Submaxillary cellulitis : syn. cynanche cellularis of Gregory, angina externa, angina Ludovici, cynanche sublingualis rheumatico-typhoides / by W. Morrant Baker.

[Reprinted from St. Bartholomew's Hospital Reports, Vol. XXVI.]

SUBMAXILLARY CELLULITIS:

SYN. CYNANCHE CELLULARIS OF GREGORY; ANGINA EXTERNA; ANGINA LUDOVICI; CYNANCHE SUBLINGUALIS RHEUMATICO-TYPHOIDES.

BY

W. MORRANT BAKER.

Cases of so-called submaxillary cellulitis, although not absolutely very rare, are not common; and occurring, as they do, in an apparently capricious manner,—several within a short time perhaps, and then not again for a long period, are apt to be less well known and recognised than, from their importance, they deserve.

The following case was admitted into St. Bartholomew's Hospital, under my care, in the present year. I extract the following brief account from the notes.

Stephen W., aged 58, admitted into Darker Ward, June 10, 1890, dates his present illness from the extraction of a tooth, a month ago. His neck became red and swollen, however, only eight days ago, and has gradually got worse.

There is considerable swelling,—extending from the chin to the upper portion of the sternum, and outwards over the sterno-mastoid muscles and clavicles. It is red, tense and brawny; tender to pressure; and there is a crackling sensation on touching the skin, as if from the presence of air in the subcutaneous tissue. Fluctuation can be detected in the middle line of the neck. The patient has some difficulty in speaking.

Urine acid: sp. gr. 1029. A slight cloud of albumen. Temperature 101.8°.

An incision was made by Mr. Lucas, the house-surgeon, in the middle line of the neck, over the cricoid cartilage, through the skin and subcutaneous tissue. Pus and air, of a most offensive odour, escaped, but not in large quantity.

Boracic fomentation applied.

June 11.—The swelling has subsided to some extent in front and at the lower part of the neck; but it is still considerable below the chin.

The patient is very restless and does not sleep well. Pulse 120. Temperature 99.4°.

The wound was enlarged, and irrigated with an iodine lotion, and dusted with iodoform.

On June 12th the patient became rapidly worse, with more laboured breathing (pulse 124, temperature 97.9°), and died on the following day (June 13th).

Post-mortem examination.—The skin was found widely separated from the deep fascia. The muscles in front of the trachea seemed in a state of slough.

Veins and lymphatic glands normal; also the larynx, trachea, œsophagus, tongue, and palate.

There was no apparent cellulitis of the mediastinum. A small patch of lymph was found at apex of right lung. No pericarditis or pleurisy. Heart and lungs normal.

All the abdominal viscera normal.

The following case was admitted into Coborn Ward under my care April 15, 1889.

Case II.—H. T., æt. 62, was admitted with a brawny inflammatory condition of the skin and subcutaneous tissue of the front and sides of the neck, and upper part of the chest—extending from the chin to two or three inches below the upper edge of the sternum, and from ear to ear; obliterating all landmarks in the cervical region. Some pitting occurred on pressure. Breath very offensive.

No ulceration could be detected anywhere in the mouth.

The patient seemed almost moribund on admission. Respiration rapid; pulse very feeble; countenance dusky. He apparently suffered much pain. Only brief notes were recorded.

Mr. Burns, the house-surgeon, made a free incision in the middle line of the neck, from the chin to the pomum Adami, and on each side near the angle of the jaw; and one in the middle line over the upper part of the sternum.

The patient died within forty-eight hours after admission into the Hospital; his temperature varying from 100° to 103° F.

Post-mortem examination.—All the soft tissues of the front of the neck seemed in a state of slough from the chin to the sternum, but the jawbone and hyoid bone were not affected; nor was any clot present in the veins.

There was general cellulitis with sloughing of the anterior

mediastinum, and extension of inflammation to the pericardium, which was roughened by recent lymph. The right pleural cavity contained blood-stained fluid and shreds of lymph. The lung contained much fluid, but there was no suppuration.

Heart very fatty. Kidneys large and fatty; granular on the surface. The left contained a cyst as large as a walnut. Liver fatty and cirrhotic. No ascites. Spleen large and soft. Intestines, bladder, and prostate normal.

My colleague, Mr. Langton, has kindly given me the following notes of a very typical case of this disease, which was admitted into the Hospital many years since, during his term of office as house-surgeon. It illustrates particularly well one great risk attending on submaxillary cellulitis,—namely, the danger of suffocation from rapidly extending œdema of the glottis.

J. A., æt. 25. Admitted February 6, 1862. When first seen he was obviously suffering "from a swelled neck and great difficulty of breathing. On examination," Mr. Langton says, "I found that the glands on the left side of the neck were very considerably enlarged, and there was great swelling below this and also on the right side extending towards the mesial line. The skin on examination was of dark purple tint, very brawny, and here and there boggy in consistence, and higher up under the chin there was a sense of indistinct fluctuation. The hyoid bone and thyroid cartilage could just be felt. His mouth was open, and on looking in I found that his tongue was pressed against the hard palate: the tongue itself seemed to be of its natural size and consistence, the mucous membrane, however, forming the floor of the mouth was elevated to a level with the free edges of the lower incisor teeth, and the tongue appeared to be pushed up by infiltration of matter under it, and thus causing the tongue to be pressed against the roof of the mouth. It was almost impossible to obtain a view of the condition of the fauces in consequence of the swelling of the parts. His face was flushed and his lips of a dark-blue colour, and the alæ nasi widely dilating. His pulse was about 110 and sharp. There was great œdema of the back part of the head, which he said had commenced first there and then travelled downwards. He was a butcher by trade, and stated that he had severe pain on the left side of head and face; that the swelling at the back of the head commenced about five or six days previously, and that the glands and lymphatic vessels had been enlarged some three or four days, and that he had been getting gradually worse. His dyspnœa first commenced last night, when he found that he could not breathe comfortably without being propped up in bed." The patient was admitted into the Hospital, and soon afterwards

the dyspnœa increasing, Mr. Langton was summoned hastily to the ward, and found that the patient had ceased breathing. "His face was perfectly livid, his pulse just beating, and he made one or two spasmodic attempts at inspiration. As the only chance was to perform tracheotomy or laryngotomy, I immediately proceeded to operate, making an opening as low down in the trachea as I conveniently could, since the brawny induration extended some distance down nearly to the sternum. On cutting through the muscles, a considerable quantity of sero-purulent matter escaped into the wound. The trachea was opened about half an inch below the isthmus of the thyroid to the extent of three rings and the largest tube introduced. The wound was about an inch and three-quarters deep, due to the infiltration of matter. During the operation he made one attempt at inspiration; but before the tube was introduced his pulse ceased beating. Artificial respiration was tried for a short time.

"Post-mortem examination twenty-three hours after death.

"Post-mortem rigidity well marked. Body well nourished: great pallor of face and neck. On making the incision from the chin to the sternum, a quantity of sero-purulent matter, with small shreds of dead cellular tissue, escaped. The whole of the muscles of the neck, with trachea, œsophagus and tongue were removed. The mucous membrane covering the hard palate and pharynx were natural, though perhaps somewhat congested. The œsophagus was healthy. The muscles of the hyoid bone, thyroid cartilage, &c., were found completely infiltrated along with the cellular tissue with sero-purulent matter and flaky shreds of disorganised intercellular membrane. The muscles under the chin and jaw were also similarly affected; but there the pus seemed to be more healthy. On opening the trachea, the rima glottidis was found nearly closed, with effusion of semi-purulent matter into the submucous tissue; this extended to the epiglottis, which was also œdematous, but not to the same extent as the rima; the effusion did not extend below the vocal cords, although the mucous membrane was somewhat congested, with some frothy mucus adhering to it.

"The *glandulæ concatenatæ* were much enlarged, as were also the submaxillary and parotid glands, but chiefly on the left side. The uvula was very œdematous. The bronchi were somewhat congested throughout their whole length. The lungs were normal, with the exception of numerous ecchymoses towards the base of the lungs, chiefly of the right. The heart natural; some atheromatous deposit on the attached margins of valves (aortic) and also the aorta. Liver congested; bile dark and viscid. Kidneys: left was much congested but otherwise apparently natural; right

kidney not so congested. Spleen somewhat enlarged. In the scalp over occiput there was great œdematous infiltration.

"The brain was not allowed to be examined."

The following case, recorded by Mr. Bickersteth,[1] illustrates also well the progress and frequent method of termination of the worst examples of this disease.

"Until the year 1861," Mr. Bickersteth remarks, "I had never seen, or at least had never recognised, a case of this kind, but then one presented itself here under circumstances that I cannot forget.

"A man, aged 40, walked up to the Hospital one morning and requested admission. He spoke with great difficulty and indistinctness, so that it was impossible to obtain much information from him. His breathing was embarrassed. There was great swelling beneath the jaw. The floor of the mouth was raised, and the tongue pushed upwards and backwards against the roof of the mouth, so that no examination of the fauces could be made. Mr. Nash, who was the house-surgeon at the time, recognised the peculiarity and urgency of the case, and very properly requested my immediate attendance. In the meantime he ordered the man some stimulants and sent him to bed. I happened to be at home, and came up at once, when I was informed the patient had died suddenly a few minutes before."

According to the notes drawn up by Mr. Nash, the patient had been seized with rigors and severe pain in the submaxillary region about three days only before his admission, and these symptoms were shortly followed by swelling, which extended from the lower jaw to the upper part of the sternum. "The pomum Adami and trachea were completely obscured. The skin was tense, but was neither changed in colour nor consistence, nor were its movements upon the sub-structures more interfered with than the tension would account for."

"*Autopsy.*—Shortly after death, puncture was made with a tenotomy knife into the floor of the mouth, when a small quantity of air and some sero-sanious fluid escaped."

"All the muscular interstices and the connective tissue surrounding the trachea were infiltrated with a sero-purulent fluid, extending upwards to the root of the tongue and downwards into the anterior mediastinum. The submucous cellular tissue was also similarly affected, producing anteriorly the sublingual distension already alluded to, and posteriorly œdema glottidis and general œdematous laryngitis."

Although submaxillary cellulitis, in its graver forms, seems

[1] Clinical Lecture, published in Liverpool Med. and Surg. Reports, vol. iii. p. 98.

to be of necessity fatal, and, from its proximity to the larynx, must be always more or less perilous, cases less virulent may be expected to get well, especially if proper treatment be promptly adopted. Many such cases have been recorded.

The following may be taken as an excellent example, both of recovery, and of the line of treatment most likely to give relief. It forms the second of the cases recorded by Mr. Bickersteth.[1]

The patient was a lady aged about fifty, under the care of Mr. Parke of West Derby, who began to suffer from feverish symptoms and pain beneath the lower jaw about five days before Mr. Bickersteth saw her in consultation.

At this time there was considerable diffuse swelling of the whole of the anterior and lateral parts of the neck, "so that the space between about an inch below the chin and the sternum presented a decided convexity. The swelling extended laterally on each side to the parotid space; above, it was limited by the base of the jawbone. Below it gradually subsided over the upper part of the sternum and inner third of the clavicles, which were lost in the general tumefaction. The skin of the neck was everywhere of a bluish dusky colour, but not inflamed nor thickened, nor œdematous." . . . "On examining the state of the mouth, which was accomplished with some difficulty owing to the patient being unable to separate the teeth beyond a very limited extent, the mucous membrane of the floor was found to be raised to a level with the top of the lower teeth, of a deep purple colour, and œdematous. The tongue itself was not enlarged, but pushed upwards and backwards towards the back of the mouth. On feeling the floor of the mouth, it felt soft and yielded readily to pressure, but I could not detect fluid, either with the finger in the mouth, or assisted by the hand pressed on the outside at the same time; neither could I feel from within the firm resisting swelling in the submaxillary space which I felt outside."

The treatment adopted in this case by Mr. Bickersteth was to "make an incision exactly in the median line, commencing about an inch from the point of the chin downwards to the extent of between three and four inches. I divided the skin and fascia in the first instance, and then carefully and slowly cut deeper, keeping exactly in the middle line through hard dense structures to the depth of at least two inches. Then, introducing my forefinger into the wound at its upper part, I found I had cut through the whole thickness of the induration, and that I had entered a cellular space beyond. Putting a finger of the other hand into the mouth, I was satisfied I had divided everything, except the mucous membrane of the floor of the mouth."

[1] *Loc. cit.*, p. 99.

. . . "No pus or serum was seen to flow from the incision, and as I had only cut entirely through the induration at the upper part of the incision, I then made the wound of equal depth throughout; but still I did not see any matter flow."

The treatment was followed by the happiest results; the patient ultimately recovering.

Of four other cases, recorded by Mr. Bickersteth, two died,—both from asphyxia; and two recovered, after free incision, as in the case just related.

There is no reason, I believe, for assuming that submaxillary cellulitis is different, in any essential features, from cellulitis as it is frequently met with in other parts of the body. In its gravest forms cellulitis may be a fatal disease, in any part of the body and under any treatment. The special importance of a knowledge of the usual course of submaxillary cellulitis lies in the urgency of the disease, on account of its neighbourhood to important structures; and especially in the imminent danger, in many cases, of suffocation, from œdema and spasm of the glottis, if the tension be not promptly relieved.

Regarding the method of treatment to be adopted in cases of submaxillary cellulitis, it may be observed that while, of course, free incisions are necessary wherever any signs of fluctuation are present, and where incisions can be safely made, these must not be delayed where no signs of fluctuation exist. In other words, the treatment of cellulitis in the neck must be the same as that of the like disease in a limb; and if any difference be made, it must be in taking still more prompt measures in the cases now under consideration on account of the greater danger of delay. With reference to this point I cannot do better than quote again from Mr. Bickersteth's clinical lecture.[1]

"In the early stage of this affection," Mr. Bickersteth says, "when the swelling has only existed a few hours, or a day or two, when there is no great difficulty in swallowing or in breathing, when the tongue is not pushed up materially, nor the roof of the mouth raised, do not suppose I would at once advocate an operation. A milder treatment may then be tried; the application of leeches over the tumefaction, a sharp aperient, such as calomel and jalap, and soothing applications and fomentations, or linseed poultices." . . .

"The incision," if required because milder methods have failed, "to do good, should go fairly through the whole thickness of the inflamed textures; and where can we do this with safety except in the median line? Only there can we divide the textures without dividing important blood-vessels and nerves. Thus although the

[1] *Loc. cit.*, p. 107.

swelling may be chiefly on one side, we make the incision in the middle, its deepest part reaching inwards towards the epiglottis; and although the most intense inflammation may not be here, we approach the part where its consequences are most to be feared, and afford a free exit for the discharge of inflammatory fluids."

Mr. Croly, in a very interesting paper in the *Dublin Quarterly Journal of Medical Science*,[1] deals especially with the question of treatment in cases of cellulitis of the neck. His paper, like Mr. Bickersteth's, will well repay perusal.

Regarding the general or constitutional treatment of cases of submaxillary cellulitis, it is not necessary to say anything in this place, as it differs in nowise from treatment of the like disease in other parts.

The name by which the several forms of submaxillary cellulitis have been chiefly known of late years (angina Ludovici) is an unfortunate one. It has the disadvantage, common to all cases in which a disease is named after its supposed first observer, of giving no clue to the nature or site of the malady; and, in this instance, the term is not appropriate in any sense, inasmuch as Ludwig of Stuttgart, after whom it is named, was not the first author who described it. His description of the disease, for which he proposed the term "gangrenous induration of the cellular tissue of the neck," appeared in the year 1836; but a well-marked example of the affection had been recorded some years previously (1822) by Dr. Gregory.

The case is recorded in the *London Medical and Physical Journal*[2] and the disease would appear to be then (1822), as now, comparatively rare. For Dr. Gregory remarks, "It has never occurred to myself to witness anything at all similar to it, either before or since, nor have I been able to ascertain that in the practice of any of my professional friends, one analogous case has ever presented itself. The disease consisted in an extensive inflammation of the cellular membrane of the neck and anterior mediastinum, of a highly malignant character. Its course was rapid, and the symptoms which attended it were of unusual severity. It bore, in the first instance, the appearance of a rheumatic affection of the joints of the cervical vertebræ. At a somewhat later period of the disease, it was imagined that the thyroid gland was the immediate seat of the inflammation; but it was not until after

[1] 1873, vol. i. p. 401.

[2] The London Medical and Physical Journal, vol. xlviii., July to December (1822), p. 287. "Case of Cynanche Cellularis with Remarks. By George Gregory, M.D., Physician to the Small-Pox Hospital, and one of the Physicians to the St. George's and St. James's General Dispensary."

death that the exact nature of the case was understood. Books have afforded us but very scanty information concerning this affection." . . .

"Ann Jones, 25 years of age, housemaid, was attacked on Tuesday, February 13, 1821, with feverish symptoms and pains of the back part of the neck, resembling rheumatism. She was not conscious of having exposed herself in any particular manner to cold. For these complaints she was bled, the same evening, to the extent of a pint, and took opening physic. The following day she came under my care; and at two o'clock P.M., when I first saw her, the following was the state of her symptoms.

"She had a considerable degree of fever, attended with great difficulty of swallowing. There was swelling, hardness, and some tenderness of the external parts of the throat. The swelling and tenderness extended round the neck on each side, but were chiefly felt and complained of at the junction of the clavicles with the sternum. On inspection of the internal fauces, no enlargement of the tonsils, or redness, or ulceration of the membrane of the palate and pharynx, were perceptible. There was no hoarseness, and scarcely any degree of difficulty of breathing. No essential relief had been obtained either by the bleeding or purging. It was observed, on the succeeding day, that the swelling and tenderness of the throat had augmented, but the febrile symptoms continued nearly the same. During the night the difficulty of deglutition increased, and the breathing became for the first time impeded. She was bled from the arm the following morning to sixteen ounces, and the blood appeared buffy but not cupped. The relief afforded by this measure was, however, very trifling. At this period I was favoured with the assistance of my friend and colleague, Mr. Jeffreys, and we had soon an opportunity of observing the rapid strides with which the disease advanced. Mucus began to collect in large quantity about the glottis, and its expectoration occasioned extreme pain. The difficulty of breathing increased to so great a degree, that the tongue assumed a blue colour. To relieve this, blood was twice drawn from the arm, but the alleviation was very momentary. The blood, when drawn, had a very dark appearance. The difficulty of swallowing became speedily so great as to preclude all possibility of administering remedies by the mouth. Leeches and fomentations were had recourse to. Latterly the patient complained of very considerable pain, referred to the top of the sternum. After a great deal of suffering, she died on Monday, February 19th, seven days from the invasion of the disease.

"The body was opened on the following day, in the presence of Mr. Jeffreys and a number of other gentlemen, whom the singu-

larity of the case had attracted; and the appearances which presented themselves were these:—

"The cellular membrane beneath the skin of the throat and around the trachea, as well as that which connects the pharynx and palate to the surrounding bones, was everywhere in a state of disease—doubtless the result of inflammatory action. In some places, actual sphacelus had occurred; in others, it was in a state of what might be called imperfect suppuration. In one or two points, purulent matter was distinctly to be traced. The same disorganised condition of the cellular membrane pervaded the whole extent of the anterior mediastinum, even as low as the point of the ensiform cartilage.

"While such was the state of the cellular membrane of the throat, the mucous expansions of the palate, pharynx, œsophagus, and trachea were healthy, except in so far as they were covered with a preternaturally abundant secretion of mucus. The lungs and the different abdominal viscera were found free from any traces of disease.

"To this singular variety of quinsy I have ventured to apply the term *cynanche cellularis*, from a belief that it has not yet received any more appropriate appellation. An extensive acquaintance with the works of the old authors might possibly have furnished me with cases offering an exact parallel to the one now detailed, but hitherto I have only succeeded in detecting one or two, which appear to resemble it in some of its characters."

Dr. Gregory then refers to the fact that Mr. James of Exeter had described a disease under the title of "angina externa," exhibiting the following symptoms:—

"The patient," he says, "(perhaps a female), of unhealthy and generally full and gross habit, has a swelling deep-seated in the side of the neck, towards the angle of the jaw, causing a great degree of pain in that side of the head, from its effects upon the nerves of the part most probably, and accompanied with much pyrexia.

"There is loading of the cellular membrane, similar to that which we observe in erysipelas phlegmonodes, but well limited, firmer, and more prominent. This takes place to a great degree, and the result is that the patient is scarcely able to swallow fluids, breathes with great difficulty, and cannot sleep from the impending suffocation. After a time, the skin adheres and inflames, and thickens as it inflames, but does not point, or for a long time show any symptoms of pointing, or giving way by slough or ulceration; meanwhile sloughs and noisome pus have formed underneath, and do great mischief." [1]

[1] James on Inflammation, p. 188.

Dr. Gregory also refers to a case previously recorded by Dr. Kirkland[1] (who had applied to it the name by which Mr. James designates it, "angina externa"), and remarks concerning it, that it approaches more nearly than any he had yet met with to the subject of his paper.

"A gentleman had a swelling with inflammation near the edge of the lower jaw on the right side of the throat, *which soon extended itself to the other side*, and became so great that we had just reason to apprehend his being suffocated, if it continued to increase in size much longer; for it had already affected his breathing violently; and *he was almost choked with phlegm*, from pressure upon the windpipe. It had the appearance of suppurating, and a small quantity of matter seemed to fluctuate under the teguments, but so very deep that we durst not think of cutting into the side of the throat, where it was perceived, on account of the carotid artery. However, as no time was to be lost, I was determined, if possible, to make a drain from the part; for which purpose I made an incision at the lower part of the tumour, in the middle betwixt the sterno-hyoides, and was fortunate enough to reach the matter that had formed. Its gradual discharge put the patient out of all sort of danger, but the hardness was troublesome, and long in being subdued."

The only other case referred to in Dr. Gregory's paper is one recorded by Dr. Wells. Dr. Gregory does not quote the case at length, but merely refers to it as resembling his own case after those already mentioned, more nearly than any other. The case is, however, interesting and very nearly allied, if not identical with the disease described by Dr. Gregory; and I shall be forgiven, therefore, I hope, for extracting at length Dr. Wells's account of it from the Transactions in which it is recorded.[2]

"A Case of Extensive Gangrene of the Cellular Membrane between the Muscles and Skin of the Neck and Chest. By William Charles Wells, M.D., &c. Read May 2, 1809.

"Mrs. G., the wife of an inferior tradesman in London, had always from her birth been rather feeble, but had never been afflicted with any considerable disease, prior to that which I am about to describe. She was married when about twenty-two years old, and, twelve months after, brought forth a healthy child. She soon recovered her ordinary state of health, and was sufficiently strong to suckle her infant, which throve under her care. About two months after her delivery, she began to feel a pain in her bosom and collar-bones, and to be often chilly.

[1] Kirkland's Enquiry into the Present State of Medical Surgery, vol. ii. p. 159.
[2] Transactions of the Society for the Improvement of Medical and Chirurgical Knowledge, vol. iii. p. 360. 1812.

These ailments were attributed to her staying much in a room, the door and windows of which were frequently open, though the weather was cold, to prevent the chimney from smoking. About the same time also her milk began to be less abundant; but she still continued to suckle her child. She remained in this state about three weeks, at the end of which time a slight cough attacked her, and her left cheek began to be painful, red, and swollen. This disease of the cheek was at first thought to arise from a bad tooth, but as it increased quickly, an apothecary was sent for on the 20th of last March, about three days after the commencement of the swelling. The swelling and redness had now reached the left clavicle; but as the system was very little disturbed, the apothecary conceived that those symptoms depended upon an inflammation of the parotid gland. Between the 20th and 25th the disease spread over the whole front and sides of the neck and chest, and in the same interval her pulse became very frequent, and her breathing very laborious; her cough, however, was but little troublesome. I visited her for the first time on the evening of the 25th. The swelling of the left cheek, with which the external disease had commenced, was by this time much diminished, and the cuticle there was falling off. The swelling of the neck was inconsiderable, as was that of the chest, except near the upper extremity of the sternum, where was an elevation of the skin crossing the sternum at right angles, four inches long, an inch and a half broad, and an inch high. This evidently contained a fluid, but the kind was not easily ascertained, for the fluid very readily yielded to pressure, and there was a feeling experienced, when the tumour was touched, similar to that given by parchment, or a dried urinary bladder. The apothecary had hence imagined the tumour to contain air; but the same feeling was perceivable in every part of the diseased skin below the tumour, and was most remarkable where the disease was most recent. When the diseased skin was pressed, the patient felt pain, but in no great degree: I pressed it, however, very gently. Its colour was a less bright red than that of a phlegmon or erysipelas. A little above the left breast, a piece of skin, about half an inch in length, and a quarter of an inch in breadth, was smoother than natural, and of a brown colour, resembling somewhat an eschar produced by caustic; but there were no vesicæ upon any part of the skin. The disease of the skin terminated rather abruptly, and a finger could be insinuated a little way under its edge, which felt hard. This was the case at least at the lower part of the chest, where the experiment was made. Her pulse was 136 in a minute, and not feeble; her tongue was moist, and covered with a smooth pellicle of a

light brown or greyish colour. She swallowed with difficulty, and could not open her mouth sufficiently to allow me to examine upon what this depended. Her body, which had been before bound, was now loose, in consequence of her having lately taken some medicine to render it so; the matter discharged by stool was said to be of a dark colour, and of an highly offensive smell. The urine was said to be high-coloured, but sufficiently copious. She complained that a little wine, which she had lately taken, had heated her. I was told that she had been several times delirious at night: her mind, however, when I saw her, appeared to be altogether sound.

"I visited her again on the 27th of March, soon after mid-day. The redness and swelling had extended, since my former visit, over the upper part of the abdomen. The tumour on the upper part of the chest had also increased, and the skin which covered it had become soft, so that there was now no doubt of its contents being liquid. The pulse was 150, and feeble; the breathing was more laborious, and the inside of the lips was covered with aphthæ. She was still, however, free from delirium. No discharge by stool had taken place for nearly two days. She afterwards gradually became weaker, and died in the forenoon of the following day, her mind having remained to the last almost entirely undisturbed by delirium.

"As I had never seen such a disease before, I applied for leave to inspect the dead body, which was granted with reluctance. The inspection took place about ten hours after death. The tumour over the sternum had been previously broken by some accident, and, from the report of the nurse, nearly a quart of a dark and highly fœtid fluid had issued from it. The skin of the neck and chest had entirely lost its redness; its colour now was a dirty white, except in a spot upon the left side, above two inches square, which was of a dark blue. When an incision was made through the skin of the thorax a very fœtid liquor of a dark-brown colour flowed out, the quantity of which, together with what was afterwards removed by sponges, was estimated to exceed a pint. Upon turning the skin aside, a most hideous sight presented itself, the whole cellular membrane, which covered the muscles upon the fore part and sides of the neck and chest, being discovered to be in a state of gangrene. But the muscles themselves, though immediately beneath the gangrenous membrane, and the glandular substance of the mammæ, which was nearly surrounded by it, seemed free from disease. Nothing extraordinary was found in the chest, except an ounce or two of watery fluid in the left cavity, and a slight redness in the anterior portion of the pleura costalis. The great difficulty of breathing, therefore, under which the patient

had laboured, probably arose from her suffering an increase of pain, when she attempted to use the muscles contiguous to the external disease. In bringing together the divided portions of the skin of the chest, its texture, in several places, was found too weak to retain the thread, which was employed for this purpose. No part of the body was examined besides those which I have mentioned, chiefly by reason of the repugnance of the relations, one of whom was present during the inspection. But had I then thought of it, I should have endeavoured to ascertain by what mechanism the fœtid fluid had been prevented from entering the surrounding healthy cellular texture, while it seemed to flow freely through such parts of that texture as were diseased."

I was not aware, when I determined to record some cases of submaxillary cellulitis in our Hospital Reports, of the voluminous extent of the literature which exists on the subject. A large number of cases of the disease have been placed on record, but they are for the most part scattered in the pages of various journals, and Transactions of Medical Societies, British and Continental, and therefore not for all very accessible.

It was not, moreover, until a great part of this paper was written, that I found the subject had been very fully treated, from the historical point of view, by Mr. R. W. Parker in a very interesting article in the *Lancet*, vol. ii., 1879.