PITUITARY EXTRACT IN OBSTETRICS.

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THE extract obtained from the pituitary gland is a rather new therapeutic adjunct to the obstetric field and has hardly received the attention that it deserves. Foreign periodicals have published many articles on the subject, but aside from abstracts of these articles only very few papers on this subject have appeared in American journals until within the last few months, and probably only a few American physicians have any knowledge of this preparation aside from what they have read in advertising circulars sent out by manufacturing concerns. Knowing how exaggerated and overenthusiastic these circulars generally are, physicians are skeptical, have but little faith in them, and have hesitated to try out this drug. It is for this reason that I have thought it worth while to make this report of my experiences in a small number of cases.

The pituitary gland is divided anatomically into three parts, the anterior and posterior lobes and the infundibulum, but physiologically it seems to be divided into only two parts, the anterior lobe having one action, the posterior lobe and infundibulum another. The anterior lobe contains some unknown substance which is absolutely necessary for the life of an individual. The posterior lobe and infundibulum, on the contrary, are not indispensable to life, but contain some principle which has a marked physiological action as a vasoconstrictor and uterine stimulant. To the best of my knowledge, there are on the market to-day only three extracts of pituitary gland, two made by American and one by a foreign firm, and all of them from the posterior lobe or infundibulum.

Two of the preparations each contain 0.2 gm. of the fresh posterior lobe to each the centimeter, while the third contains 0.1 gm. of the fresh posterior lobe and infundibulum to each cubic centimeter.

I have now used this drug in a number of cases and feel that in it we have the solution of many a difficult obstetric problem. I firmly believe that by its use many forceps operations can be entirely avoided, that inertia uteri can almost be excluded as an indication for forceps, and that in many cases a "high forceps operation" can be converted into at least a "medium" and not infrequently a "low" operation.

In one large class of cases in which in the past the "low" operation has been frequently called for, pituitrin will almost invariably enable the patient to deliver herself, to her great satisfaction and that of her family and the credit of the physician who has refrained from interference, and has employed physiological rather than mechanical means to aid the delivery. I refer to that class of cases (Cases VI and IX) in which the head is at the outlet or on the perineum for a comparatively long time, the pains infrequent and ineffectual, the patient trying somewhat to help herself, but at the same time trying to restrain the advance either from fear of pain or because she thinks herself exhausted (which her pulse and general condition deny), and wants the physician to anesthetize her and do the work for her. In this class of case such a simple procedure as an intramuscular injection of pituitrin will usually work wonders, and I have seen such patients deliver themselves promptly after a few strong pains had been inaugurated by the drug.

In this class of cases the use of forceps entails practically no danger to the mother or the child, and their avoidance is chiefly to our own advantage. It may redound somewhat to the credit of a physician to have the reputation of a skilful forceps operator, but it is a fact that our most grateful patients are those whom we deliver normally. The laity do not ordinarily look upon a forceps operation as a very serious procedure, but nevertheless how often do we hear the wish expressed that we "may be able to bring the patient through without using instruments." The laity also cannot recognize the distinction between a "high operation" (one of the most serious operations in obstetric surgery, which should never be attempted by any but an experienced obstetric surgeon) and the "low operation" which is simplicity itself. There is practically no danger to the latter, but even the most expert of us have our troubles with the former, and the morbidity and mortality are fairly high. And most of our patients or their families can tell us of some friend who lost her child or has been an invalid for years as the result of severe tears, infections, etc. And it is for this reason that the laity *do* fear the suggestion to employ forceps, and the physician who can secure a

normal delivery in an "exhausted," pain-fearing woman by the simple expedient of drug administration gains the confidence and good will of his patients.

But there is another class in which the avoidance or at least the delay in the use of forceps is distinctly to the advantage of mother and child. I refer to those cases included in the classification of "high" or "high medium." There may be a slight disproportion between the passage and the passenger, the head is engaged but is slow in coming through the brim because the patient does not make proper use of her pains and does not know how to use her muscles. Again, in another type, the head is in the brim, the cervix not fully dilated but nearly so, with a thin wire-like edge, membranes ruptured and the pains almost constant. The cervix refuses to dilate further, and the patient, suffering intensely, cannot be induced to bear down and help herself. In both types of cases the patient is generally anesthetized and forceps applied and the infant dragged through the canal, usually not in the axis of the pelvis, and with severe trauma to the baby's head and the mother's soft parts, cervix, vagina, and perineum. Few general practitioners heed the warning that an undilated or undilatable cervix is a contraindication to forceps, and the results are severe lacerations of the cervix with chronic parametrial inflammations and scars in the vaginal fornices that make the poor patient miserable for life and tax to the utmost the resources of the specialists who attempt to relieve her sufferings. It is in these two types of cases that much can be gained by the judicious use of morphine to give the patient a little rest and relieve the intensity of the pains, followed in a short time by pituitrin to increase their power. I have seen pituitrin accomplish wonders in this class of cases in an incredibly short space of time, and would urge that before resorting to forceps in these cases this drug be given a trial. But at the same time let me sound one word of caution, be very careful about using this drug before the cervix is well dilated. It sometimes causes very powerful contractions, and I can readily conceive of its forcing the head through a friable cervix with such power as to cause severe lacerations. A few such cases have been reported in the literature. The drug sometimes acts with almost unbelievable violence as, for example, in a case in the practice of Dr. Robert T. Frank which he has kindly permitted me to mention. Shortly after the administration of the drug, the patient with each pain had such violent contractions that she assumed the position of opisthotonos. No harm was done, however, and the case terminated favorably for both mother and child. On the strength of this, in

those cases in which the cervix is not over four fingers dilated I give only one-half ampoule (0.05 gm.) of pituitrin at a dose. Furthermore, I would never use more than 0.1 gm. of any active preparation as an initial dose. If this dose does not give the desired effect it is always possible to repeat. But if 0.2 or 0.4 gm. be given as recommended by Edgar, and an extremely violent labor result, it is almost impossible to control the pains even by the administration of chloroform.

I shall now describe in detail several cases showing my experiences with this drug for the induction of labor and the treatment of cases already in labor.

CASES FOR INDUCTION OF LABOR.

CASE I.—Patient of Drs. S. M. Brickner and R. Ottenberg. Mrs. L. M., para-i, twenty-one years of age, at term, membranes ruptured two days previously, and there was no indication of the onset of labor. Pituitrin, 1 c.c., given with no effect. Labor was finally induced by means of the Voorhees bag; size No. 2 had no effect and was replaced by No. 3 on the following day.

CASE II.—Patient referred by Dr. J. Wisansky. Mrs. J. J., para-iii, aged twenty-five years. First labor; 14-pound child. Difficult forceps, died on third day, severe postpartum hemorrhage, complete laceration of perineum, repaired some months later. Second labor; 10 1/4-pound child, difficult forceps, adherent placenta, severe hemorrhage. Third labor; fetus large at term, estimated at about 10 pounds, and when two days overdue induction of labor was decided on. Abdominal and vaginal examination gave no evidence of the onset of labor, no uterine contractions could be felt, the cervix was closed. Pituitrin, 2 c.c., was injected into the left deltoid at 10.45 A. M. Hand on the abdomen noticed slight contractions of the uterus in three minutes, but the patient felt nothing. The contractions recurred at from four- to five-minute intervals, gradually becoming stronger for about fifteen minutes, and then continued at about the same rate and intensity for one hour when they ceased. At 1.07 P. M., one hour and twenty-two minutes after the first dose ceased to act, a second dose of 1 c.c. was given in the opposite deltoid. Similar contractions again began in five minutes and continued for nearly one hour. During this period of contractions, at 1.30 P. M., there was a show of bloody mucus. At 3.30 P. M., one and one-half hours after this second dose ceased to act, I decided to introduce a Voorhees bag, thinking that the pituitrin had failed. Preparations were made and on examining the patient I found, to my surprise, that the cervix was very much thinned out and almost completely dilated. Consequently, instead of introducing the bag I gave another c.c. of pituitrin and again the same result, contractions but no pains, lasting one-half hour. At no

time with any of the three injections did the patient feel anything at all. An examination was now made, and as full dilatation was found and the cervix fully retracted, the membranes were ruptured artificially and strong labor pains began at once. The head was large and hard and one and one-half hours elapsed before it descended into the pelvis. Delivery then progressed rapidly, but as soon as the child was born a very profuse hemorrhage began, and although the uterus was well contracted, the bleeding continued. After a few minutes unsuccessful attempts at Credé were made. The bleeding was very profuse, and as the pulse had risen to 160 I decided to waste no more time and did a manual extraction of the firmly adherent placenta. By this time the patient was in collapse, with symptoms of air-hunger and imperceptible pulse. The bleeding stopped, however, as soon as the placenta was out, but I packed the uterus firmly for fear of a possible relaxation and further hemorrhage, which would probably have proved fatal in the patient's already exsanguinated condition. Morphine and ergotole were given and the patient made an uneventful recovery. The baby weighed 10 1/2 pounds.

Epicrisis.—The question may arise as to whether the hemorrhage in this case was in any way connected with the use of the pituitrin. It has been claimed by some that pituitrin has an effect on the uterus similar to that of cocaine or adrenalin on the blood-vessels, *i. e.*, an excessive relaxation after the normal preliminary contraction. But I think that we can safely say that such was not the case in this particular instance for the following reasons: 1. The uterus did not tend to relax, but contracted well; the hemorrhage was external and the uterus did not balloon up with blood. 2. The history of postpartum hemorrhage in the first labor and adherent placenta in the second. 3. The placenta and membranes were adherent in this case, and the hemorrhage occurred while they were retained and the uterus well contracted upon them. 4. As soon as the adherent placenta was removed the hemorrhage ceased spontaneously. I packed, not to control hemorrhage but prophylactically, as I did not know what might happen and I feared that should another hemorrhage occur in her weakened condition it might prove fatal.

CASE III.—Mrs. V. D., para-i, aged twenty-three years. Pregnancy uneventful, pelvic measurements normal. Patient went two weeks beyond the estimated date of labor, and as I judged the child to be over 9 1/2 pounds decided to induce labor. Examination showed no evidence of the onset of labor, there were no uterine contractions, and the cervix was thick and closed. Two cubic centimeters of pituitrin were injected into the left deltoid, and six minutes later uterine contractions could be seen and felt through the abdominal wall. The patient stated that she felt a sensation

of pressure and tightness in the lower abdomen, and had to empty her bladder. I then left the patient with instructions to call me in two hours if the pains continued. She reported later that the pains had ceased after one hour. Next day I induced labor by means of a Voorhees bag. Labor was normal up to the end when, as the patient would not bear down, I was obliged to do a very easy low forceps without anesthesia. Placenta expelled spontaneously, no hemorrhage. Child weighed 10 1/4 pounds.

Epicrisis.—In this case the pituitrin undoubtedly caused uterine contractions, but nature was not ready to continue the work. It is possible that had I given another injection when the effect of the first wore off, as I did in Case II, and possibly even a third or fourth injection, nature might have taken up the work at this point. I believe also that I could have avoided the forceps in this case had I given pituitrin when the patient ceased using her pains, but I had no more with me and as it was 3.30 A. M., was unable to obtain more.

CASE IV.—Mrs. D. B., para-iii, aged thirty-two years. First full term pregnancy. Spontaneous abortion five years ago at two months. Hydatidiform mole four and one-half years ago, uterus emptied. Curetted again four months later for suspected chorio-epithelioma, and was ill for nearly one year afterward with "pelvic inflammation."

Present pregnancy uneventful. Four days after the estimated date of labor, as fetus was presenting in vertex, R. O. P. and of good size, I determined to induce labor. Patient sent to a hospital and Ol. ricini, 1 ounce, with quinine, gr. x, given without effect. The following morning, as examination showed no signs of the onset of labor, 1 c.c. of pituitrin was injected at 9.45 A. M. and in six minutes uterine contractions could be felt through the uterine wall, and at the same time the patient experienced a "tightening." This passed off in one hour, and at 11 A. M. a second dose of 1 c.c. was given. The effect was the same but this time weak pains continued throughout the day and night at eight- to ten-minute intervals. At 2 A. M. the following morning there was a considerable watery discharge. At 9.30 A. M. as the pains were still weak another 1 c.c.-dose was given, followed at once by real labor pains. Vaginal examination at 11.30 A. M. showed cervix two fingers dilated, very thin, and the membranes ruptured. Pains became progressively stronger and more frequent up to 1.30 P. M., when I gave a small dose of morphine (gr. 1/6) to relieve the pain but not interfere with the contractions. The head descended rapidly to the outlet, still in position of R. O. P., where it remained for some time notwithstanding strong pains. I then introduced two fingers into the vagina and with each pain made lateral pressure on the occiput, until rotation to R. O. A. occurred. Spontaneous delivery rapidly occurred, and the placenta followed very shortly. No hemorrhage. Child weighed 8 1/2

pounds. Convalescence uneventful up to eleventh day when patient had a chill and developed a most severe sepsis. Hemolytic streptococci were obtained in pure culture from the blood. After a long illness the patient finally recovered, and at a recent examination showed no traces of any pelvic disturbance.

CASES IN LABOR.

CASE V.—Mrs. M. L., para-iii, aged thirty-six years. First labor prolonged, 11-pound child born dead in absence of physician. Second labor, seen in consultation with Dr. A. Friedman. Transverse presentation, R. D. A., converted to breech, L. S. A. Very difficult extraction of very large child, nuchal hitch of left arm, cord ceased to pulsate before the arms were delivered, and head stuck in the brim. I was completely exhausted and finally had to call Dr. S. M. Brickner to deliver the head for me which he did with great difficulty. Child still-born, weight 12 pounds 14 ounces. Third labor, true conjugate estimated at 9.5 to 10 cm., fetus again large and presenting transverse, L. D. P. Consultation with Dr. Brickner one week ahead of estimated date of labor and induction decided on, on account of the size of the fetus, the malposition, and the contracted pelvis.

By external version the head was brought well down into the left iliac fossa with occiput posterior, and a No. 3 Voorhees bag inserted with ease. Pains began promptly, the bag was expelled in three hours, and the pains ceased. No pains occurred for four hours, so 1 c.c. pituitrin was given into the left deltoid; in six minutes pains began and soon became strong and frequent. With each pain the patient was required to assume the squatting position advised by Dr. King for transverse presentations. Examination one hour later and just after the membranes ruptured showed the cervix three fingers dilated, head in the left iliac fossa, and a hand and arm presenting below the head. These were pushed up out of the way, and with one hand on the abdomen the head was guided over the inlet where it engaged with the next pain. The pains ceased shortly after this, and after waiting two and a half hours another 1 c.c. dose of pituitrin was given. Again the pains began within five minutes, recurred at two-minute intervals and were very strong. One hour later examination showed head engaged L. O. P. and cervix four fingers dilated. Two hours later as there seemed to be no progress, notwithstanding strong pains, another examination was made and showed a contraction ring in front of the head, about 1 1/2 inches from the edge of the cervix and becoming smaller and tighter with each pain, but relaxing between pains. Two hours later this ring had contracted down to less than two fingers, while the external os was as wide open as before. A liberal dose of morphine and atropine was given by mouth and the patient slept for five hours. Pains then began again spontaneously and examination showed that the contraction ring had disappeared, and the cervix was almost com-

pletely dilated and retracted. As the head was still L. O. P., without anesthesia I pushed it up out of the pelvis, and while an assistant rotated the child's body, with two fingers in the vagina I rotated the head to L. O. A. Three hours later a 9-pound child was spontaneously delivered. The placenta and membranes were shortly expelled, no hemorrhage.

Epicrisis.—There is little to say about this case except to call attention to the promptness with which the pituitrin brought on the pains. The question as to whether the pituitrin had anything to do with the formation of the contraction ring, I will have to leave unanswered; I can find no argument for or against it, and can find no other reported case in the literature.

CASE VI.—Mrs. H. A. H., para-i, aged nineteen years. At term. Pelvic measurements normal except for slight degree of funnel shaped pelvis, transverse diameter of the outlet being 9.5 to 10 cm. Vertex R. O. A. Labor began spontaneously and progressed rapidly and smoothly until the head reached the outlet when the pains practically ceased. After waiting one and one-half hours, with pains only every ten or fifteen minutes, pituitrin 1 c.c. was given into the left deltoid. In eight minutes strong pains began, recurring at two-minute intervals, and the labor was spontaneously terminated in forty-five minutes. Placenta expelled spontaneously in thirty minutes, no hemorrhage. Child weighed 6 3/4 pounds.

CASE VII.—Mrs. C. S., para-ii, aged twenty-three years. First labor, normal but prolonged, thirty hours. Second labor, two weeks ahead of estimated date. Pains began spontaneously at 10 P. M. and membranes ruptured at midnight. Pains continued all night at six- or seven-minute intervals. Examination at 9 A. M. showed cervix two fingers dilated, 1/4 inch thick, and head engaged in position of L. O. P. Pains continued all day at six- to seven-minute intervals, were weak and of only ten to fifteen seconds duration. At 6 P. M. examination showed cervix still only two fingers dilated and hardly any thinner than in the morning. One cubic centimeter of pituitrin was given, followed in one minute by a weak pain. These continued at minute intervals for six minutes, and then became very strong, lasting from thirty-five to fifty-five seconds and at intervals of from thirty to forty-five seconds. Fifty minutes after the injection of the drug the head appeared at the vulva and the child was born ten minutes later. Spontaneous rotation from L. O. P. to L. O. A. Placenta expelled spontaneously in seven minutes, no hemorrhage. Child weighed 7 1/2 pounds.

CASE VIII.—Mrs. S. F., para-i, aged twenty-four years. Pregnancy uneventful, pelvic measurements normal. Spontaneous onset of labor at 5 A. M. Vertex R. O. P. At noon cervix was two fingers dilated and fairly thick. Pains were rather infrequent and weak. At 4 P.M. rectal examination showed the cervix a scant three fingers dilated and pains still infrequent. Pituitrin (0.5 c.c.) given and in six minutes pains became very strong and frequent for one

hour and then again became infrequent and weak. After waiting three hours with no improvement, 1 c.c. pituitrin was given with immediate powerful effect for nearly one hour, when it again ceased. One hour later examination showed the cervix four fingers dilated and fairly thin so I ruptured the membranes and at once strong pains developed and continued until the head reached the outlet when they again ceased. After again waiting one hour with absolutely no pains and the head at the outlet, still R. O. P., I gave still another injection of pituitrin. This was at once followed by powerful pains, the head rotated and was promptly expelled. Placenta followed shortly, no hemorrhage. Child weighed 8 pounds.

CASE IX.—Mrs A. M. A., para-i, aged thirty-two years. Pregnancy uneventful, pelvis normal. Labor short and strong up to the time of full dilatation when pains ceased completely for one hour. One cubic centimeter pituitrin given with immediate effect. Very strong contractions developed in four minutes and the child was born fifteen minutes later. Placenta expelled in twenty minutes, no hemorrhage. Weight of child, 7 1/2 pounds.

Epicrisis.—These four cases show plainly what pituitrin will do in cases of simple inertia.

CASE X.—Mrs. D. E. K., para-iii, aged forty-one years. First full-term pregnancy. Laparotomy for fibroids and ectopic gestation eight years ago. Induced abortion for safety of abdominal scar a few months later. Present pregnancy very stormy, nausea and vomiting throughout, severe abdominal pains and edema of feet. Patient was hardly able to get about at any time during the entire course of her pregnancy. Abdominal and vaginal examination showed practically normal conditions, pelvis normal. Two weeks ahead of estimated date of labor I decided to induce labor on account of patient's very miserable condition, advanced years, and an apparently fully developed fetus. A No. 2 Voorhees bag introduced with usual aseptic precautions at 9.15 A. M. and slight pains developed at once. These were augmented by an injection of pituitrin given twenty minutes later. A second, third and fourth 1 c.c. dose given at 12.15, 2.15 and 4.15 P. M. respectively had practically no effect. Another 1 c.c. dose at 9.15 P. M. immediately caused strong pains, lasting two hours, and then its effect ceased. At 1 A. M. strong pains began spontaneously and continued until the membranes ruptured and the bag was expelled at 6 A. M. Examination at this time showed the head well engaged in a position of R. O. P. and the cervix thin and nearly fully dilated. The patient was very weak from her stormy pregnancy, and although the pains were fairly strong, she could not bring any force into her bearing-down pains. For this reason I decided to give her a little respite, and at 8 A. M. gave her morphine, gr. 1/6 with atropine gr. 1/150. The pains ceased and the patient slept for two hours. Then two injections of 1 c.c. each of pituitrin were given with practically no effect. As pains would not occur and the cervix was fully dilated and the head

was well down in the pelvis, labor was terminated by an easy low forceps and Scanzoni maneuver. The uterus contracted well and there was no hemorrhage. But the placenta was not expelled, and after waiting two and a half hours a manual extraction was done. The placenta was found embedded in a mass of fibroids that divided the fundus of the uterus into several compartments. It was a most difficult extraction as it had to be removed piecemeal in shreds. Puerperium uneventful; weight of child, 6 pounds.

Epicrisis.—This is the only case in my series in which pituitrin given during labor failed to act satisfactorily. Each injection caused slight contractions but at no time was the result satisfactory. I cannot explain this but would not be surprised if the presence of the fibroids interfered in some way with the proper action of the uterine muscles.

This small series of cases will, I think, give a very good idea of what we may expect to accomplish with pituitrin in several different types of cases. Although its action is not infallible, I have, on the whole, been so well satisfied that I unhesitatingly recommend it.

The question now arises as to whether there are any dangers or contraindications to its use. I shall try to dispose of this in a few words. I believe that there may be some danger in certain classes of cases, and that these classes should be considered as contraindications. They are:

1. The dangers of severe tears in friable, rigid or diseased cervices, where dilatation cannot occur or where the cervix is so soft as to rupture rather than dilate. In this class I would put carcinoma of the cervix, cervices badly scarred from previous traumatism, operative or otherwise, and possibly also some cases of placenta previa. I would also mention here the use of full doses of pituitrin in cases where the cervix is only slightly dilated (two to three fingers).

2. The danger of rupture of the uterus where there is: (a) a weakened uterine musculature from fibroids or scars of former uterine operations, as myomectomies or hysterotomies; (b) a marked obstruction or disproportion between the passage and the passenger, and (c) transverse presentations, late in labor, either before or after the presentation has been corrected, if the uterus seems to be much thinned out at the site of one of the fetal poles.

3. The danger of raising an already too high blood pressure in eclamptics or nephritics.

4. Another danger to be considered, but one that cannot be foretold or guarded against, is the possible formation of a contraction ring as in Case V.

5. The danger of asphyxia of the infant. It has been stated by

several writers that pituitrin interferes with the placental circulation on account of the powerful contractions of the uterus, and that in many cases the child has been deeply asphyxiated and only saved with great difficulty. This may be so, but I have never had any difficulty in any of my cases, and have never had to resort to more active means of resuscitation than simple spanking. Although I do not know just how much pituitrin was given in some of these reported cases, I am led to believe from my own results that this is not likely to occur unless excessive doses are used.

Dosage and Indications.—Pituitrin should always be administered by intramuscular injection, and my preference for the site of injection is the middle third of the deltoid. I cannot agree with Edgar's advice, in a recent article, to use 0.04 gm. as an initial dose. I have been in the habit of using only one-quarter of that amount and with such excellent results that I see no object in using larger doses, and furthermore these larger doses might cause such violent labor as to do serious damage to the maternal soft parts. I cannot urge strongly enough that the initial dose be not over 0.1 gm. (1 c.c. of the Parke, Davis or 0.5 c.c. of the Armour or Burroughs Wellcome preparations) in all cases in which the patient is already in labor. In those cases where it is used early in labor with the cervix dilated to less than four fingers, and the membranes ruptured or unruptured, I would use only half this amount; where the cervix is dilated over four fingers and the membranes intact I would use the full dose, but if the membranes are ruptured, again I would use only one-half the dose. The rule of four fingers is arbitrary, but it has proven rather satisfactory to me for this reason: that where the cervix is less than four fingers dilated, the pressure with each pain comes almost directly from above, and the dilatation occurs chiefly by *retraction*, as there is very little protrusion of the rounded wedge into the cervical orifice. But after the cervix is four fingers dilated, the wedge, either consisting of the bag of waters or the head, is pretty well engaged in the orifice, and dilatation occurs by *actual dilatation or divulsion.* Now in this case if the hard head does the stretching too forcibly, severe tears are likely to result and I consequently advise smaller doses than where we have the soft bag of waters acting as the dilator.

After the cervix is completely dilated full doses can be safely given unless there is marked disproportion, obstruction, or weakening of the uterine muscle. These conditions with too violent a labor might cause a rupture of the uterus, but if no obstruction is present there is nothing to fear.

Where pituitrin is used for the induction of labor, large doses

(0.1 to 0.2 gm.) may be given with perfect safety. It would seem that so much of the energy of the drug is used up in starting the labor that the pains induced are never very strong at the outset, and the effect wears off before stronger pains develop.

CONCLUSIONS.

1. In pituitrin we have a drug that is of undoubted value in almost all cases of simple inertia and fatigue of the uterine muscle.
2. It is of value occasionally for the induction of labor at or near term.
3. It seems to be practically devoid of harmful effects, and its dangers are few and easily guarded against.

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NOTE.—Since this article has been in press several new preparations of the pituitary gland have been placed on the market.