the urine passed freely. The most tender spot is about one inch to the left of the umbilicus, only reached by firm pressure. There is no hernia. I ordered her hydrocyanic acid mixture, with two grains of calomel and a grain of opium, in a pill, every six hours: the abdomen to be swathed in hot wet flannels, and a copious warm water enema to be administered at night. The enema brought away a very little pasty looking matter. Judging by her sensations, it must have passed high up into the colon. Three pints were injected.

Monday. The vomiting continues, if anything is taken. The bowels are more swollen. The pain is still more intense in the same spot, but it seems to have moved about. There is not much general tenderness of the abdomen. She lies with the legs down, and can bear pressure. The countenance is more anxious. The following medicine was ordered:—

R Pilulæ sapon. c. opio gr. iv; pilulæ aloes composiæ gr. j. M. Fiat pilula quartis horis sumenda.

R Olei ricini ʒss; olei terebinthinæ 3 ij. M. Fiat haustus. She was directed to have soda water for drink.

Tuesday. There has been no evacuation, but vomiting continues. The bowels seem hardly so tympanitic. Pulse 110. She has not slept much.

6 p.m. The vomiting has continued; the vomited matters have a fecal odour, and evidently contain the oil and turpentine. She looks better, and is more quiet.

Wednesday. She is more quiet; has no pain in abdomen but in one spot over the spleen. She has vomited only once. She seems very sleepy, and quite under the influence of the opium. She was ordered to discontinue the pills, of which she had taken seven.

8 p.m. She is still very sleepy; has had no sickness. She has had beef-tea. Pulse 90.

Thursday. She looks and feels better in every respect, but is still very drowsy. The tongue is cleaner. The bowels were moved at 12 in the night, when she had a copious thick motion, with lumps in it; and twice since she had more fluid motions. The pain moved, she says, as the bowels acted; it is now much less. The abdomen is still tympanitic. The countenance is more natural.

7 p.m. The bowels have been moved again, Pulse 105. The pain seems moved; she now feels it about the umbilicus, and it is of a gripping character. She is free from sickness and tenderness. The motions passed contained solid matter, small in calibre, like a child's. The tongue is cleaner. The effect of the opium has passed off. She was ordered to have a grain of opium in a pill, to be repeated if restless.

Friday. She is better in every respect. The bowels have been again moved. She had a good night. The abdomen is less full and tense; the tongue cleaner; pulse 90. She asks for food.

Saturday. She is improving. There are gripping pains across the colon. Tongue almost clean. She has had no motion. She was ordered to have half a grain of opium at night, and half an ounce of castor oil next morning.

Sunday. She is much better; bowels moved. There is no tympanitis.

From this time she rapidly improved, and lost all pain, except an occasional return of the old uneasiness in the epigastrium; but required some doses of hydrargyrum cum creta and castor oil, to promote the evacuations, and to correct their quality. She is now quite well, with the bowels acting regularly.

REMARKS. There was here, happily, no *post mortem* examination to give certain information as to the lesion, and its exact nature can only be a matter of conjecture. There was not sufficient tenderness, nor did the symptoms otherwise point to peritonitis nor enteritis as the cause of the obstruction; nor had she ever suffered from either of these, to induce constriction of the gut by bands, or bridges, or old adhesions; and I was therefore inclined to diagnose intussusception. It will be observed that the relief of the bowels was very slight from the Tuesday to Saturday, probably only the effect of the enemata acting from below the obstruction, as is frequently the case in hernia; also that, on Thursday, Friday, and Saturday, the vomiting was incessant, whilst for the five following days there was no action of the bowels at all. The early vomiting would lead to the supposition that the obstruction was high up in the canal; but the second case referred to, in which the vomiting was a prominent symptom all through, seems to discountenance or afford an exception to the general rule, that vomiting is earliest and most severe when the jejunum is involved; for here the lesion was in the sigmoid flexure of the colon. In all three cases, the secretion of urine was uninterrupted, as usual

when the obstruction is low in the canal, and absorption of fluids can continue. In the present case, the abdomen was only moderately tumid. From all these circumstances, and the seat of the pain, with its apparent mobility, I was led to ascribe the obstruction to the lower part of the ileum. Intussusception may be remedied by the disinvagination of the involved portion of gut, or, as in a case that occurred in our infirmary some years since, in which nine inches of gut passed in a motion from the bowels, by separation of the invaginated portion, or by adhesion at the neck of the involution, the in-folded portion remaining and narrowing the tube. The latter may have been the case here, and would appear to be so, from the peculiarly small and compressed appearance of the solid fecal matter. However speculative these suppositions may be, the case affords another instance of the advantage of treating intestinal obstruction by opium, or opium in conjunction with aloes, rather than by attempting to overcome it by purgatives.

TRACHEOTOMY IN CROUP.

By THOMAS O'CONNOR, Esq., March, Cambridgeshire.

Is tracheotomy likely to combat the formidable disease, croup? If so, what is the time to be selected for its performance?

This is a question of statistics—a grave problem to be solved only by a faithful and minute record of cases.

One would not resort to so severe a proceeding as that of opening a windpipe of a child before exhausting every other means of saving life, and until he was reduced to the alternative of either performing the operation, or informing the friends of the patient that the case was beyond the control of medicines.

Let us suppose a case in which the hot bath, bleeding to syncope (if not to syncope, it were at least useless), antimony in full doses every half hour or every hour, calomel in small doses every two hours, and blistering the throat, have been fairly tried in vain; where the pulse is small, and ranges from 140 to 160 or 170 in a minute; where the countenance is assuming a leaden hue; where the efforts at respiration are painfully laborious, and the abdominal muscles are brought into play to their utmost. Is the patient at this stage to be abandoned to a certain fate, the most horrible to witness, that of slow strangulation, torturingly protracted? or is the surgeon to make an opening into the trachea, and at once relieve the breathing? It appears to me, that if nothing more were gained than the remarkable ease this proceeding gives the patient, it would be quite sufficient, on the score of humanity, to determine the question.

CASE. I was called about two o'clock in the afternoon of December 13th, to a girl six years old, suffering from croup. I at once bled her to syncope; and when she had rallied from the faintness, placed her in a hot bath, which was maintained at a high temperature until the head and face were covered with large drops of perspiration. This condition is perhaps the most simple, and at the same time the truest criterion of the full effect of a hot bath. Antimonial wine was then given, in ten-minim doses, every half hour; a blister was applied round the throat from the chin to the sternum; and two grains of calomel were given every two hours. The antimony and calomel were continued in these doses for sixteen hours; the former kept up constant nausea, the latter produced no visible result; and I may here say at once that I have never seen calomel exercise any control over croup.

December 14th. At six o'clock, it was evident that if I trusted to medicine alone, the patient must perish miserably in a few hours. I proposed to her friends to open the trachea; and with their consent fixed seven o'clock for performing the operation. I left for the purpose of providing myself with the necessary implements, and had just arrived at my residence, a mile distant, when I was overtaken by the father of the girl, who informed me that the mother had changed her mind, and "would not have her child pulled about"; consequently, that the operation must be abandoned. She, however, urged by the advice of her neighbours, and, it may be, by the struggles of the child, relented between nine and ten o'clock at night, and sent to request me to perform the operation. I at once proceeded to the house, and opened the trachea. On dividing three or four of the rings, the adventitious membrane was squirted out through the opening with a force equal to that of a popgun. On blowing through this membrane, which, considering it the growth only of a few hours, was of astonishing density, it was found to be a very good cast of the trachea from the cricoid cartilage down to the bifurcation, extending a short

way into each bronchus. The relief was marked and instantaneous. I then placed a double canula in the opening, and secured it there, and gave the child a cupful of milk, which she enjoyed very much. I then left, having instructed the attendants to call me if difficulty of breathing or distress should return.

December 15th, 8 A.M. The child was breathing freely, apparently doing well. She had had a good night, and slept several hours. I removed the inner canula, cleaned, and replaced it. From the time of the operation, I withdrew the antimony, and gave tincture of squill in syrup as an expectorant. I had now to leave town, and did not return for three hours, when I learned that I had been sent for to this child half an hour before. I repaired thither at once, and was told that the child suddenly awoke, appeared distressed for a moment, and then expired. On withdrawing the canula, which was *in situ*, a plug of fibrine followed adhering to it. Did this fibrine, which, no doubt, was a part of the false membrane, make its way into the mouth of the canula, and, in the patient's weak state, destroy her? As I was unable to obtain a *post mortem* examination, owing to the prejudices which people have to this proceeding in country places, I am not prepared to give a satisfactory answer to this question.

At the hazard of appearing prolix, I have related *gradatim* my proceeding with this case; not because anything new has been done, but with a view of placing before my professional brethren the conditions which have been complied with, and the result; and not without a hope that others may ventilate the subject a little by giving the results of their experience.

The operation in this instance ought to have been done earlier; for, as I would not preach precipitation in opening the windpipe of a human being of any age before the necessity was clearly established, so I would not recommend the loss of time when once that condition became patent, for every hour lost here is adding to the impurity of the blood, impairing the nervous energy, and lowering the recuperative powers of the patient.

CASES OF LITHOTRITY.

By WILLIAM THOMAS BELL, Esq., Great Grimsby, late House Surgeon to the London Hospital.

[Continued from page 26.]

CASE II. *Exhibition of Chloroform: Suppression of Urine for Forty-eight Hours; Collapse nearly fatal: Ultimate Recovery.* March 1856. R. T., aged 68, a gentleman of active habits, short stature, with grey hair and sallow pale complexion, had suffered greatly for some years from hæmorrhoids and prolapsus, accompanied with considerable irritation of the bladder, followed by hæmorrhage upon exertion. He came under my care some months ago for hæmorrhoids and prolapsus; a considerable portion of the covering of the prolapsus was ulcerated, from which a free discharge of pus took place. As an application, I ordered a strong solution of nitrate of silver to be applied by means of a camel's hair brush; and astringent injections, as alum, sulphate of zinc, etc.; at the same time carefully regulating the bowels by gentle aperients. There was an open vein at the ulcerated point, to which I applied successfully the actual cautery. As the irritation of the bladder kept increasing, I suspected something more than sympathy between the rectum and bladder or prostate, although the symptoms of stone were not at all conclusive. There was no pain after nor difficulty in passing urine; the stream was slightly forked; there was a frequent desire to micturate, greatly increased by exertion, as walking or riding, with slight uneasiness, although not amounting to pain at the extremity of the penis. The urine was quite clear. There was also hæmorrhage from the bladder upon exertion. The sight of water, or putting his hands into it, increased the irritation, or produced an urgent desire to micturate. He was constantly disturbed at night. My patient was called to London upon business, and, not feeling so well while he was there, consulted an eminent surgeon, who sounded his bladder, but failed to detect a calculus, and attributed his symptoms to disease of the prostate gland, which was enlarged (at the same time giving him a guarded opinion about his having stone). Some years ago, my patient passed a number of small lithic acid calculi; and from that time his bladder has not been quite comfortable.

With these symptoms, I sounded him, and readily found a hard calculus. Taking into consideration his general health, I urged him to have the stone crushed; and to this he readily consented. The stone was very hard, and required great force to break it. The operation was at first performed under chloro-

form; the third was followed by severe rigors, urgent and continued vomiting, and collapse, which were combated by stimuli, warmth, etc. After the fourth operation under chloroform, the same train of symptoms followed, in an aggravated form. I was hastily summoned to his residence, and found him in a state of collapse, and suffering violent pain in the pubic region, which led me to suppose that the bladder had given way from some cause. After this, he had total suppression of urine for forty-eight hours; his tongue became much furred; he was unable, or nearly so, to speak, or to notice anything that was going on around his bed; he was sensible when roused. Pulse small and intermitting, and scarcely perceptible.

The treatment adopted was the warm bath, at a proper time; after the collapse had passed off, dry cupping to the loins, turpentine over the lumbar regions, sinapisms to the pit of the stomach, and large enemata of warm water thrown up into the colon by means of a long tube. His sickness and hiccup persisting, I gave him creasote in one drop doses every four hours, and brandy and soda water occasionally. He was ordered a light farinaceous diet. With these alarming symptoms, my father and myself considered him dying.

After total suppression for forty-eight hours, he passed urine with several fragments of calculus; prior to this, I carefully examined the bladder, and could not detect any urine in it, and my patient never once had the desire to pass any after he rallied from his depressed state; he attributed his symptoms to the *chloroform*, and urged that other operations, if necessary, should be performed without it.

There was no hæmorrhage after any of the operations from the bladder. On some occasions, after injecting the bladder prior to an operation, it was found so very intolerant that the operation had to be postponed until the following day.

After the urgent symptoms succeeding the fourth operation, I left the patient alone for three weeks until he recovered his strength. I administered quinine, and ordered a generous unstimulating diet, gentle out-door exercise in his close carriage, a hip bath occasionally, and barley or linseed water *ad libitum*.

At each successive operation very little was done at once. A few fragments were crushed as quickly as possible; then the lithotrite was withdrawn; and this I repeated at his urgent request about every third day when circumstances would admit of it. From this time to the termination of his case not one bad symptom arose; a large quantity of hard fragments were passed; his bladder and rectal symptoms subsided, and he made a good recovery, and was able in July or August to take a month's tour on the continent with enjoyment and comfort.

REMARKS. The first point of interest in this case is the sudden collapse succeeding the fourth operation under chloroform; he required a good deal of this anæsthetic before getting sufficiently, although in not one instance perfectly, under its influence, to allow of the operation being performed. The next point is the marked effect of chloroform, always producing vomiting and rigors; and none of the symptoms arising during the after operations, where it was not used; hence I have no doubt that it was the cause of his urgent and nearly fatal symptoms. The vomiting was insuperable, and the hiccup continuous for hours, and was relieved for a time by creasote in one drop doses, and ice to suck, with counterirritation by sinapisms over the pit of stomach. He took very little medicine, occasionally an aperient in the form of pill, and a little liquor potassæ, with tincture of henbane at his pleasure; he drank largely of diluents, as barley water and milk; he had some slight difficulty in passing the fragments, some of them remaining in the urethra for some hours. The suppression was no doubt from sudden chill, and checked skin action; but at first I feared he was suffering from renal calculi, although the lumbar pain was not severe. About three weeks was allowed to pass by before attempting another operation, to restore the secretions, and to recruit his health; the fragments of calculus were very hard, and some pieces were of considerable size; at the first attempt to crush it great difficulty was experienced, requiring all the force I could use with Fergusson's lithotrite. I have little doubt that it was a flat calculus, and broke in a star direction; the fragments readily broke up afterwards. He had a horrible disgust for physic. He was a capital patient, and rendered me every assistance at the operations. It is about seven months since he had the last operation performed, and he has not suffered any inconvenience from the bladder since; he can take horse exercise, walk, and shoot with comparative comfort. I feel confident that, had lithotomy been performed in this case, he would never have rallied from the shock of operation. On the whole, about ten operations were performed. My patient found the hot hip bath of great service during treatment.