Medical Classics

Alfred Hegar and Hegar's Sign

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A Hegar

SCIENTIFIC discoveries and inventions, although built upon the earlier labors of others, are usually credited to him who first proclaims his findings to the world or records his work in the published press. Yet medical history contains numerous instances of misplaced credit for priority in original observations. A possible inequity in obstetric terminology may be embodied in Hegar's sign, universally recognized as an early indication of pregnancy.

Hegar's sign, a selective softening of the uterus in the region of the lower segment, resulting in an increased mobility between the cervix and the corpus, was actually described first by C. Reinl, one of Hegar's assistants, who published this observation in 1884 as a new and certain diagnostic sign of pregnancy:

Apart from the general disturbances in the sense of well-being, amenorrhea, changes in the breasts and external genitalia, alterations in the consistency of the enlarging uterine corpus and the cervix, we have no further diagnostic signs for the early months of pregnancy.

The discovery of a new sign should therefore be of particular value, since some of the above-mentioned local changes are often absent or are only present in slight degree, or, in multiparas, are not always reliable.

Last winter, in Professor Hegar's gynecological clinic, I had the opportunity of acquainting myself with a new and excellent sign of the early months of pregnancy.

This consists in the demonstration of an unusual softness, flexibility, and thinning of the lower uterine segment, that is, of the part directly above the insertion of the uterosacral ligaments.

This finding is not only demonstrable when the rest of the uterus feels firm, as is often the case, but also very definitely when it is soft and elastic.

Also, in the latter case it is always possible to compress the lower uterine segment, to actually thin it out with the finger, and so to differentiate it from the upper part of the uterus, while it still clearly differs in consistency from the cervix below. The pliability and laxness of these parts can be so extensive that one may be in doubt as to whether any

connection exists between the cervix and the larger abdominal or pelvic mass.

We know of no condition which can produce findings similar to pregnancy; solid tumors certainly do not, and hemato- and hydro-metra present no diagnostic difficulties. Our sign can therefore be used with confidence for the differential diagnosis of pregnancy.

This remarkable development results from the fact that the lower uterine segment becomes the most attenuated and elastic part of the entire uterus during pregnancy; therefore, as one can easily demonstrate, it is possible, after displacing the uterus upward, to grasp the lower segment between the fingers of the vaginal and abdominal hands, compress it, and completely thin it out.

Absence of this sign does not, however, exclude pregnancy by any means, for one can easily imagine that with chronic infarction of the lower uterine segment pregnancy could occur without this change being demonstrable.

It is not clear, from this account, whether Reinl discovered this sign of pregnancy himself or whether it was pointed out to him by Hegar. It was the latter, however, who taught and publicized it until it eventually came to bear his name, while Reinl's possible role in the discovery has been completely overshadowed by the celebrated name of his master. Hegar's own paper on the subject, with illustrative diagrams, did not appear until 1895, 11 years after Reinl's. In it he acknowledged Reinl's priority of publication, but strongly implied that recognition of the significance of the pregnancy change in the lower segment was his (Hegar's):

Fortunately we have still another diagnostic aid, which is based on the compressibility of the lower uterine segment. I was led to this while reading an article by A. Martin in which he describes an hypertrophy of the cervix, as a result of which the connection between the soft lower uterine segment and the cervix can only be demonstrated with difficulty.

Martin, whose paper was published in 1881, had reported 7 cases, regarding them as unusual, in which he observed a peculiar hypertrophy of the supravaginal part of the cervix during pregnancy. He discussed the possible diagnostic significance of this change when present but seemed uncertain of its practical clinical value.

Credit for Hegar's sign should therefore probably be divided among 3 men: Martin, who first called attention to the selective pregnancy change in the lower uterine segment; Reinl, who stressed the specificity of this change and its value for the early diagnosis of pregnancy, and first published on it; and Hegar, who later popularized it.

The Life of Alfred Hegar

Alfred Hegar was born in Darmstadt, Germany, January 6, 1830, the son of a general practitioner. He studied in Giessen, Heidelberg, Berlin, and Vienna, receiving his medical degree in 1852. After a brief stint as a military surgeon he returned to practice in his home town, where he soon established himself as a busy obstetrician. He began to write on the pathology of pregnancy in the early 1860's, and his studies on early abortion were so well received that they led to his appointment, in 1864, as Spiegelberg's successor as Professor of Obstetrics and Cynecology at Freiburg, where he remained for 40 years until his retirement in 1904. He died on August 5, 1914.