revealing the true nature of the origin of the cardiac trouble. As is well known, the younger the subject of rheumatism, the less are the joints affected and the more likely is endocarditis to attack the valves of the heart, and therefore any mention of pains in the limbs of a child, however slight and unimportant they may appear to the parent, should at once excite the suspicion of the medical man and direct his attention to the heart. Frequent auscultatory examination should be made, and probably endocarditis would often be found assailing the valve structures to a decided degree, though not to an extent which would of itself yield visible signs to the observers, and direct attention to the condition of the heart. The recognition of endocarditis at such an early stage of life, followed by prophylactic treatment directed against the crippling of the valves along the lines indicated in the discussions at the Clinical Societies of London and Chelsea, would diminish the severity if it did not ward off altogether the development of the insidious inflammation which leads to the condition of the heart found in later life.

FAILURE OF RESPIRATION DURING ETHER ADMINISTRATION.

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ETHER has come to be considered so safe an anæsthetic when administered in a Clover inhaler, and accidents during the administration have become so very rare, that facts as to any marked divergence from the normal course of events must be of considerable importance to physiologists and to others interested in the action of the drug on man.

From this point of view the following case is worth recording for comparison with that related by Mr. W. J. McCardie, of Birmingham, in the *BRITISH MEDICAL JOURNAL* of January 20th, page 138.

In the summer of 1892 a strong, healthy woman, aged 40, was admitted to St. Bartholomew's Hospital to undergo a radical operation for the cure of inguinal hernia.

I gave the patient nitrous oxide gas and ether in the ordinary way with a Clover inhaler of the usual pattern to the top angle tube of which I had fitted a smaller tube supplied with a stopcock for the admission of nitrous oxide gas to the bag. The patient took the anæsthetic extremely well, these were no unusual symptoms, no coughing, no sickness, or struggling or rigidity, while the pulse and colour were good. About midway through the operation, however, the respiration began to be less vigorous, and the lips became a little pale. I at once ceased to give the anæsthetic and removed the inhaler. At this time the pulse was still good, and I saw no reason to interrupt the operation. Gradually the respiratory movements became more feeble, until at last they entirely ceased several minutes after I first observed the signs of failure of breathing. The pulse still remained strong and regular, the colour was fairly good, there being very little cyanosis; the pupils were small, there was no corneal reflex, and the patient was sweating freely. I immediately started artificial respiration and injected a minim of *liq. strychnina* into the wall of the thorax, at the same time I satisfied myself that the air passages were free. The head was lowered, the lower limbs were raised, hot towels were placed on the chest, and the battery was applied to the neck synchronously with the movements for artificial respiration. When the artificial respiration was stopped for a moment no signs of any automatic movement of the chest walls could be seen.

Meanwhile, the patient became increasingly cyanosed, so much so that the lips were of a blue-black colour; the heart slowly failed until no pulse could be felt at the wrist, and the pupils became widely dilated. When these serious symptoms occurred I had been performing artificial respiration for about eight minutes, then followed gradual recovery. The patient began to make some efforts to breathe. She would give two or three slight gasps, and then the chest wall would again be motionless. Her colour slowly improved. Artificial respiration was continued until the breathing had returned to its normal automatic regularity. The pulse continued to improve, the patient eventually assuming the appearance of health that she wore before the onset of the alarming symptoms. The operation was resumed, and as the patient began to show signs of returning sensation I commenced to give chloroform on a square of folded lint, and continued to do so to the end of the operation, which was completed without any further difficulty.

The next day I made a thorough examination of the woman. Except for some pain in the back, where the edges of the table had pressed on her spine, and also for some pain in the chest, due to partially ruptured pectoral muscles, she had experienced no ill-effects from her grave condition on the previous day, nor, in fact, did she in any way appreciate her narrow escape. I found the heart and lungs quite sound and healthy. She could not remember suffering from any shortness of breath, palpitation of the heart, or oedema of feet, nor had she ever had any symptoms that might have led me to act more cautiously or to anticipate difficulties in administering ether.

It will be seen that this case had a general agreement with that recorded by Mr. McCardie. But I must confess that the explanation which he offers—that of spasm of the glottis—

did not at that time, or since, ever cross my mind. The sequence of symptoms, indeed, was by no means such as might have been expected on such a hypothesis. They are, for instance, quite different to those of laryngismus stridulus. In Mr. McCardie's case ether had only just replaced nitrous oxide, and hence his explanation that spasm of the glottis occurred as a result of the new stimulus of the ether is perhaps plausible. But in the case which I have just recorded the patient had been under ether for a quarter of an hour or more, and was well under the influence of the drug—so far anæsthetised, in fact, as to make reflex muscular spasm of any sort a very unlikely event.

In cases of this kind it is essential on theoretical grounds to commence artificial respiration at once. If we perform tracheotomy we waste valuable time, and a few moments lost at this period may be literally a matter of life or death. In fact, it may be said that a few moments during which the air remained stagnant in the lungs may be sufficient to place the patient beyond hope of resuscitation; to lose any time between the cessation of respiration and the commencement of artificial respiration is to court disaster. Is not the whole question one of keeping the patient alive until the respiratory centre has had time to recover itself? It appears to me that direct action of ether upon the respiratory centre of the brain, leading to its failure, is the probable explanation of the occurrences in question. Why they happen in a small number of cases of ether inhalation, and do not happen in the vast majority, it is not easy to explain. But it is no more easy to explain the exceptional readiness with which a minority of patients are occasionally found to respond to doses of other drugs which on the majority are almost without effect. Alcohol is an instance in point.

Most anæsthetists will agree with Mr. Barling that serious laryngeal spasm during the administration of anæsthetics is very uncommon, and, indeed, any spasm at all is very unusual after the first few minutes of the operation if the patient is kept deeply enough under. When a patient has taken enough chloroform or ether to abolish his corneal reflex, we should hardly expect the muscles of his glottis to respond readily or vigorously to the delicate stimulus of the fumes of ether or even to the coarser stimulus of the tip of a finger introduced into the larynx. If the patient is not kept deeply enough under the influence of the anæsthetic, any irritation of the glottis may be sufficient to cause spasm; but spasm of the larynx produced under these conditions need not cause the operator any anxiety provided that no foreign body has found its way into the larynx.

ON SOME PRACTICAL POINTS IN CONDUCTING THE ADMINISTRATION OF ANÆSTHETICS.

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THE administration of an anæsthetic must be regarded as an art, in which, as in every branch of surgery and other arts, perfect facility is only attainable by constant, long-continued, careful practice.

Few members of our profession appreciate surgical dexterity more keenly than the practised anæsthetist, and, conversely, the proficient surgeon sets the highest value upon a trained administrator's skill.

A smooth performance is the outcome of very careful forethought and appropriate training, but these factors in the art of the anæsthetist are apt to receive less attention than is due to them. The minutest details of procedure must be considered in order to gain success, and no action should be neglected which will contribute to the finish of the result.

The moving of a patient from his bed to the operating table often requires a little strategy, even when both are close together in one room. Those who lift a patient should never stand on opposite sides of his body for two reasons: (1) Because the lifters take up too much space to easily traverse an ordinary furnished bedroom; and (2) because the lifting power is much greater when the patient's body can be held close up

to the lifter, that is, when the latter can bring his feet beneath the centre of gravity of his own body and the lifted weight.

Two persons standing side by side can lift almost any ordinary patient, one supporting the weight of his head, shoulders, and back, and the other that of his pelvis and legs. The head-lifter should pass one hand beneath the patient's shoulders and grasp his further arm above the elbow, allowing the patient's head to rest upon his own biceps. He should pass his other hand and arm beneath the patient's back, whilst the foot-lifter takes the pelvis and legs. They then both raise his body up to the level of their own chests and walk sideways (which is quite easy if even step be kept) to the table for operation.

The position of the table with regard to the bed is the point which is often unconsidered. The rule should be the following: Place the foot of the table towards the head of the bed at a right angle to it, or *vice versa*; the head of the table towards the foot of the bed at a right angle to it; then move the table into position. Thus the lifters, standing within the angle formed, will only need to turn a quarter-circle in order to deposit the patient upon the table. Now, this rule "Head towards foot at a right angle" holds good even when the bed and table are not close together, but separated by a long interval.

It will be seen, if this be borne in mind, that after carrying a patient from one room to another the lifters will arrive at the proper side of the table, and then, by making a quarter turn, will complete the movement of the patient. What could be more awkward than the bungling of a patient from table to bed if placed pillow to pillow, side by side? In that case, if the lifter stands between the bed and table, he either himself arrives upon the bed with the patient's body on his lap, or if a half turn be made the patient's head arrives at the foot end of the bed. By another bad method, the feet and the shoulders are seized by persons at either end, and the patient may drop to the floor while they shuffle him laterally from one couch to the other.

When an operation is just completed, supposing the table to be at right angles to the bed, and its head towards the head of the bed, all that is needed to avoid the lifters being in their own way is to turn the table parallel to the bed, with "head to foot," a clear space being left between the two, by lifting the patient through a half-circle turn the movement will be completed.

It will be seen, then, from the foregoing account that "bed and table—head to foot, at a right angle," involves only a quarter-circle turn of the patient and "bed and table—head to foot—parallel," with a clear space between them, involves simply a half-circle turn of the patient.

As a rule, if a patient has to be carried up a winding staircase or any distance, a stretcher or carrying-chair is used, and to the stretcher I do not refer, except to recommend, in passing, that the "feet-up" portion should always be adopted in carrying a partly anæsthetised patient up and downstairs, for two reasons, (1) that any vomited matter cannot then be inhaled into the trachea, and (2) that the force of gravity acting upon the patient's circulation when thus carried prevents faintness from cerebral anæmia. A carrying-chair should be placed in the same relation to the operating table as the bed, in order to ensure the same facility in the transfer of a patient.

A CASE OF INTESTINAL OBSTRUCTION CAUSED BY A BAND AND AN ENLARGED UTERUS.

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THE following case appears worthy of record on several grounds:

History.—On March 1st, 1899, at Dr. Clay's request, I saw Mrs. F., aged 26, married three years, no pregnancies, no amenorrhœa, last period three weeks ago. She complained of abdominal pain, with nausea and occasional vomiting and irregularity of bowels.

Condition When First Seen.—Patient was very thin and rather anæmic, and had lost flesh during the last three weeks. Extending 2 inches above the pubes could be felt a globular smooth firm mass, nearly fixed, and in-

clining slightly to the left side, dull on percussion over its centre, the dull note shading off into resonance laterally and above. Emptying the bladder made no difference in the mass. On vaginal examination the cervix was found to be high up, far back, and fixed. The mass in the abdomen appeared continuous with the cervix. On rectal examination the same globular mass was felt through the anterior wall of the rectum. There were no signs or symptoms of pregnancy. She had undergone an operation for rectal fistula, and during the last three years has suffered from intermittent attacks of abdominal pain. She had five foul ulcers on the front of the left lower leg. At 10 A.M. the temperature was normal and the pulse 112. At 3.30 P.M. the temperature was 101.5° and the pulse 120. At 9 P.M. the temperature was 101° and the pulse 132. At 9 P.M. she was beginning to vomit, the abdomen was tense and moderately distended. As she was rapidly going from bad to worse, I decided to operate without delay.

Operation.—At 2 A.M. on March 2nd I opened the abdomen through the left rectus below the umbilicus. The first thing seen was the bladder drawn up 3 inches above the pubes. The incision was prolonged upwards 2 inches, and on further opening the peritoneum the omentum was found firmly and universally adherent to the parietal peritoneum; after dissecting this off laterally for some 2 inches, I decided to get at the intestines through the omentum, which was incised vertically. After breaking down many soft adhesions between small intestines and pelvic mass, a globular swelling, exactly resembling a uterus four months pregnant, came in view, tucked away beneath the bladder and entirely filling the pelvis. I then traced the small intestine, which was collapsed, and $\frac{3}{4}$ inch in diameter, upwards from the cæcum. At the middle of the jejunum I found a band 3 inches long running from a loop of jejunum across a piece, not a loop, of jejunum, and ending in one of the sigmoidal appendices. The lumen of the compressed bowel was only partially obliterated by the band, which was removed. The bowel above the obstruction was distended to a diameter of $\frac{1}{2}$ inch. On the mesentery in one place was a cartilaginous nodule the size of a pea, and one deposit resembling tubercle was seen on the bowel. The abdomen was closed with mass sutures of chromic catgut, $\frac{3}{4}$ pint of hot saline solution was poured into the peritoneum (there was no room for more), 6 pints of hot saline solution, with 1 oz. of brandy, were injected into the right cephalic vein at the end of the operation, which lasted two hours.

After-history.—During the next twenty-four hours there was absolute constipation, with considerable collapse, but under stimulation by hypodermic injection of liq. strychnina (40 minims in ten hours) she gradually revived, the bowels and kidneys acting freely. Henceforth recovery was uneventful but slow. The abdominal incision suppurated freely. On July 1st (four months after operation) the uterus was felt bimanually to have shrunk to the size of an orange, and on January 18th, 1900, patient reported herself strong and well.

At the operation I considered pregnancy to be the cause of the uterine enlargement, but the after-history negatives this, as the patient did not miscarry and menstruated regularly, the uterus decreasing in size. Her general appearance and history of rectal fistula, with the conditions found in the abdomen, suggest tubercle as the cause of the peritonitis, which was apparently undergoing a natural cure, and which, but for the accidental formation of a band, would probably not have needed an operation. This band at first only partially obstructed the bowel beneath it; the enlarging uterus, by crowding the intestine out of the pelvis into the upper abdomen, caused increasing obstruction. It was the steadily increasing toxæmia with rapid increase of the pulse-rate which made me operate at 2 A.M. instead of waiting till the morning. I find intravenous injection of hot saline solution of the greatest value in such cases of toxæmia. Hot saline solution left in the abdomen (when there is room for it) by filling the peritoneum, prevents any large secretion of peritoneal fluid, which I have seen produce fatal collapse four hours after an operation for ruptured tubal pregnancy. The solution also acts as a reserve supply of fluid, which is gradually absorbed and excreted later on. The saline intravenous injection supplies fluid to the excretory organs, especially the kidneys (as in this case), and enables them to dispose of the poisons absorbed. It mechanically aids the heart by giving a sufficient volume of fluid on which it can contract. It also tends to alleviate the intolerable thirst from which these patients so often suffer. An operation of two hours is far too long for a case of intestinal obstruction, but owing to the difficulties caused by adhesions I could not complete the operation in less time. Bearing in mind the collapse which occurred during the first twenty-four hours, I am convinced that if I had deferred operation till the morning, or omitted the intravenous injection, the patient would have died.

THE CAMPAIGN AGAINST TUBERCULOSIS IN ITALY.—On the initiative of Donna Teresa Duchess Ravaschieri and the Marchesa di Campolattio, a committee of ladies who are members of the League against Tuberculosis has been formed in Naples. The President of the Committee is the Duchess Ravaschieri, to whom Professor Baccelli has addressed a letter of congratulation and encouragement.