THE BOSTON MEDICAL AND SURGICAL JOURNAL.

VOL. LXI.

THURSDAY, DECEMBER 29, 1859.

No. 22.

MEMBRANOUS CROUP—TRACHEOTOMY—RECOVERY.

{Read before the Boston Society for Medical Improvement, and communicated for the Boston Medical and Surgical Journal.]

BY GEO. H. GAY, M.D., BOSTON.

Membrane on the tongue, and in both lungs ; albumen in the urine.
—N. Taylor, æt. 5 years, 8 months, had a slight croup-sounding cough, on November 3d and 4th, for which he took some domestic remedy, with some apparent relief. On Saturday, the 5th, he came home from his play about 4, P.M., and at that time could not speak a loud word. He took some onion syrup, and had hot onions applied to his neck. The croup-sounding cough continued during the night. The next day, Sunday, he seemed easier and was disposed to play some, though he was hoarse, had dyspnoea and coughing, which was always aggravated on lying down. In the night he was very restless, tossing about the bed, and now and then struggling hard for breath. On Monday morning, the family physician was sent for. An emetic was given, and after its operation the patient was easier for a time. About 4, P.M., the distress in breathing was worse, and continued about the same through the night. There were some paroxysms of hard coughing also. Tuesday, A.M., he seemed better, and the mother reports that he was always more comfortable till about the middle of the afternoon, when the symptoms generally were worse, continuing so through the night. At night, he was very distressed for breath, seizing his neck, turning purple red in the face, with almost clonic spasms of the arms. During Wednesday there was no improvement in the symptoms; during the night there were two very distressing paroxysms of suffocative coughing. Thursday and Friday, the croup symptoms had all increased; the voice was a hoarse whisper, the respiration more and more labored, and the cough dry and metallic. The patient had vomited daily two or three times, from the effect of medicine, since Monday. Nothing like membrane was seen. On Saturday, the disease was progressing faster; in the afternoon steam was used, the respiration then being very labored and at times noisy, and the choking

VOL. LXI.—No. 22.

paroxysms of coughing more severe and prolonged. I first saw the patient about midnight. He was then lying on his side, in a comatose condition, with his head thrown back, and the eyes rolled up, the face sheet-white, covered with cold perspiration, blueness about the lips, pulse very quick (160) and feeble, inspiration very labored, metallic and dry, not hurried, expiration less difficult, great prominence of the muscles of the front and side of neck, and deep depressions above the sternum and both clavicles, and along the epigastric region. No flapping nor bubbling râles could be heard. Percussion of both chests was generally resonant. The tongue had a thick white coat on its centre only. No membrane could be seen in the throat, nor were the tonsils or fauces even red. The main obstruction seemed to be in the larynx. There was no coughing till ether was given, and then only an attempt. In the struggling with ether a faint whisper was heard. Tracheotomy was instantly urged, and performed at about 12½ o'clock.

When the trachea was opened, some bloody mucus was forced out, and then some pieces of membrane. In a few moments the cough subsided, and the tube was inserted and fastened. The respiration was almost instantly relieved, and became easy and with but little noise. He passed into a quiet sleep, as if perfectly exhausted. The sleep was as quiet as an infant's. The pulse soon came down to 140, and in half an hour from the operation was 120 and stronger.

The change was most marked from the labored, metallic, dry breathing, to the easy and almost inaudible respiration after the operation. The indications went to confirm the idea of the disease being then principally located in the larynx. The lungs were perfectly free. There was no symptom of membrane below the sternum.

Written directions were then given with regard to the temperature and steam of the room, the injection of a sol. nit. argent. and of tepid water, *p. r. n.* Dover's powder, gr. iij., at 2 and 6, A.M., or oftener, *p. r. n.* Iodid. potass., gr. i., every three hours, nourishment of wine and water, beef-tea or gruel, the cleaning of the inner tube whenever there was an obstruction, or at least every hour, and the lace cravat.

Nov. 13th (Sunday).—Had a good night, with some short naps. Raised many pieces of membrane through the tube. The tube was cleaned every hour. There were no paroxysms of very hard coughing. The sol. nit. argent. was used and also the tepid water, when the breathing was dry and squeaky and labored.

To-day, 9, A.M.—Appears comfortable. Countenance bright. Respiration easy, not quick and with but little noise. Pulse 106. Has some soreness externally over chest, probably from previous muscular effort. Through the day he continued about the same, expelling membrane and viscid mucus. Had a nap of three hours. The

urine was boiled and found decidedly albuminous, being milk-white and flaky. Was very bright in the afternoon, lying on his side and playing with money. Smiles and nods that he is comfortable. Tongue looks cleaner and moist. Not much thirst. Continue previous directions.

14th (Monday).—There was more of a cough the first part of yesterday evening. Raised but little. Respiration pretty quiet. Took a Dover's powder and slept calmly till 1, A.M., when there was a paroxysm of coughing and expectoration of membrane. Took another powder and slept most of the time till 6, A.M., and then had spells of long, hard coughing, with expulsion of membrane. There was also some retching.

At visit, 9, A.M., there was a cough, with a flapping sound, and he acted as if something was choking him. Both tubes were immediately taken out, and, while the patient was coughing, membrane was seen coming down from above into the opening of the trachea. A portion was seized by the dressing forceps and removed, being two inches long and half an inch wide; the part in the forceps was thin, the upper part thick and very firm, with streaks of blood upon it. A few drops of tepid water was then syringed into the trachea, followed by the expulsion of some small pieces of membrane and tenacious mucus. Another piece was heard flapping above the opening, and the tubes were kept out for a while. After ineffectual attempts to remove it, it was thought best not to weaken patient in efforts to detach it. He was much exhausted and in profuse perspiration. Some air evidently passed through the glottis, and with the coughing there was also some gagging. The tubes were replaced, and some wine and water given. Had a powder, and he soon became quiet and slept more or less of the time till 2, P.M. Took another powder at 3, P.M., and at visit at 6, P.M., he had passed a pretty comfortable afternoon. The pulse was not counted this morning, on account of his excited state. At 6, P.M., it was 102. The expectoration to-day has been in part yellowish.

15th (Tuesday).—Took two powders in the night, and rested pretty well. The cough was not very troublesome. This morning, both tubes were removed and a few drops of tepid water syringed into the trachea. The expectoration was very free, mostly thin and purulent; there was one piece of membrane. The pus did not look healthy. The nurse speaks of the offensive odor of the expectoration and the air from the tube. The tongue does not look so well, is pale white, swollen and furred in the centre, with patches of membrane along the left edge, seen for the first time. Nit. argent. was applied. There is some redness of the skin about the wound. The wound is dry and glassy.

5, P.M.—About the same throughout the day. Nourishment and the other directions to be continued.

16th (Wednesday).—Last evening, about 8 o'clock, had a long,

loose cough. The inner tube was removed, and portions of membrane were seen coming down from above through the opening of the outer tube. After continued efforts, an immense quantity of membrane came with great difficulty through the tube in large lumps. The cough continued for half an hour or more, and in that time an ounce bottle was two thirds full of soft, as if decomposed, very offensive, lumpy masses; some of it was in flat strips, with longitudinal furrows, but most of it was in masses, as if rolled up during expulsion. These masses were white, not yellow, looking like thick porridge or curd, and most of it evidently from above. There was some blood with a portion of it. After recovering from the fatigue, took some wine and water, and a powder. Slept from 9 till 2, A.M. The rest of the night there was less cough and expectoration.

This morning, the pulse is 104. The general substance of the tongue is flabby and pale, with a thick white coat in the centre, and white patches of membrane along the left edge. The redness has extended on each side of the wound, and looks erysipelatous. The neck is seldom moved, is stiff and painful. The wound is about the same. Nit. argent. applied. The respiration is easy and pretty quiet. There are still some flakes of albumen in the urine.

17th (Thursday).—The tongue is not so pale and flabby. The redness of the wound about the same, with some induration. Little motion of neck, though still painful. The discharge from the wound is thin and unhealthy. There are crusts along the edges. The cough is less to-day than last night. The respiration is quiet. The expectoration is now thin mucus and pus. The offensive odor has nearly gone. The tubes have been changed every hour. Nothing like an eruption has been seen. Both tubes were removed to-day.

18th (Friday).—Last evening and first part of night as before. Since midnight, has not been so well. The coughing has been frequent, long, and, at times, loose; the respiration hurried and now and then dry. General restlessness. Tepid water was tried with great relief. Expectoration free.

This morning, 9, A.M., does not appear well. Countenance is heavy and dull. Skin of face dirty and dingy-looking. Respiration more hurried than yesterday, though not attended with much labor. Cough frequent and loose. Bubbling râles, both large and small, heard throughout both lungs; some sibilant râles at the lower part. Percussion resonant. Expectoration free, thick, not purulent, but white like porridge, and offensive, with occasional spots of blood. Pulse 130. Skin soft, not hot nor dry. No flush on cheeks. No thirst. Tongue generally not so pale, not dry, its centre as before; along left edge there are two membranous patches, size of a three-cent piece, raised above the level of the tongue; another raised patch, one inch long, three quarters of an

inch wide, along right inferior edge, near the tip. There is no sign of membrane in the back part of the mouth, and there is a free mucous secretion.

The wound of the neck is very unhealthy, dry, crusty, with occasional thin yellow, watery discharge. Does not like to lie on his left side. No catch in the breathing, no pain on coughing; any pleuritic sound is masked by the noisy bubbling râles.

Nourishment is taken with much difficulty. Does not complain of soreness in swallowing. Redness, swelling and induration about wound somewhat lessened. Nit. argent. to wound, stimulants and nourishment as before. R. Doveri pulv., gr. iij.; ipecacuanhæ, gr. i., M., immediately, and repeat in two hours.

1, P.M.—Vomited freely after the first powder, and forced through the tube a large quantity of thick and thin yellowish white substance, stained with fresh blood. There was much relief afterward. The expectoration had the same porridge-look and offensive odor. Vomited also after second powder. The respiration was then more free, though still noisy and somewhat hurried. Expectoration free from the mouth and wound; that from the mouth is mostly mucus.

5, P.M.—Tongue much cleaner. Membrane near the tip of the tongue on the right side is separating; a portion can be easily raised up. Sol. nit. argent. used freely and always followed with relief. Pulse 120. Respiration and expectoration about as at 1 o'clock. R. Citrat. ferri et quinine, gr. i., three times daily.

Patient scratched, yesterday, the skin around a wart on his finger, and to-day there is a pustule as large as two peas about it; the elbow was hit slightly, and immediately the spot became inflamed and tender. This will show the state of his system.

19th (Saturday).—Took two powders last night, and slept pretty well.

To-day, 9, A.M., the general indications are more favorable. Is much more comfortable, and there is a brighter look to the eyes. Pulse 110. Tongue better, membrane still separating. Redness about the wound nearly gone; the lips of it are still dirty and crusty. The expectoration is less. The respiration is much more quiet and not hurried, the bubbling râles are nearly gone. Does not cough so much, and is more inclined to take nourishment.

5, P.M.—Has had a good day, and is somewhat cross. The membrane on right side of tongue, near the tip, came off this afternoon, leaving the surface of the tongue of a smooth healthy red color, without any appearance of ulceration; the membrane on the left side of the tongue remains the same. Pulse 102. There is no uneasiness to-day on lying on the left side.

20th (Sunday).—General appearances still more favorable, though during a part of the night there was restlessness, without cough or sleep. Pulse to-day, 102. Tongue about as yesterday evening. Cough less and loose. Expectoration thinner, yellow-

ish, not so offensive, and at times streaked with blood. Respiration not so quick nor noisy. Wound still unhealthy and covered with crusts. Asked for bread and milk.

21st (Monday).—Had a pretty good night. To-day, appears still brighter. Cough less; expectoration a thin purulent mucus. Pulse 102. Color of tongue improving; patches of membrane the same. Respiration improving. Wound still dry and crusty. Takes his nourishment pretty well.

22d (Tuesday).—Passed a good night, sleeping most of the time, with but little coughing or expectoration. To-day, for the first time since the operation, the wound is discharging pus. The crusts are all away. Took some whiskey last night; is sleepy now, probably from the effects of it. Membrane on tongue continues about the same. Appetite improving. Respiration easy and noiseless. Expectoration decidedly purulent.

23d (Wednesday).—Yesterday and last night, patient was very comfortable. Omitted the Dover's powder, and continued the whiskey. Slept quietly most of the time. Early this morning, had two paroxysms of coughing. Cough loose, expectoration purulent.

9, A.M.—Improving. Tongue cleaning, and of a healthier red color; the patches of membrane about gone. Pulse 100. Wound looking better. More disposed to have his playthings.

26th.—Improving. Cough and expectoration less. No membrane on tongue. Pulse 96—98. Appetite good. Wound healthy and contracting.

Dec. 1st.—Gaining in every respect.

9th.—Up and dressed, using his playthings. Continues to improve. Wound cicatrized.

The same general remarks of the previous case, subsequent to the operation, will apply here.

The first noticeable points in this case are, the great falling of the pulse from 160 to 120, *forty pulsations in half an hour*, the easy and almost inaudible respiration, and the presence of albumen in the urine; then, on Monday, the retching and choking, the withdrawal of both tubes, the removal with the forceps of membrane from the trachea above the wound; on Tuesday, the offensive odor of the breath and expectoration from the wound, the patches of membrane on the tongue, the unhealthy condition of the wound, the sudden expulsion in the evening, *during half of an hour*, of such an immense quantity, through the tube, of membrane of different degrees of consistency, from distinct, flat, firm and ribbed membrane to the softer and porridge-like masses with an offensive odor, and the immediate long and quiet sleep from 9 till 2, A.M.; on Wednesday, the stiff, painful and erysipelatous condition of the neck; on Thursday, the expectoration of *thin mucus and pus*, and *diminution* of the *offensive odor*; the great change after midnight, and the alarming condition on Friday, with another

patch of *membrane* on the *tongue*, the state of his system as indicated by the inflamed elbow and pus around the wart, and the re-appearance of the offensive, porridge masses. The persistence of the crusts on the wound and the absence of pus until Nov. 22d, the operation having been performed Nov. 12th, at midnight, should also be particularly remembered. The sudden change on Friday should be specially referred to. The attack commenced with general restlessness and frequent, long coughing, which, in every probability from what followed, was occasioned by the irritation of membrane generally and simultaneously detached in the bronchi of both lungs, and indicated by the noisy râles and expulsion through the wound of lumpy, offensive masses, similar in look and consistency to those expelled from the larynx and trachea, on Tuesday evening.

The vomiting materially aided the expulsion of the membrane, which continued over twenty-four hours, and from that time there was a manifest improvement of the patient's condition, as seen in the falling of the pulse from 130 to 102, the muco-purulent expectoration, with absence of the offensive odor, the easy and comparatively quiet respiration, and the return of a brighter and more healthful look of the countenance.

Extensive membrane deposit in the throat is not unfrequently attended with an offensive foetid odor, as the membrane decomposes and separates.

I know of no reported case of tracheotomy for membranous croup, where mention is made of this offensive odor of the breath and decomposed membrane coming from the tube for any length of time, and afterward followed by the recovery of the patient.

In Millard's thesis, Paris, 1858, Obs. XLI., p. 219, in a *post-mortem* examination, are found these lines:—

“Fausses membranes épaisses comblant la cavité du larynx, et se continuant dans la trachée; ce conduit, outre des débris pseudo-membraneux assez larges, contient une purée semiliquide d'odeur très fétide, d'une couleur gris jaunâtre très sale; cette matière se continue dans les branches même assez délicés, celles-ci renferment en outre çà et là, de très petits fragments de fausses membranes.”

Genuine membrane upon the *tongue* is certainly of very rare occurrence in this locality.

It will be observed that albumen was found in the urine in this case, and not in the other.

A portion of the membrane raised from day to day through the tube, in both patients, was here shown.

The mother reports that the previous health of her son has not been good, and that he has been subject frequently to “*canker*” in the mouth, and a pustular eruption upon the hands.