Locating Fetal Heart Sounds

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In 1818, M. Mayor (1), an able surgeon practising in Geneva, was the first, on applying his ear to the abdomen of a patient far advanced in pregnancy, to observe and record the important discovery—the pulsation of the fetal heart.

In 1821, M. J. A. LeJumeau de Kergaradec (1) also independently discovered the sounds of the fetal heart. Although priority is given, and justly so, to Mayor, still full credit is due to Kergaradec, who besides pursuing his investigations further, made another great discovery, that of the uterine souffle. I think it is appropriate to make a few general remarks on the fetal heart sounds and their location.

The fetal heart is situated nearer the cephalic extremity than the pelvic. The posture of the fetus in the uterus is one of anterior flexion, and therefore the sounds of the fetal heart are best transmitted through the back of the fetus. Where the fetus is presenting by the cephalic extremity, the fetal heart sounds must necessarily be heard with
and sometimes anteriorly and rarely all over the uterus. It is my opinion that it is pressure, or lack of pressure on the uterine vessels, that accounts for the occurrence, location, and intensity of the uterine souffle. The agencies exerting this influence are the abdominal muscles principally and the uterine wall.

The uterus during pregnancy usually assumes a position of combined antversion and dextroversion, consequently the anterior wall of the uterus is completely supported by the abdominal muscles; the right side partly supported, and the left side least, or none at all. Therefore the souffle is heard most frequently and loudest on the left side, less on the right, and least of all anteriorly. Another reason for the souffle being heard less frequently on the right side than on the left is the fact that the antversion and dextroversion of the uterus causes a degree of torsion of the vessels on that side resulting in a lesser flow of blood through them. When the uterus is situated in the median line, the souffle may be heard on both sides. If the uterus is retroverted or the abdominal wall is greatly relaxed the souffle may be heard throughout the whole uterus. During labor the action of the uterine muscle supplements that of the abdominal, as during the height of a contraction the murmur disappears (as there is no blood passing through the uterus). The cause of the complete absence of the uterine souffle is the toxicity of the uterine vessels, principally, but it may also be a combination of the toxicity of vessels, uterine muscle and abdominal wall.

The uterine souffle is synchronous with the maternal heart. It may be continuous or intermittent, or distinctly irregular. It is usually single but it may also be systolic and diastolic. The position and periods of audibility of the souffle are inconstant. These variations may be explained by the inconstancy and incoordination of the action of blood vessels, uterine muscles and abdominal wall.

Now, since the relation of the uterine souffle to the abdominal wall involves the principle of cause and effect, that is, the less the pressure of the abdominal wall the louder the bruit, then in order to eliminate it I increased the pressure of the abdominal wall as follows:

Place the stethoscope where you would expect to find the fetal heart, plant the tips of the fingers of your free hand parallel to the transverse diameter of the uterus, from one and a half to two inches above or below the stethoscope (try both) and exert gentle and continuous pressure backward when on the anterior wall of the uterus, and backward and toward the median line when laterally situated.

You will observe the blowing sounds of the uterine souffle become progressively fainter until they either disappear or they become faint enough for the heart sounds to be audible and countable. Occasionally the character of the souffle changes from blowing to sonorous or sibilant before becoming faint or disappearing. I have found this method successful in thirty-eight out of forty cases.

I would strongly advocate this method of auscultation in detecting fetal heart sounds in pregnancy or labor when obstructed by the uterine souffle.

REFERENCES.