USE OF LUTEIN SOLUTION HYPODERMICALLY FOR THE CONTROL OF NAUSEA AND VOMITING OF PREGNANCY*

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FOLLOWING the suggestions of Hirst, in September, 1919, I began the use of hypodermic injections of Hynson and Westcott's J.C., solution of corpus luteum. To date sixty-two selected cases have been treated by this method. The total number of injections given in the sixty-two cases was four hundred and ten, making a general average of about six and a half injections per patient. The least number of injections received was one and the highest number given to a single patient was twenty-five. The following little table shows how they averaged:

2	cases	1	each	4	cases	6	each	3	cases	12	each
4	"	2	"	4	"	7	"	1	"	16	"
2	"	3	"	4	"	8	"	1	"	17	"
8	"	4	"	3	"	9	"	1	"	21	"
21	"	5	"	2	"	10	"	1	"	25	"
				1	"	11	"				

It will be noted that the greatest number of patients received five, the highest number of injections was twenty-five.

Fifty-five cases of the series improved more or less rapidly after beginning the injections, giving a total of 88.6 per cent improved, about the same average as Hirst reports. Six of the series aborted; one from overexertion four weeks after all gastric symptoms had ceased and injections stopped; one from a rough auto ride; two therapeutically, the first on account of active tuberculosis with hemorrhage and the other on account of uncontrollable vomiting. The fifth brought the abortion about herself, and I retired from the case, and the sixth aborted following an injection. The last is the only one in which I thought there might be a connection between the injection and the miscarriage and I will speak of it again with the case reports. In only one case was failure absolute, the one of uncontrollable vomiting mentioned above and to which reference will be called later.

The technic is to prepare the site of injection, using the deltoid preferably, with green soap followed by alcohol with enough friction to create redness of the skin. The solution is injected deeply into the muscle and the patient, if ambulatory, is instructed to return home and keep quiet for the following twenty-four hours; also if there be

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any soreness at the site of injection to apply a compress of equal parts of alcohol and water.

If the discomfort is severe, patient losing all meals and nausea constant, the injections are given daily but usually they are given every other day, using the deltoids alternately. If the injection is given subcutaneously the reaction is quite severe but if given deeply in the muscle the discomfort is trifling. Occasionally a patient complains of dizziness after the injection and some state the following twenty-four hours their nausea is increased but by the second morning they are "feeling fine."

It is interesting to note the rapid clearing up of the distress and the return of appetite, usually after the second injection. Many patients state they feel much less languid and much more vigorous after the injections. So far I have seen no case of anaphylaxis or any alarming symptoms following the treatment.

As a summary of the results obtained it may be of interest to review briefly in outline some of the more interesting cases.

CASE 1.—Para i, age twenty-nine, about six weeks' pregnant, constipation and nausea severe, with considerable vomiting. Received eight injections in all and did not improve materially until after the sixth. This case delivered later by cesarean section, on account of generally contracted pelvis and nonengagement of head after labor began. Baby had spina bifida involving the last two dorsal and all the lumbar vertebrae and died three weeks later with a well developed hydrocephalus.

CASES 2 AND 3 received nine and eight injections respectively, and steadily improved.

CASE 4.—Para ii, age twenty-eight, one previous accidental abortion between the fourth and sixth week. Seen in consultation at the sixth week of pregnancy, nausea and vomiting severe for past two weeks. Patient given daily injections of 1 c.c. lutein and began to improve after the third injection, but it was only after the tenth that she was in condition to take solid food and the vomiting entirely ceased. She received twelve injections in all and left the hospital on October 9 in a very satisfactory condition. Three weeks later on October 31 she aborted spontaneously after having done some heavy housework. I could see no connection between the use of the lutein and the abortion.

CASE 9.—Para i, age twenty-one, received twelve injections. She was vomiting all her meals at first but slowly improved after the first injection.

CASE 11.—Para ii, age twenty-one, had four injections, headache followed first injection and after this was given one-half c.c. instead of the full ampule for the following three injections. Rapid improvement.

CASE 12.—Para ii, age twenty-three, had four injections and rapidly improved but it was necessary to do a therapeutic curettage at the end of the third month on account of active tuberculosis with hemorrhage.

CASE 19.—Para iv, age twenty-eight. This case is of interest because during three previous pregnancies it had been necessary to put her in the hospital from the sixth to the twelfth week on account of hyperemesis. Her case three times previously had been of extreme severity necessitating rectal feeding and large doses

of bromides. At her third pregnancy she aborted spontaneously at the eighth week undoubtedly on account of her extreme toxemia. At the fourth pregnancy she reported when six weeks advanced, with beginning severe nausea and vomiting. This patient received six injections at three day intervals with improvement after the first and passed through the next few weeks with no distress at all. She was the most brilliant and satisfactory case of the series.

CASE 23.—Para ii, age twenty-six. Was vomiting all meals when she came under observation; six weeks advanced but immediately began to improve after the first injection. She received seven injections in all.

CASE 33.—Para ii, age thirty-one, had had stormy pregnancy two and one-half years previously in Arizona. Labor was induced at the end of the eighth month on account of albuminuria, severe vomiting and preeclamptic symptoms. Baby weighed five and one-half pounds. She reported to me when about two months pregnant and was suffering with persistent nausea and vomiting. Her improvement, though gradual, was not so satisfactory as I had anticipated. She received sixteen injections in all from May 18th to June 12th and she got through the summer fairly well, but in November, vomiting returned accompanied by pain. A diagnosis of duodenal ulcer was made and confirmed. Her condition became so grave on account of persistent bloody vomitus that preparations were made for termination of the pregnancy but fortunately the night preceding the expected operation she went into labor spontaneously, five weeks before her date of confinement and was delivered of a six pound baby. From then on her improvement was steady and satisfactory.

CASE 34.—Para iii, age thirty-one, received ten injections and was improved but miscarried spontaneously following a rough automobile ride. Six months later she was operated upon for a large ovarian cyst which may also have been a factor in her abortion.

CASE 36.—Para ii, age thirty-five. This is the one case of my series in which the injections though helpful at first were a complete failure. This woman received the highest number of injections, twenty-five in all with no improvement. I had seen the patient two years previously in consultation. She was then about three months pregnant and was in desperate straits, suffering with a severe hyperemesis, accompanied by profound acidosis. Her stomach had rejected everything for days. She was greatly emaciated, very weak, had rapid pulse, and subnormal temperature. I advised an immediate emptying of the uterus which was done, and the following day and in fact for the next week the patient was in great danger. She then slowly improved and finally made a complete recovery. In the second pregnancy nausea and vomiting began about the sixth week. It was not severe and at first she seemed to be improved by injections of lutein. There was a psychic element in this case that had to be taken into consideration. Her first experience had left a bad mental impression, also she had recently received a severe shock caused by the sudden death of a member of the family. At first her condition improved after receiving the injections and she was able to hold and assimilate food fairly satisfactorily. Suddenly one morning the nausea and vomiting returned, the urine became loaded with acetone and diacetic acid, albumin and casts appeared and the patient began vomiting blood. Her condition became so alarming within the next forty-eight hours it was necessary to terminate the pregnancy immediately. Severe hemorrhage accompanied the operation and the succeeding twenty-four hours her condition was bad, but she eventually made a slow recovery.

CASES 37 TO 53 inclusive, improved under treatment.

CASE 54.—Para i, age twenty-one. This patient when three months' pregnant

came under my care. One hour following her second injection she began to flow and three days later aborted spontaneously. It is a question as to how much the injection had to do with the abortion. Patient after leaving office walked a considerable distance to visit a friend and while there was taken with uterine cramps. Sedatives were given without avail. I have been inclined to believe overstimulation of the uterus from the injection, together with fatigue following the long walk, was responsible for this abortion.

CASES 55 TO 62 inclusive improved steadily, without comment.

CONCLUSIONS

1. My experience with dry extracts of corpus luteum and placentaë tissues by mouth have been unsatisfactory. These substances are probably changed during the process of digestion and do not attain the goal desired.

2. In hypodermic medication with lutein for the relief of the nausea and vomiting of pregnancy, I believe we have a remedy that will prove of great benefit in a large number of cases. Those not actually cured are at least considerably benefited and the distress is held under control.

3. Satisfactory results are obtained in a majority of cases.

4. The earlier the injections are begun the more gratifying the results.

5. The drug is apparently harmless, easily administered and leaves no unpleasant after effects.

6. There seems to be no increased tendency to abortion if the patient remains quiet following the injections.

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