

MEDICINE

Study Placenta Leak

► THE THEORY that babies can bleed extensively while still within the womb is supported by a clinical report from four investigators.

Fetal cells were found in the circulation of a pregnant woman, suggesting a leak in the placenta, Dr. W. Weiner, director, Regional Blood Transfusion Service, Birmingham, England, reports in the *British Medical Journal* (Sept. 27).

Previously, fetal cells had been discovered in the female circulatory system after the birth of the baby. These cells might have entered the maternal circulation during delivery, however.

The woman referred to in the reported case was known to have blood group A, rhesus negative. She had had one abortion at three months and her first baby was stillborn.

A blood test taken near the end of her next pregnancy revealed results that were contradictory to her known blood group, that is, not only did she exhibit Rh negative but also Rh positive reactions.

A cesarean section was performed and

exchange transfusions were begun on the baby as soon as possible. The baby died approximately 15 hours after birth, however, the investigators said.

The hemoglobin level of the baby was very low, 5.1 grams per 100 milliliters. The authors suggest that the baby must have bled extensively because the extremely low hemoglobin level would not likely be produced by hemolysis, the liberation of hemoglobin, alone.

The production of anemia in babies through blood loss into the maternal circulation has been suggested by previous researchers. Although hemolysis undoubtedly played a role in the cause of anemia in this case, the authors indicate that this is a further example of severe bleeding of the fetus.

Assisting Dr. Weiner were Rosalie M. Child of the department of pathology, J. M. Garvie, consulting pediatrician, and W. H. Peek, consulting obstetrician and gynecologist, all of Manor Hospital, Walsall.

Science News Letter, October 4, 1958

MEDICINE

Leukemia Deaths Up

► RADIOACTIVE fallout and other possible cancer-causing factors apparently cannot be blamed for the increase in leukemia, or blood cancer, in the United States.

In fact, two public health experts report, there is no support for a theory that leukemia-causing factors in the American environment have increased sharply within the last 15 years.

Taking into consideration both age and racial differences, Drs. Alexander G. Gilliam and William A. Walter, epidemiologists with the National Cancer Institute, report an increase in the death rate from leukemia for all ages. Since 1940, however, there has been a decline in the rate of increase among white persons. Between 1930 and 1940 the increase in the death rate for this disease was 64% for the whole population. Between 1940 and 1950 it had declined to 43%, the scientists report.

They believe that if exposure to environmental factors is actually responsible for the disease there is evidence that such exposure has either become stabilized or has decreased during the past 15 years.

In contrast to the national picture, some areas, including states in New England, the east and west South Central regions, the South Atlantic and the Mountain regions, show a speed-up in the leukemia mortality rate increase. Contrary to some earlier reports, Drs. Gilliam and Walter doubt an association between geographic factors and leukemia. They believe the number of cases reported are too small and that the geographic areas are too widely separated to consider a relationship probable. There is "no reason to single these states out for

particular consideration," Drs. Gilliam and Walter report.

Further details of their study, which appears in *Public Health Reports* (Sept.), indicate an increase since 1940 in death rates for white children three and four years old. This increase tends to offset a regular decline in the leukemia mortality for white infants under one year of age.

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MEDICINE

Maternal Death Rate Cut In Half in Past 11 Years

► ONLY HALF as many women are dying in childbirth as their counterparts of just 11 years ago.

This greater maternal survival rate has come about because the past few years have been a period of "phenomenal growth and accomplishments unmatched in the history of obstetrics," Drs. Milton D. Klein and Jacob Clahr, members of the Bronx County Medical Society's committee for maternal welfare, report in *The Journal of the American Medical Association* (Sept 20).

According to the U.S. National Office of Vital Statistics, the number of maternal deaths for the nation per 10,000 live births has decreased from 11.6 in 1946 to four in 1956.

As for the cause of death, the percentages of decrease in maternal mortality in Bronx County between the first and second halves of the 11-year study based on 254,249 live births were: infection, 80%; anesthesia,

65%; toxemia, 43%; hemorrhage, 24%, and heart disease, 21%.

Infection showed the greatest reduction as a cause of maternal death.

"Were it not for the large number of deaths due to criminal abortion, which often does not respond to the antibiotics, infection would be eliminated as a leading cause of maternal death," Drs. Klein and Clahr say.

The most frequent cause of maternal deaths was hemorrhage. The decrease in deaths was primarily due to the more liberal use of blood transfusions.

New blood pressure-lowering drugs and diuretics that help the body rid itself of fluids help control toxemia. Developments in anesthesia and the increasing number of qualified persons to administer it have made anesthesia safer.

Also, education of the public concerning the importance of early prenatal care and good medical care, improved hospital facilities, and more rigid hospital rules and regulations have affected the death rate.

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● RADIO

Saturday, Oct. 11, 1958, 1:35-1:45 p.m., EDT "Adventures in Science" with Watson Davis, director of Science Service, over the CBS Radio network. Check your local CBS station.

Dr. Arnold Bass, assistant chief of the Free Radical Research Section, National Bureau of Standards, in Washington, will discuss "Frozen Fragments of Molecules."

EMBRYOLOGY

Test Tube "Mothers" Two Baby Mice

► TWO BABY mice, which had been conceived normally and had had a test tube for a mother for two days, have been born at the Royal Veterinary College, London.

The surviving mice were among several mouse embryos used in an experiment to study the effects of interference during embryo development.

The embryos were obtained from mice when they were at the 8- to 16-cell stage, about two and one-half days after conception. They were then placed in a test-tube culture medium, Anne McLaren and J. D. Biggers of the veterinary college report in *Nature* (Sept. 27).

After two days, they were transplanted to a different, pregnant animal. Since only the transplanted embryos were albinos they could be identified after transplant by eye color when they reached the stage of cell differentiation.

The control experiment consisted of transplanting embryos without the intermediate test-tube step. A comparison of the two types of transplant and the effect of the test-tube step revealed that the difference in weight and rate of development between the two types of embryos was insignificant, the scientists note.

The two baby mice were, at the time the report was written, four weeks old and apparently unaffected by their unusual development.

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