In regard to leukaemia the differential diagnosis so far as the blood is concerned is the abundance of myelocytes.

In regard to the prognosis of this disease authorities differ. Osler is inclined to think that since the introduction of the arsenic treatment by Bramwell some are temporarily improved, and a few permanently cured. Other authorities have reported cures of what apparently were genuine cases of pernicious anaemia. On the other hand, Cabot and others of the Boston school are inclined to believe that the ultimate termination of the affection is always fatal, and that the so-called cures are but remissions in the course of the disease.

As regards treatment there seems to be a unanimity of opinion that cases do best on increasing doses of arsenic, beginning with several drops of Fowler’s solution, and gradually increasing the dose up to the point of toleration. This, together with rest in bed, careful and systematic feeding, massage to keep the muscles nourished, and a daily flushing of the colon, seem to be the best general measures that are at the present time recommended. Special symptoms have to be combatted as they may arise, and in regard to these every case must be a law unto itself.

OBSERVATIONS ON 1092 CASES OF ANESTHESIA FROM JAN. 1, 1899 TO JAN. 1, 1900.

BY ALICE MAGAW,
ANESTHETIST TO ST. MARY’S HOSPITAL,
ROCHESTER, MINN.

In the Northwestern Lancet, June 1, 1899, I gave in a brief way our method of administering ether and chloroform. This is a method we have found, after several years’ experience, to be the most satisfactory. I shall only report the cases on whom this method was used during this last year. In that time (twelve months) we have administered an anesthetic 1092 times; ether alone 674 times; chloroform 245 times; ether and chloroform combined 173 times.

I can report that out of this number, 1092 cases, we have not had an accident; we have not had occasion to use artificial respiration once; nor one case of ether pneumonia; neither have we had any serious renal results. Tongue forceps were used but once, the operation was on the jaw and it was quite necessary.

Youngest case where chloroform was used was 6 months of age, youngest ether case 8 months, oldest chloroform case 82 years, oldest ether case 67 years. We have always been in the habit of administering all anesthetics in the operating room, merely giving the surgeon time to make his preparations and withdraw-
ing the anesthetic the moment the surgeon can dispense with it. In that way we are sure that the time of anesthesia and quantity of anesthetic are much less than if started in an adjoining room for some time before the surgeon is ready.

There is an abundance of literature on this subject, but so full of contradictions as to render it of little use, and having had seven years' experience with various methods, and believing the "open" method most successful, we think it worth while to call attention to it again. After the patient is properly prepared and makes his appearance let the anesthetizer notice the general physique of the patient, the color of the face and lips, observe the walk and posture, whether the case is hysterical or not. After noting all of these give your patient to understand that you know just how to administer the anesthetic, and you expect him to follow your instructions, and that you know best how he should do. Try to assure him that he is in safe hands and not to be afraid, and, above all things, be firm, especially with the hysterical. I think firmness is one of the most important factors in handling all classes of patients, for it makes the patient have more confidence in your ability, and it is surprising how quickly he will accede to your wishes as soon as he gains confidence.

The method advocated is as follows:

N. W. Lancet, June 1, 1899.—"If the patients are able, they usually walk into the operating room; if not, are wheeled in and mount the table. Look into the mouth of the patient and satisfy yourself that there are no false teeth or foreign body, if so, remove it. The face is anointed with vaseline; a thick pad of moistened cotton placed over the eyes; the hands fastened to either side with a wide gauze bandage to prevent the arms from falling over the sharp edges of the table, which so often causes musculo-spiral paralysis, and the anesthetic preferred by the surgeon commenced."

The inhaler used is the Esmarch mask, with two thicknesses of stockinette, and we always have both ether and chloroform ready and give whichever is indicated by the condition of the patient.

In administering ether we commence with the drop method as carefully, and with as much air, as though it were chloroform, until the patient's face is flushed, when we have a large piece of surgeon's gauze of several thicknesses convenient and keep adding a few more layers of gauze and giving ether a trifle faster until the patient is asleep, then remove the gauze and continue with the same covering as at the start, and by the drop method. Should it produce difficult breathing, profuse secretion of mucus, or cough, or should the muscles be slow to relax, change to chloroform. The mask is ready, except that it is saturated with ether, and one should wait until the ether is evaporated or the patient is coming out of ether anesthesia, and then proceed with the chloroform by
the drop method very slowly and carefully. We find that it is when making the change from ether to chloroform, or the reverse, that the greatest care should be used. Ether should never be given carelessly; lift the mask from the face occasionally when the patient is fully under, and allow several breaths of fresh air, and in returning the mask with a fresh amount, replace it slowly: and gradually to prevent choking, change in respiration, etc.

Should dangerous symptoms arise during the administering of an anaesthetic that has been given slowly and carefully, all that is needed, as a rule, is to raise the lower jaw up and forward, and instead of using tongue forceps catch the tongue with a towel or a clean piece of gauze and draw it up toward the nose and a little to one side withdrawing the anesthetic entirely. (The gauze should be changed in the Esmarch after each patient.) While the general effects of chloroform are very much like those of ether there are some marked differences. Chloroform should be given with more air, and in less quantity and with the regular drop instead of the stream as so many use.

It should be given slowly and carefully as it acts very quickly. The pulse should be taken at the facial or temporal arteries. Never crowd an anaesthetic; rather than crowd ether, give a few drops of chloroform. Never feel hurried, the surgeon's time may be precious, but the patient's life is more so. A good rule that we follow, is this: Give just as much anesthetic as the patient needs and not one drop more. The less of the anesthetic, the better for the patient, and for this reason we start the anesthetic in the operating room, merely giving the operators time to prepare; meanwhile the surgeon's assistant is doing every thing possible in preparing the patient so as to save time, and the anesthetic is withdrawn as soon as it can be spared, giving only enough to keep the patient under. Many operations are performed with cocaine and other local anesthetics, and the surgeon is at a great disadvantage himself on account of the patient knowing the operation is going on; also from the rigidity of the muscles, but he is considering the safety of his patient, for most surgeons are learning the dangers of keeping a patient in an unconscious state for several hours with either chloroform or ether. We know both anesthetics are more or less unsafe, and should be handled with the greatest of care.

It has been said, "Any fool could give ether, but it takes a wise man to give chloroform." Whoever made this statement either has had no experience in giving an anesthetic, or he is of a different opinion from most anesthetists. A recent medical visitor remarked that he was obliged to give chloroform almost entirely because he found so few who knew how to administer ether properly.

Let one hand a chloroform bottle to a great many of the unskilled and say to them, this is very dangerous, give carefully, and not more than one drop at a time, and unless the patient is
killed during the first stages he is quite apt to be carried through safely, and that person will, of course, think that chloroform is just the anesthetic to use. Let him give ether, as most physicians do, in a closed cone, "choking method," and get the discoloration and strangulation, and he will be more impressed than ever with chloroform, and will use it until there is a death and he is aroused to the fact that it is no safer in his than in other hands. Chloroform is pleasant to give, its effect is rapid, and so easy for the anesthetizer as well as the patient, that I can readily see why so many prefer it. For fear of a desire to obtain all of the pleasant effects that follow the use of chloroform for myself, I keep very little in reach. For the sake of the patient my preference is for ether; for myself, I would say, like most anesthetizers, that I would prefer giving chloroform, as we escape so many of the unpleasant things that naturally follow the use of ether.

There is no need for having such great contempt for either chloroform or ether, for in order to give that which is best for the patient we need to become skilled in the administering of both. It is with ether, like many other things, doctors condemn it because they do not understand the secret of giving it. As a rule, the anesthetists of today who have such a contempt for ether, and report such serious after results, are those who are still using the closed cone, or, if using the Esmaarch, their gauze is of such quality as to be of little value. We have tried all kinds of surgeon's gauze, and find that it is not as satisfactory, as far as the use of ether is concerned, as the stockinette. Of course, where there is a bad renal trouble, or an acute bronchitis, ether may be contraindicated, but we have had cases who have bad renal affections, and chloroform was not taken kindly, and we have resorted to ether and had no serious results, and we, like many others, believe that ether can be used, even in renal troubles, with safety.

It is certain that a number of the cases of pneumonia following the use of ether are due to infected cones, and it is probable that the asphyxia accompanying the old method, rather than the ether, causes many more.

When a patient must have an operation he is usually able to take an anaesthetic, and we feel sure that the mortality can be decreased by the careful selection of the anesthetic in each case. It has been my privilege to give anesthetics in St. Mary's hospital in the surgical service of the Drs. Mayo for seven years. In that time an anesthetic has been administered over 5,000 times without a death. Should death occur from the anesthetic the reputation of the surgeon, of course, suffers most, therefore, we think it but just to him to make the choice; after a trial, if we find the anesthetic chosen is not taken kindly, a change is made, for it is often true that if a patient can not take one anesthetic well he can another.

Deaths have occurred and will occur from chloroform when given
by those of wide experience from causes over which they have no control, and it is our duty to be on the alert at all times, so that if a death should occur, we may feel that we have taken every precaution. One death is one too many—the same may be said about artificial respiration, one case is one too many. In looking over the seven years’ work, the few cases I have had, where artificial respiration was used, were due either to ignorance or neglect on my part, and always when giving chloroform alone or soon after making the change from chloroform to ether.

No anesthetizer can learn to be a surgeon at the same time that he is administering an anesthetic, but many doctors think they will let the anesthetic take care of itself, especially in giving ether, and learn what they can at this time. When finally the attention is arrested to the patient, the result is that artificial respiration and drugs are resorted to, or the patient comes out of the anesthetic when the fault has been wholly with the anesthetizer. For this reason we think a well qualified, especially trained nurse for this purpose, can get better results, as her interests are undivided.

Books and the experience of others are valuable, but cannot take the place of personal experience, as the practical part, as well as the theoretical is necessary in order to learn this art.

Every anesthetist should bear in mind that the proper administration of an anesthetic is enough responsibility for one person; the same being true of the surgeon, he cannot do good surgery and have the responsibility of the anesthetic. Every surgeon should employ an anesthetizer, in whom he has confidence, and let the person have charge. The surgeon may think many times that he could handle the anesthetic better, and perhaps he might, but it looks reasonable that those who are doing the same line of work for years cannot help but become more competent than those who only handle it occasionally. Regarding the use of ether in children there seems to be a marked difference of opinion, some believing it to be unsafe, others thinking it to be as safe as with adults. We have been giving more ether to children this past year than ever before, by the drop method, and must say we like it very much, and we shall continue its use until we are more convinced than at present that it is not safe.

As a rule, it is found that those patients who are extremely nervous before anesthesia require a great deal more care than those who are not, and we have had a few cases who have had a great muscular rigidity extending all over the body, but more frequently confined to the abdominal wall when the patient has seemed profoundly under the anesthetic.

In almost all cases where there is a rigidity of the abdominal muscles only, and ether has been given, change to chloroform and give just a few drops, and it will be surprising how quickly they will relax, then return to ether again as before. In bad alcoholics
we find that one-fourth of a grain of morphine given one-half hour before operation is very helpful.

Conclusions:
1st. Ether kills slowly, giving plenty of warning, while with chloroform there is not even time to say good-bye.
2nd. That it is believed that if ether is given with plenty of air and the drop method, there are few, if any, bad results.
3rd. Firmness with an hysterical patient assures the anesthetizer more success in gaining confidence of the patient.
4th. That an anesthetic is dangerous as long as it is in use.
5th. That the mortality can be much diminished by the careful selection of the anesthetic.
6th. That the surgeon should make the choice.
7th. In most cases where artificial respiration is resorted to, it is usually the fault of the anesthetizer or the method used.

---

CLINICAL NOTES.

TUBERCULAR EPIDIDYMIS, WITH REPORT OF A CASE.

BY MARCUS TESSLER, M. D.,
ST. PAUL.

J. H. M., aged 32, single, resident of Iowa. Family history negative. Has never had any sickness, until 1896 when he noticed a gradual enlargement of left testicle. Having had no venereal diseases, the family physician treated him for traumatic orchitis due probably, to bicycle riding.

The treatment, however failed, gradual enlargement, softening, abscess formation and a free discharge of pus followed leaving a permanent induration in the epididymis and a fistulous opening in the scrotum discharging a purulent material. This condition continued until 1898, when the right testicle became involved and an ulcer appeared on the glans penis near the frenum. He was very much alarmed when syphilis was suggested by his family physician and went to Chicago. There he was again treated for simple inflammation, with ointments, strapping, etc., until suppuration and fistula formation resulted. He then consulted a prominent surgeon, who diagnosed tuberculosis and advised immediately castration. The patient was not anxious to part with his testicle, and as a personal friend he wrote and asked my opinion. I advised him to come to St. Paul, which he did. I made a thorough physical examination but found no evidence of pulmonary tuberculosis. The urine was normal and free from pus. The inguinal glands were not enlarged. On the glans penis there was an irregular ulcer, with a slight induration, discharging a whitish fluid, and two fistulae were visible on the scrotum, communicating respectively with two nodules in the