

the last rib and the crest of the ilium, about the level of the spine of the first lumbar vertebra. It will seldom happen, I imagine, that we shall get such a certain means of diagnosis as we had in the case under consideration, where we had two stones in contact, and by moving them on one another produced a grating which could not be mistaken for anything else.

These, then, gentlemen, are the principal points by which you would be guided in arriving at your diagnosis in cases of calculus in the kidney. And now, having determined in your own mind that a stone exists, the question arises, what course are you to pursue? The medical treatment in these cases is unsatisfactory, and can at the best be only palliative. The only plan which holds out any hope of permanent cure is to remove the stone by operation. But are we justified in performing what must be regarded as a very formidable and serious operation for the relief of this affection? I think the answer to this question must depend upon the amount of irritation which is set up by the stone. We have already seen that in some cases the stone may remain perfectly quiescent for years, and without producing the slightest disturbance. If the presence of a stone under such circumstances were detected, I imagine no surgeon would advise its removal. Then, again, as Dr. Owen Rees has pointed out, stone in the kidney may after a time become encysted, and a patient gradually obtain relief of his symptoms.⁵ So that in cases where the symptoms are not very urgent, and have not existed for any length of time, it would, I imagine, be unwise to operate, but would rather be desirable to wait in the hope that the calculus might become encysted. It seems to me that we should confine our operation to those cases where there is a marked and progressive deterioration of the general health. Where, in fact, the patient is becoming worn out by the constant pain and drain on his system from the hæmorrhage or discharge of pus from his kidney. Even in our patient, where these symptoms were present to a certain extent, I did not feel justified in pressing the operation upon her. It was right, considering she was emaciating, that she was suffering constant pain, that her nights' rest was frequently disturbed by calls of nature to pass water, and that she had a considerable discharge of pus going on, that she should be informed that an operation could be performed for her relief. But, on the other hand, it had to be borne in mind that these symptoms had existed for some years, and that in all human probability they might go on, perhaps even diminishing in severity, for some years longer, whereas if she submitted to an operation her life might be terminated in a few hours. Accordingly, I did not, as I have said, feel justified in pressing the operation upon her, and I am not sure that she did not act wisely in refusing it, and that, had I been in her place, I should not have acted in the same way as she did.

I do not propose to say anything to you about the history of the operation of nephrotomy, further than remarking that it is as old as Hippocrates himself, but would refer you to an interesting paper by Mr. Thomas Smith in the *Medico-Chirurgical Transactions*, in which he enters fully into the history of this operation, and which I should advise you all to read.⁶

The operation of nephrotomy for removal of a calculus from the pelvis of the kidney has not hitherto been attended by much success. In modern times I do not know of any case in which the operation has been successfully performed. Though in the nineteenth volume of the *Philosophical Transactions*, as mentioned by Mr. Smith, there is an account of a case in which one Dominicus de Marchetti, a physician of Padua, removed two or three small stones from the kidney of the English consul at Venice, with such success that his pain was at once relieved, and ten years afterwards he was enabled to "undergo as much fatigue as any man of his years, and was able to ride post forty or fifty miles." Again, in the first volume of *THE LANCET* for 1874 is a short note stating that in the *Gentleman's Magazine* for August, 1733, is an account of a case in which a surgeon name Paul, of Stroud, in Gloucestershire, successfully extracted a stone as big as a pigeon's egg from the kidney of a woman.

I have only been able to find the record of two cases, in modern surgery, in which a stone has been diagnosed in the pelvis of the kidney, and in which it has been extracted;

and in both these cases the patient succumbed to the operation. In the *American Journal of Medical Science* is an account of a case, in which Mr. Whittaker removed a calculus from the pelvis of a kidney.⁷ The patient had suffered from symptoms of stone for eight years. The operation was performed by a vertical incision from the tip of the eleventh rib to the crest of the ilium, and a stone one scruple in weight and nearly an inch long was removed. The patient died of pyæmia on the fifth day. Mr. Holmes, in his work on Surgery, mentions a case in which Mr. Callender removed a calculus from the pelvis of the kidney, but he also states that the patient died.⁸

You will see therefore, gentlemen, that the operation is one fraught with danger to the patient, and one not lightly to be undertaken, or without making your patient fully aware of the risk he must run. Nor, as I have said before, is the diagnosis devoid of difficulty. In *THE LANCET* for 1870 you will find an account of a case in which Mr. Bryant performed the operation of nephrotomy and found only a bag of pus, the patient dying on the twenty-fifth day after the operation from peritonitis.⁹ And in the *Medical Times* for the same year is an account of a case in which Mr. Durham also performed nephrotomy, and found no stone.¹⁰

And now, before we conclude, let me say one word or two upon the operation itself, and they must be very few, as our time has almost expired. Of course, I need scarcely tell you that the operation is to be performed in the loin, so as to open the pelvis of the kidney from behind, and thus avoid wounding the peritoneum. Mr. Bryant recommends an oblique incision, Mr. Thomas Smith a longitudinal incision, from the last rib to the crest of the ilium, along the outer border of the erector spinæ. I do not know whether there is much to be said in favour of the one over the other; though I think on the whole I should give the preference to the oblique incision, as in this way you would cut across the line of the kidney, and thus be sure to find the pelvis of the organ in some part of your incision, instead of cutting in front or behind it, as you might do with the vertical one. Not that I think this is a matter of any great importance. I imagine that there would be no difficulty experienced in reaching the pelvis of the kidney either by the one incision or the other. The skin, fasciæ, and various layers of muscles having been divided, the transversalis fascia must be carefully incised on a director, and this would expose the fascia surrounding the kidney, which must be laid open, and thus the hilum of the kidney exposed to view. The stone should now be sought for, and if it can be felt in the pelvis and dilated extremity of the ureter this must be freely cut into, and an attempt made to extract the stone. The great point to avoid would of course be the wounding of the kidney structure, which might be attended with severe and uncontrollable hæmorrhage. So long, however, as you can confine your cutting to the walls of the dilated extremity of the ureter, the amount of bleeding would in all probability be small, and not sufficient to cause any anxiety on your part. The chief point in the after-treatment of your patient would be to take care that he was kept constantly lying on his back, in order to permit the free exit of urine through the external wound, and thus to avoid, if possible, the dangers of extravasation of that fluid.

THREE CASES OF EMPYEMA.

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CASE 1.—F. R—, aged nine, the son of a sawyer at Abbott's Leigh, was admitted into the Children's Hospital under my care on April 6th, 1877, with pleuro-pneumonia of the left side. His illness had begun five weeks previously, and was pronounced to be inflammation of the lungs with bronchitis by the medical man in attendance. The patient's condition on admission was as follows:—He was hectic-looking, thin, and breathing in a hurried and jerky manner, the respirations being 52 in a minute. The body was bathed in profuse perspiration; there was a short dry cough, and orthopnoea, but no history of hæmoptysis; the tongue was

⁵ Croonian Lectures on Calculous Disease and its Consequences, p. 40, 1856.

⁶ Med.-Chir Trans., vol. lii., p. 211.

⁷ American Journal of Medical Science, vol. lxx., p. 279.

⁸ Surgery, its Principles and Practice, p. 732.

⁹ THE LANCET, vol. ii., July 2nd and Aug. 27th, 1870.

¹⁰ Medical Times and Gazette, 1870, p. 61.

dry and fissured; the pulse quick (120) and feeble; temperature 101.4°. Physical examination of the chest revealed, on the left side, absolute dullness upon percussion both anteriorly and posteriorly, faint respiratory murmur, diminished vocal fremitus, and the heart's apex displaced slightly to the right of the left nipple; on the right side there was clear resonance both in front and behind, and puerile breathing. On account of his extremely weak condition, he was ordered a mixture of carbonate of ammonia, to which tincture of belladonna was added in order to allay both the cough and perspiration.

On April 9th he was able to lie down, and the cough and perspiration had diminished. He had now diarrhoea, the motions being loose, of a yellow colour, and having a very offensive smell. On the 14th the diarrhoea had quite ceased, but for a few days he had been in a very drowsy condition, sleeping a great deal. On the night of the 13th he passed a round lumbricoid worm, about seven and a half inches long; on the 16th six more, and on the 17th two more.

On April 30th a tumour was noticed for the first time in the left side between the sixth and seventh ribs. There was distinct fluctuation in it, and the skin looked red, thin, and as if it would be likely soon to give way. Temperature 98.4°. The tumour was diagnosed to be an empyema pointing externally.

On May 1st an incision was made under the carbolic spray, and about two ounces of healthy pus let out. A drainage-tube was then put in, but as it was being introduced the spray apparatus got out of order and ceased to work. Lint steeped in carbolised oil was employed as dressing, and a layer of cotton-wool placed over this. On the following day the opening was enlarged as very little pus had been discharged, but there was no material increase in its flow. On the 8th the tube was taken out, and pig. iodi ordered to be painted over the left side.

May 17th.—There was a very free discharge of pus this morning, and also a return of hectic symptoms. At my request my colleague Mr. Ewens kindly opened the thorax between the ninth and tenth ribs just below the inferior angle of the scapula, according to the plan of Bowditch, of America. The drainage-tube was passed through both openings and a poultice applied.

18th.—The pleural cavity was freely discharging, but the pus flowed almost entirely through the upper and older opening. The poultice was left off, and carbolised tow alone used as dressing.

25th.—The tube was taken out, and not reintroduced. The discharge of pus still continued to be very free.

27th.—The patient was attacked with acute bronchitis. Moist râles could be heard all over the chest on both sides, both in front and behind, and there was copious expectoration of glairy frothy mucus.

On June 6th he began to whoop. On the 10th he was delirious during the night. On the 16th he passed another round worm quite a foot in length. This was the tenth lumbricoid he had voided during his stay in the hospital.

On the 23rd he had greatly improved. The bronchitis and whooping-cough had left him, the pleural cavity had ceased to discharge for some days, and he was daily gaining flesh. Physical examination of the chest showed that the dullness was still well marked over the left side, but the heart had returned to its normal position, and the respiratory murmur was quite audible all over the left lung except at the base, where it was rather faint. On July 7th he was discharged cured.

CASE 2.—E. S.—, aged three years and a half, the child of a draper's assistant in Bristol, was admitted under my care on July 10th, 1877, for left empyema. She had been ill about a month, but her parents had not sought for medical advice before. As I was away from home when the patient came into hospital, the house-surgeon, Mr. J. R. Lewis, M.B., drew the attention of my colleague, Mr. Ewens, to the case, who, after consultation with the other members of the staff, decided to open the pleural cavity at once, as the breathing was very quick and embarrassed, and there was absence of respiratory murmur in the left lung, with well-marked dullness upon percussion over the left side, and displacement of the heart beyond the line of the right nipple.

The patient was put under the influence of chloroform,

and Mr. Ewens made an opening under the carbolic spray between the tenth and eleventh ribs, slightly posterior to the mid-axillary line. About four ounces of pus were evacuated, which gave almost immediate relief to the urgent symptoms. The wound was dressed antiseptically, and the patient was put on beef-tea and milk and a mixture of bark and iodide of potassium. Next day a drainage-tube was put in under the carbolic spray. On July 13th the dressings were removed in the evening. There was a very free discharge of pus. The patient seemed brighter, and breathed quietly. The temperature was normal. On July 15th the wound was again dressed, and the pus was found to be flowing freely through it. On the 16th the patient was ordered cod-liver oil and hypophosphite of lime.

At the time of my visit, on the 18th, I found that in consequence of the child constantly wriggling about in bed, the dressings had slipped from over the opening into the thorax, and left it exposed to the air. However, no harm seemed to have resulted, and I simply placed a pad of lint soaked in carbolised oil on the opening, and over that a layer of oakum to absorb the pus, which was flowing very freely, and was of a healthy character.

On July 21st the tube was taken out. On the 28th the flow of pus had considerably diminished in quantity, and on Aug. 9th it had ceased; but on Aug. 13th it began to flow again just as freely as at first, and it continued to do so more or less freely till Sept. 3rd, when it ceased entirely, and the opening rapidly closed.

On Sept. 19th the patient was transferred to the convalescent ward, but next day she was attacked by measles. She however, went through it without sustaining any harm, and was discharged well on Oct. 6th, 1877.

CASE 3.—F. H.—, aged five, whose father is a warehouseman living in a suburb of Bristol, was admitted under my care on Oct. 4th, 1878, for a swelling in the right mammary region, in which only an indistinct sense of fluctuation could be obtained immediately above the nipple. The patient had pleurisy five months ago, and the swelling was noticed for the first time about a fortnight since, but during the past three or four days it had become more prominent. The patient was very thin and emaciated (weight twenty-six pounds); she was hectic-looking, felt sick, breathed rapidly, had a cough, and the tongue was coated with a thick fur which had a red stripe down the centre. The temperature was 98.8°; the urine was straw-coloured, slightly acid, contained no albumen, and was of a specific gravity of 1028. Physical examination of the chest revealed on the right side dullness upon percussion both in front and behind, and feeble respiration, while there was on the left clear resonance and puerile breathing. As I had to go out of town next day, my colleague, Dr. A. Steven, kindly took charge of the case, and on the 17th he requested Mr. Ewens to explore the pleural cavity with a grooved needle, which was passed in at the sixth intercostal space in the mid-axillary line, and as pus was met with a trocar was thrust in at the same opening, and four ounces of pus were let out. Next day the breathing was distinct behind, but feeble and distant in front, and there was some creaking from air having got in and caused emphysema.

On Oct. 23rd, at my request, Mr. Ewens introduced a trocar at the seventh space, and ten ounces of pus came away. After this the emphysema was less marked; and on the 28th, when the patient's weight was taken, it was found to be 28½ lb., which was a gain of 2½ lb. since admission. As, however, the pus had reaccumulated, and I could distinctly feel it below the clavicle between the ribs, on Nov. 4th I requested Mr. Ewens to enlarge the former opening with a knife and insert a drainage-tube. He kindly did so, and about four ounces of pus came away at the time of the operation. The carbolic spray was not employed, because I did not see the necessity for it, as air had got into the pleural cavity at the first tapping. On the 9th the emphysema had completely disappeared, but the pus continued to flow persistently for the next two months. The patient nevertheless gained flesh, for her weight on Dec. 3rd was 30 lb., and on Jan. 11th 33 lb. On Jan. 1st the drainage-tube was taken out, and a few days after the opening closed. On the 15th she was sent to the convalescent ward, and on Feb. 2nd she was discharged well, the breath-sounds being clearly heard in every part of the right lung, although decided dullness still remained over that side. Her diet was throughout generous, consisting of milk, eggs, fish, fowl, and meat. Her medicine consisted of tonics, quinine and iodide of potassium, and cod-liver oil. Her temperature was never

high, and only on two occasions rose as high as 102.6°, and these were the evenings of Oct. 21st and 30th.

Remarks.—In the treatment of empyema the different surgical methods which have been suggested and put into practice may be grouped into three divisions: 1st, that of aspiration; 2nd, that of tapping; and 3rd, that of incision.

1st. Aspiration has been pretty generally tried, but I think has not accomplished the amount of good that was anticipated at one time would result from its more extended use. On the few occasions I have seen it employed in this class of cases I must say I was not favourably impressed by it, as the needles became blocked by flakes of lymph, which were mixed with the pus. Fraentzel says he has overcome this difficulty without rendering it necessary to reintroduce the trocar by the construction of a trocar with a lateral tube and stylet. The stylet in the cannula is drawn back only so far as to clear the aperture of this lateral tube, and may at any moment be thrust forward again, and thus the fluid flows away by the lateral aperture. A full description of his instrument is given in Ziemssen's "Cyclopædia of the Practice of Medicine," vol. iv., p. 704.

2nd. Tapping by means of a trocar and cannula appears at first sight to be all that could be desired, as the relief given to the patient's urgent and distressing symptoms is so striking; but, except in cases where the pus is confined in a limited and circumscribed region by adhesions, a cure is seldom effected; and the operation has usually to be repeated again and again as the fluid more or less quickly reaccumulates, and in the end an incision has to be made.

3rd. The method of making a free incision into the pleural cavity is finding increased favour, and, although my experience is too limited to allow me to dogmatise, it is a procedure to which I give a decided preference, and which I have pursued in the cases related above. It is based on true scientific and surgical principles. We see nature adopting it when an empyema points and discharges itself, either externally, or internally through the lung-tissue into the bronchi, and the patient recovers; and we have a further illustration in surgical practice where surgeons are wont to make a free incision into an abscess, as we know with the best result. Why then should we adopt a mode of treatment for a collection of pus in the pleural cavity differing in no respect from that in another part of the body, where it is the result of acute inflammatory action? Fraentzel, to whom I have alluded before, truly remarks: "It is on account of these sad experiences of exhausting purulent fever, years of failing health, &c., taken in connexion with the fact that puncture in purulent effusions but very rarely leads to recovery, that what is called the 'radical operation'—that is, the withdrawal of the pus by means of an incision into the pleural sac—has come more and more into favour." After describing the way in which he performs the "radical operation," he concludes thus: "It is the therapeutic method which I regard as the most rational, and with which I have obtained the best results."

With regard to the question *where* we ought to make the incision, there will of course be a divergence of opinion, founded on different experiences; but nearly everyone will agree that in the case of an empyema pointing externally, the incision should be made there. When, however, there is no such indication, I believe it will be better to make the incision in the mid-axillary line, in either the fifth or sixth intercostal space on the left side, and in the sixth or seventh on the right side. Bowditch (of America) has recommended the ninth space, just below the inferior angle of the scapula; but, as Fraentzel observes, there are likely to be thick adhesions there, and in one case in which I tried it I found that the pus came more freely through a former opening which had been made in the mid-axillary line, notwithstanding that the latter was the higher of the two openings. Another reason I believe is, that patients with pleuritic effusions do not lie altogether on their backs, but rather more on the affected side, in order as much as possible to lessen the pressure of the fluid on the lung, and so the higher opening becomes the more dependent. The employment of the carbolic spray at the time of operation and when the dressings are removed decidedly lessens the risk of septicæmia, pyæmia, &c.; but these are evils which I am inclined to attribute rather to the fact of the pus being unable to escape than to that of the air entering the pleural sac, and it is on this account that a large opening should be always made. All the dressing necessary to employ is oakum.

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REMARKS ON CELLULITIS OF THE NECK (ANGINA LUDOVICI).

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PHLEGMONOUS CELLULITIS of the neck is not by any means a common disease. As cases of the kind have recently come under my own observation, I have thought that a short account of them, together with a few remarks, might not be out of place.

CASE 1. *Gangrenous cellulitis of the neck; spontaneous onset; asthenia; death.*—Charlotte R—, aged two years, was brought to me as an out-patient at the Children's Hospital on Nov. 16th, 1877, suffering from an inflammatory œdema of the front of the neck; it extended from the chin as low down as the sternum. The mother stated that the child had been very ill some weeks previously. She (the mother) thought that the child might have had measles, but as there had been but little rash she was not certain. (Measles was epidemic in this district at this time.) When first seen the front of the child's neck presented a brawny induration; the skin was slightly reddened, and the part pitted slightly on pressure. The brawniness involved the front of the neck between the two sterno-mastoid muscles, and extended from the chin to the sternum. Although its margins were not absolutely defined, the swelling was nevertheless well localised. The disease had come on quite suddenly. The mother, on being asked, did not think that the glands behind the angles of the jaw had been previously enlarged before the general œdema had supervened. She could not tell me at what point it had first commenced. The fauces and mouth presented nothing abnormal. The breathing was not embarrassed, nor was swallowing interfered with. The mother refused to leave the child in the hospital. Incisions were therefore made at one or two points where suppuration was suspected, but without finding pus. At the next visit the child was much lower. There had been a free discharge of a stinking ichorous pus, and several large sloughs had come away. The child was now left in the hospital. Brandy, ammonia and bark, milk and eggs were freely administered, but the child rapidly sank.

The autopsy revealed extensive lobar pneumonia of both lungs. Heart and pericardium normal. Abdominal viscera also normal. The muscles in front of the neck (sterno-mastoids and the depressors of the hyoid bone) were all exposed down to their origins, and looked as though they had been dissected.

CASE 2. *Glossitis (so-called); abscess in the supra-hyoid region, with general inflammatory œdema of the neck, especially on the left side; rapid onset; rapid subsidence; recovery.*—John K—, aged twelve and a half years, was admitted on Sunday, September 8th, 1878. On the previous Thursday evening (up to which time he had been quite well) a "small lump" was noticed by his mother below the jaw on the left side. This increased in size, and on the Saturday following he was first seen at the hospital in the casualty room. He had then what appeared to be an ordinary abscess forming in the neck. He was seen again on the following day (Sunday) at 10 A.M., and was found in much the same condition. He remained so until 4 P.M. At this time he began to complain of his tongue, which was swelling; by 6 P.M. (that is, in the course of about two hours) his tongue was swollen to quadruple its normal size, so that it protruded from his mouth, which was no longer large enough to hold it. He was brought to the hospital a second time, and was admitted about 10 P.M.

His condition on admission, as noted by Mr. Hutton, assistant resident medical officer, was as follows:—There is considerable swelling below the jaw on the left side, and to a less extent on the right side; no distinct fluctuation can be made out; there is great œdema. The cheeks are a little swollen. The tongue is very much swollen, red, and tense, protruding between the teeth, and preventing closure of the mouth, which is open to its full extent; the swelling is confined to the front part of the tongue. Large quantities of thick, glairy saliva were being spat out.

On Sept. 9th, the breathing having become more uneasy, it was determined to explore the neck. An incision was