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This Week's Citation Classic

Liley A W. Liquor amnii analysis in the management of the pregnancy complicated by rhesus sensitization. *Amer. J. Obstet. Gynecol.* **82**:1359-70, 1961.
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A correlation was shown between the spectrophotometrically estimated bilirubinoid pigment concentration in amniotic fluid and the severity of fetal anemia in Rh hemolytic disease. The paper presents a method by which this correlation could be used with precision in selecting the optimal time for delivery of each baby. [The *SCI*® indicates that this paper has been cited over 285 times since 1961.]

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"Experience with newborn Rh babies in the mid 1950s persuaded me that, 15 years after the elucidation of the concept of hemolytic disease, the pediatric achievement had outstripped the obstetricians' ability.[1] The pediatricians, like the parents, were helplessly dependent on what time, luck, intrauterine life, and the obstetrician presented them with at birth. A carefully controlled study under the auspices of the British Medical Research Council had shown that routine premature delivery had nothing to offer. But logically some babies needed premature delivery to avoid stillbirth and some needed leaving alone.[2] At that time the only guides to likely severity were antibody titres and past history of affliction. While these were valid enough as statistical generalizations they were frequently very wide of the mark in individual babies.

"The most tragic blunder was the premature delivery of a baby on the strength of previous stillbirths only to find the baby was Rh negative and unaffected—and then to have the baby die from some complication of unnecessary prematurity. A concentration of several such episodes was the spur to introduce amniocentesis as British researchers had already shown the amniotic fluid was pigmented yellow with affected babies. The decision of whether to intervene and when had already been made from antibody titres and history and the only information sought from amniotic fluid was a written guarantee that the fetus was affected at all. This information was easy to supply but made little difference in the outcome. If the baby was unaffected no interference was necessary and if it was affected the severity was often such that intervention was unavailing. By this time, however, confidence had been gained in the technique of amniocentesis and the ability to recognize gradations of severity of anemia if allowance was made for maturity. Therefore policy was altered to extend amniocentesis to all women with antibodies of titre capable of harming a fetus irrespective of history. This permitted precise management by leaving to term those babies with no or insignificant affliction and progressively more premature delivery for more severely affected babies.

"The Rh baby was no longer treated in terms of statistical risk but for each individual baby the best compromise between anemia and prematurity could be achieved. This work has led not only to many other analyses of amniotic fluid to achieve precise fetal diagnosis in a variety of disorders but also directly, three years later, to intrauterine blood transfusion of the severely anemic Rh fetus unable to reach a deliverable maturity unaided.[3] Now for the first time an unborn baby could be ill, could be specifically diagnosed, and could receive and respond to treatment just like a patient in any other age group."

1. **Levine P, Katzin E M & Burnham L.** Isoimmunisation in pregnancy: its possible bearing on the etiology of erythroblastosis fetalis. *J. Amcr. Med. Ass.* **116**:825-7. 1941.
2. **Mollison P L & Walker W.** Controlled triiils of the treatment of haemolytic disease of the newborn. *Lancet* **1**:429-33**,** 1952.
3. **Liley A W.** Intrauterine transfusion of the foetus in haemolytic disease. *lint. Med. J* 2:1107-9. 1963.