anaesthetic, using a 4 mm. tube (Jackson's pattern), which passed quite freely down to and beyond the level of the bifurcation of the trachea. About 1 in. below this level, however, the lumen became obstructed by a glistening membrane with a "mother-of-pearl" appearance, which was at first thought to be inspissated mucus. Careful swabbing, however, showed it to be a solid structure, and no opening could be found in it (Fig. 12).

By pressing firmly with the endoscope the membrane was ruptured and normal oesophageal mucosa was seen below it. Gastric mucosa was easily recognized after the tube had been pushed about 1 in. further. On withdrawing the oesophagoscope a few drops of blood obscured the view of the wall of the gullet at the level where the membranous diaphragm had previously been seen.

FIG. 12.—Membrane as seen by oesophagoscope.

No other abnormality was detected in the pharynx, larynx, or oesophagus.

One ounce of exhausted breast milk was now given to the infant, who swallowed it normally and retained it. This appeared very satisfactory, and we thought it worth while to investigate the case still further by means of x rays. With Dr. Robert Knox we examined the infant the same afternoon with the fluorescent screen while she swallowed an emulsion of bismuth, and a definite narrowing of the lumen of the oesophagus, together with a slight delay in the passage of the bismuth, was noted.

about an inch above the stomach. No other abnormality of the upper alimentary tract could be detected, and we were able to give a fairly good prognosis. This was borne out by the fact that the child, although she persisted in refusing the breast, swallowed and retained fluid normally, and scarcely vomited again. Temperature, pulse, and respiration were normal throughout.

The baby, which had lost about $\frac{1}{2}$ lb. in weight, made steady progress until four weeks later, when she weighed 8 lb. She then began to vomit forcibly through both the nostrils and the mouth. A gastric tumour was visible and a pyloric tumour palpable on the second day of these symptoms, and hypertrophic pyloric stenosis was diagnosed. Laparotomy, on February 18th, confirmed this, and no other abnormality of the stomach or duodenum was found. Rammstedt's operation under gas and oxygen anaesthesia was followed by an uninterrupted recovery. For some considerable time after this the child was difficult to feed, but has now settled down and is doing well; at 5 months old she weighed 11 $\frac{1}{2}$ lb.

The points which I wish to emphasize with reference to this case are:

1. So far as I know, this case is unique; I can find no record in the literature of any previous case which has survived.
2. Congenital oesophageal malformations are not so rare as might be supposed.
3. The symptoms of all varieties are almost identical.
4. Some cases which are curable are probably diagnosed as being incurable.
5. A careful examination by means of prompt oesophagoscopy, with or without x -ray examination, should lead to a cure of a number of cases for which at present no treatment is undertaken.

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PRIMARY SPASMODIC DYSMENORRHOEA AND ITS TREATMENT.

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PAIN at the commencement of the menstrual period is very common, and is met with in varying degrees of intensity. It may be only a transitory sensation, or it may be severe enough to force the patient to bed. The more severe types present a trying problem, not only by reason of the distress, but also because of the interference with the patient's livelihood as a result of her inability to follow her normal occupation, which may be more important from her point of view. Patients are nearly always nullipara, though there are exceptions.

In typical cases the pain may come on a few hours before, and end with the menstrual flow, or it may continue for forty-eight hours of that period. Nearly always cessation of pain coincides with a freer flow. There are, of course, cases in which pain lasts longer, even throughout the period, but in suggesting a treatment it is better to consider only the typical cases which constitute the majority. The atypical yield to treatment devised on the same lines.

The patients, as a rule, are anaemic and listless, but the rapid improvement which follows removal of pain suggests that these are, in a large part, secondary symptoms. The increased menstrual flow which follows the usually sudden cessation of pain indicates that an obstruction has been overcome. That obstruction occurs at the junction of the body of the uterus with the cervix. When menstruation commences, in the normal subject, the potential uterine cavity becomes a real one through separation of its walls by accumulating menstrual fluid. Real resistance is met

with, however, at the junction of the body with the neck, and this is overcome by a "lifting" of the body as a result of increasing intrauterine tension, so that a continuing line through the cavity of the body and that of the cervix tends to become one straight line. When this happens the loss becomes free and, tension in the body having dropped, there is no pain. Should the uterine body find difficulty in performing this movement intrauterine tension steadily increases above the normal, and a stage is reached when spasmodic muscular contractions are set up in the uterine wall with resulting pain, the condition now constituting spasmodic dysmenorrhoea.

That a body such as the uterus does tend to assume but one position on distension can be shown experimentally. If the stem of a small rubber balloon is placed between two fingers, at the junction of the bulbous part with the stem, the body lying deflated on the back of the hand, it will be found on inflation that a line drawn through the centre of the bulbous portion to its junction with the stem tends to form, and in this case actually does form, a straight line continuous with one drawn through the centre of the stem, in its length. If, before inflating, a small area of the bulbous portion, near its junction with the stem, is painted with rubber solution and allowed to dry—this area representing the portion of the uterus on the side on which it is flexed—the lines drawn as before will not form a continuous straight line when the balloon is inflated. If these lines followed the course of potential channels a fluid would be obstructed at their junction to a degree dependent upon the angle.

Again, the operation of dilatation for menstrual pain by the very type of instrument used merely "straightens" the uterus, and for success depends upon that position being maintained. Following pregnancy a cure often results, because here again the same thing occurs, though the hyperplasia in the uterine wall tends to overcome any lack of elasticity present.

It is clear, accordingly, that inability of the body to assume easily this new and normal position at the commencement of menstruation must result in increased intrauterine tension due to accumulation of menses and turgidity, and that as a result the musculature falls into painful spasm. Two factors are at work in preventing a desired state of affairs, and they may operate separately or in varying degrees of combination. These factors are: (1) the elasticity and flexibility of wall, in the angle formed between body and cervix, is below normal, and (2) too acute an angle is formed by the body with the cervix. Intrauterine tension has to overcome one or both of these factors, and if it does so completely relief from pain follows. Just before relief occurs the uterine angle has reached its ideal or "essential to flow" degree, and the vital point in treatment is to ensure the uterus contracting in this position. In my opinion all efforts at causing contraction should, if possible, be commenced just before this tension is released, because immediately afterwards there is a sudden return to the "resting" or intermenstrual state.

I had thought that perhaps a natural rhythmic increase in general blood pressure governed the menstrual flow, and that the cases of amenorrhoea which quickly responded to tonics supported this theory, but continued blood pressure recordings yielded no evidence, so I am convinced that the increased intrauterine pressure is purely the result of local conditions.

I have discussed the causes of spasmodic dysmenorrhoea, as I see them, at some length, because so much depends on their being thoroughly understood. Treatment is simple, but the results I have obtained as the result of this reasoning over a period of four years are very good; patients have remained free from pain for varying periods up to three and a half years.

Successful treatment depends on increasing intrauterine congestion and distension so as to get as much "straightening" of the uterus and as great an "essential to flow" angle as possible; the uterus is then made to contract in this position. It is necessary to establish very carefully the time when the pain commences, and when it ceases, with relation to the commencement of the menstrual flow.

It is very advisable to warn the patient that the effects of the actual treatment will only be noticeable at the periods succeeding the one treated. For the pain at the period for which the patient first consults you there are only the time-honoured sedatives.

In outlining this treatment I will assume that the patient comes for treatment between the periods; but it is possible to commence at any stage. A good general tonic should first be given, and be continued up to the commencement of the period. One such as the following is very satisfactory: Ferri et ammon. citrate 1 drachm, liq. arsenicalis 1 drachm, aq. chlorof. to 6 oz.; one tablespoonful to be taken in water thrice daily after meals.

When pain commences, whether the menstrual flow has started or not, a hot hip bath is ordered, and for the pain aspirin, phenazone, and bromides may be prescribed. Morphine is unnecessary; the patient will have had attacks before the present one and her desire for treatment is only a very faint justification for its use.

Having ascertained how long the pain lasts as a rule the following mixture is commenced a few hours before the pain ceases; the prescription is: Liquid extract of ergot 30m, pot. brom. 5 grains (or tr. chlorof. et morph. 3m), water to 1/2 oz. If the pain lasts thirty-six hours or more the mixture is given two-hourly for six hours previous to its cessation and four-hourly afterwards. If it lasts for about twenty-four hours commence about four hours previous to its cessation; if much less than twenty-four hours commence just before cessation, but give only at four-hourly intervals.

The patient should not be permitted to keep the medicine by her for long, because the instability of these preparations is notorious. The age of the patient does not affect this dose of ergot, though for patients under 18 it is unnecessary to give it more often than every four hours. Frequently the following period will be free from pain, but the patient should be advised to continue the tonic between periods, to come for the ergot mixture before the period, and to repeat the treatment if pain recurs. As a rule up to four treatments constitute a maximum. If pain recurs an exact record should be kept of its relative time; this will give guidance as to variation in the time at which you must give the medicine. The time of cessation of pain may vary under treatment in many cases; it must be observed, and the inferences translated into action.

In one type of case a certain number of months remain free and then there is a relapse. Some of these can be corrected, if the duration of the pain is known, by an injection of posterior pituitary extract, about four hours before its cessation, the medicine being used as before. The treatment indicated greatly reduces the cases in which operative intervention may be necessary; there will still remain a few, in which the mechanical solution (dilatation, or the more natural one, pregnancy) must be considered. For example, a patient may have been married for three or four years without conception having occurred; this may indicate obstruction in the length of the canal, and heroic measures may be necessary; but my advice is "try medicinal treatment first."

With special reference to pregnancy, when faced with unsatisfactory results following the prevailing methods in the treatment of unmarried women, refrain from falling back on the idea that as a last resort it is right to suggest that this is "Nature's cure." It may be so, but what a wealth of impotence on the part of the practitioner is implied! Moreover, the results will sometimes be most unsatisfactory, and there is the risk of precipitating a union which may be followed by misery in other respects.

One of my patients, a woman aged 38, had been so advised, but a baby, born thirteen years ago, brought no relief. The two periods following her first medicinal treatment have been the only ones in her menstrual life free from pain.

In conclusion, let me repeat that what has been described is the treatment of typical cases; since these preponderate among a large number of women whose livelihood is affected, I make no other excuse for stating an unfinished case.