THE ASCHHEIM-ZONDEK TEST IN THE PUERPERIUM

BY

F. A. E. CREW, M.D.

PREGNANCY DIAGNOSIS LABORATORY, INSTITUTE OF ANIMAL
GENETICS, UNIVERSITY OF EDINBURGH

There is no general agreement as to when, following uneventful pregnancy and normal parturition, the Aschheim-Zondek test first gives a definite and permanent negative result. Aschheim and Zondek¹ state that "as little as 0.05 c.cm. of urine may give a positive reaction at the end of pregnancy. The reaction may disappear as early as five days after childbirth, and regularly ceases eight days after." Mazer and Edeiken² express the view that "the source of prolan is the living chorionic epithelium, which should not persist longer than two weeks after the termination of a normal pregnancy." According to Hamburger³ "immediately after parturition there is a very great and abrupt fall in the hormone concentration (within twenty-four hours down to about 1/20), and then in the next dozen days the hormone content in the urine falls off below any demonstrable amount." Mack and Agnew⁴ refer to four cases in which the test was carried out two to seven days following parturition, giving positive results. Robson,⁵ quoting Zondek,⁶ says that the test remains positive not only so long as living products of conception are present, but for some days after that period ("about a week to nine days as a rule").

In connexion with the work of the Pregnancy Diagnosis Laboratory it was found desirable to examine this question. Through the eager co-operation of the honorary and nursing staff of the Royal Simpson Memorial Hospital, Edinburgh, specimens from a series of fifty cases were made available for the purposes of this study. From each case a specimen of urine was obtained as soon as possible after parturition, and thereafter at twenty-four-hour intervals. The results obtained are given in the following table:

		Positive	Negative
1st specimen ...	2-7 hours after parturition	45	5
2nd	24 hours later	26	24
3rd	48 ..	15	35
4th	72 ..	2	48
5th	96 ..	0	50
6th	120 ..	0	50
7th	144 ..	0	50

Of the five cases in which the first specimen gave a negative result one gave a weak positive (one blood spot in one mouse) at the second test and negatives thereafter: the other four continued to give negatives consistently. In two cases in which the first specimen gave a positive and the second a negative result, the forty-eight-hour specimens evoked weak positive reactions, whilst the seventy-two-hour and ninety-six-hour specimens were negative again. The two seventy-two-hour positives were both weak. In those cases in which a series of positives was succeeded by a negative, the last of the positives was, as a rule, a weak reaction.

It may be concluded that under the conditions which obtain in this laboratory, the Aschheim-Zondek test invariably yields a definite and (presumably) permanent negative result ninety-six hours after normal and complete parturition. The results obtained suggest that the Aschheim-Zondek test on the fifth day of the puerperium might well be used as a routine procedure for the diagnosis of retained living products of conception.

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Clinical Memoranda

Strychnine Poisoning Treated Successfully

A strong, healthy young man, aged 22, bought 6 grains of strychnine hydrochloride for the purpose of suicide. He obtained the poison by stating that he wished to poison rats, went home, dissolved it in water, and drank it. While doing so he remarked to a member of his family that he was taking poison and would be dead in half an hour. The family doctor was summoned immediately, and the patient was rushed off to hospital within twenty minutes of swallowing the draught.

CASE REPORT

On admission at 1 p.m. twitching had commenced. Apomorphine was not obtainable, so zinc sulphate 30 grains was administered. By the time this had been done all the signs of severe strychnine poisoning were in evidence, with exceptional opisthotonos and pronounced cyanosis and asphixia.

Chloroform anaesthesia was administered, and as this did not entirely control the intense spasms, at 1.30 p.m. he was given a hypodermic injection of morphine sulphate 1/2 grain. In spite of this treatment the patient became so deeply cyanosed that amyl nitrite pearls were resorted to, and this rapidly relieved the asphyxia. The stomach was washed out with about a gallon of potassium permanganate solution, and at least half a pint was left in the stomach.

FURTHER DRUG THERAPY

At 2 p.m. the convulsions were still violent, and another hypodermic injection of morphine 1/2 grain, with atropine 1/50 grain, was given.

At 3 p.m. chloral hydrate 30 grains and potassium bromide 60 grains were given per rectum, and at 3.45 p.m. a third hypodermic injection of morphine sulphate 1/4 grain and atropine 1/100 grain was administered. At this time the pulse was 142, the spasms, though less frequent, were still severe, and the degree of cyanosis was alarming. Chloroform anaesthesia was maintained with the occasional administration of amyl nitrite to relieve asphyxia and cyanosis.

At 7 p.m. chloral hydrate 20 grains and potassium bromide 15 grains were given again per rectum.

At 9.30 p.m. the patient appeared to be in a very critical condition: his respirations had assumed a Cheyne-Stokes character, and there was grave cyanosis. He was now given atropine 1/100 grain hypodermically.

At 9.45 p.m. carbon dioxide and oxygen were administered until 10.15 p.m., when the spasms diminished, cyanosis became less and less, and the respirations assumed a more normal character and rhythm. He awakened, asked for water, and then fell off into a deep sleep, which lasted until 6.15 o'clock the next morning. At 7.55 a.m. he vomited and complained of severe headache, but in other respects he felt well. He did not seem any the worse for his ordeal, and was discharged the following day.

COMMENTARY

There is no doubt that the time factor operated in helping to save this patient, for there was little or no delay in getting him to hospital. Deep chloroform anaesthesia, even combined with large doses of morphine, did not relieve the severe asphyxia resulting from the spasms of the respiratory attacks, but when combined with amyl nitrite the effect was magical.

Spinal puncture and the injection of a 25 per cent. solution of magnesium sulphate was considered, as also