes were in place, and required more or less morphia and codeia for relief. There was a good deal of sputum — often six to eight ounces in twenty-four hours — at times having a very foul odor, and sometimes containing blood in streaks and occasionally one or two ounces clear blood. Odor is last recorded on February 18th and blood on March 23d.

Examination of the sputum by Dr. Sargent showed numerous staphylococci, streptococci, pneumococci, and on one or two occasions tubercle bacilli. There was more or less delirium till the middle of February.

Patient took his first meal in the dining-room February 19th.

The discharge from the wound lost its odor a few days after the second operation. The cavity was irrigated daily for three or four weeks, then every second day till about March 1st, after which time it was done only occasionally, as each irrigation was followed by a rise of temperature, as shown by the chart. The fluid used for irrigation was at different times sterile water, boracic solution, Labarraque's solution, creolin and permanganate of potash in weak solution.

On two or three occasions, soon after the first operation, the irrigation caused severe coughing, the patient detecting the taste of the Labarraque's solution used in the irrigation. The discharge was pretty free till about the middle of April, and from that time the longer tube was gradually shortened, till both were entirely removed about June 1st.

The patient spent the summer inland, and by autumn considered himself as well as ever. His weight is now

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two hundred and ten pounds — some twenty pounds more than he ever weighed before.

In order to show more plainly his present condition he has kindly consented to come here to-night, and will remove his clothing, that those who care to may examine the chest.

The amount of respiration and expansion of the affected side seem to me to be very satisfactory. Measurement shows a scant inch difference in the circumference of the two sides.

Medical Progress.

REPORT ON DISEASES IN CHILDREN.

BY T. M. ROTCH, M.D., AND A. H. WESTWORTH, M.D., BOSTON.

THE DIAZO REACTION IN THE URINE OF INFANTS. — UMIKOFF.¹

UMIKOFF gives the results of his examinations of the urine from one hundred and forty-seven infants. The infants varied in age from four days to four months. The diazo reaction is never present in normal urine. Elevations of temperature do not favor the production of the reaction. The same is true of catarrhal pneumonia, diphtheria, varicella and various diseases of the respiratory and gastro-enteric tracts, the skin, etc. In erysipelas and measles the diazo reaction can almost always be obtained. The intensity of the reaction increases with the severity of the erysipelas and measles. In a majority of diseases which terminate fatally the diazo reaction can be obtained a day or two before the infant's death. The test has, therefore, considerable prognostic value in those cases in which the reaction is intense.

A NEW DIAGNOSTIC SIGN OF MEASLES. — KOPLIK.²

Koplik calls attention anew to a pre-eruptive sign of measles which he first described in 1896.³ Further experience has convinced him of the pathognomonic value of this sign at a time when a positive diagnosis of measles is impossible, that is, from twenty-four to seventy-two hours before the appearance of the exanthem on the skin. This phenomenon consists in an eruption of minute bluish-white specks, surrounded by a reddish area upon the mucous membrane of the cheeks and lips. These minute specks are but lightly attached to the mucous membrane, and may become rubbed off if the mouth has been washed. In some cases only a few red spots with their central bluish specks are observed, but in other cases the whole lining membrane of the cheeks and lips may be covered. As distinguished from other deposits upon the oral mucosa, these bluish specks never become white and opaque, like "sprue" spots, nor do they coalesce and become plaque-like in form, but always retain their punctate character. As the exanthem on the skin appears and spreads the eruption on the mucous membrane of the cheeks and lips becomes diffuse, and the character of a discrete eruption or spotting disappears, leaving an intense general redness simply dusted over with myriads of the bluish-white specks. When the skin eruption is at its height the buccal eruption begins to fade, and gradually disappears, even while the ex-

anthem is still out. In the later stages of the fading skin eruption the phenomenon is no longer seen. The great value of this sign of measles lies in the fact that its early appearance in the pre-eruptive stage enables the physician to isolate cases much earlier than has previously been possible, a proceeding that must be of inestimable value in hospitals and institutions where epidemics of measles are justly dreaded.

In differential diagnosis also this sign is of value in distinguishing measles from other eruptive diseases and from skin diseases resembling it. Among these are *rötheln*, scarlet fever, beginning influenza, forms of *erythema multiforme*, and some efflorescences from drugs.

This sign can be seen only in very strong daylight falling from a window directly on the mucous membrane. It is necessary to evert the lips and cheeks either with a spatula or with the finger.

[We can confirm the existence of this sign in the pre-eruptive stage of many cases of measles, and have come to attach great value to it as an aid to early diagnosis. If detected early it furnishes a most reliable means of distinguishing measles when the early eruption assumes the maculo-papular form so suggestive of variola.]

THE VALUE OF KOPLIK'S SIGN IN THE EARLY DIAGNOSIS OF MEASLES. — LIBMAN.⁴

Libman has been able to confirm, by the examination of fifty cases of measles, the diagnostic importance of the bluish-white spots upon the mucosa of the cheeks, signalized by Koplik as a constant phenomenon of the period of incubation.

One of these observations is particularly instructive as to the value of Koplik's sign in permitting early isolation of cases of measles in children's hospitals. The case was that of a boy, age six years, who for three days had complained of cough, with fever and pains in the chest. At the time of admission he had no trace of coryza or of conjunctivitis. There were only the signs of a slight bronchitis, with a mitral murmur and hypertrophy of the left ventricle. The temperature was 101.8° F. The diagnosis was at first doubtful, but the mouth revealed Koplik's sign. The child was at once isolated, and two days later the eruption appeared.

Since this experience Libman has made a point of daily examining the mouth of every patient in his service. A few days after this precaution was adopted he found the sign in another child, and later in nine others. These ten children were immediately isolated. All of them developed the eruption twenty-four to forty-eight hours later. On the other hand, no child failing to show the sign in the mouth subsequently developed measles. The author has never found the spots in other affections than measles. In a case of *erythema nodosum* and in one of tertiary syphilis somewhat similar spots were observed, but they were clearly distinguished by their larger size and by the absence of the zone of peripheral congestion.

BRONCHIAL STENOSIS RESULTING FROM THE PERFORATION OF PERI-BRONCHIAL LYMPH GLANDS INTO A BRONCHUS. — NACHOD.⁵

Nachod reports the case of a six and a half year old boy who had been ill for five days with cough,

¹ *Jahrbuch f. Kinderheilk.*, Bd. xlv, p. 335, w. Bd. xlv, 1897; *Fortschritt d. Med.*, August 15, 1898, No. 16.

² *Medical Record*, April 9, 1898; *American Journal of the Medical Sciences*, vol. cxvi, w. 2, h. 248, 1898.

³ *Archives of Pediatrics*, December, 1896.

⁴ *Medical Record*, June 11, 1898; *The American Journal of the Medical Sciences*, vol. cxvi, w. 320, h. 723, 1898.

⁵ *Prager med. Woch.*, No. 33, 1897; *Jahrbuch. f. Kinderheilk.*, Bd. xlviii, Hft. 2 u. 3, 1898.