PRACTICAL SIGNIFICANCE OF UTERINE DEFORMITIES DURING PREGNANCY AND LABOUR*

BY

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During the past 20 years I have seen 67 cases of major fusion deformity and many cases of minor deformity of the uterus. Of the 67 patients, 32 have each had between one and five viable children. I have therefore had many opportunities for observing the general pattern of pregnancy and labour complicated by different forms of uterine anomaly (Hunter, 1957).

Diagnosis and Terminology

It has become evident that if the precise nature of the deformity is known beforehand it is possible to foretell with some degree of accuracy which complications of pregnancy and labour are apt to occur in any particular case. It is difficult, however, to arrive at a definite anatomical diagnosis in the non-pregnant state and still more difficult during pregnancy. The presence of a uterine deformity may be suggested by the finding of a vaginal septum; and the diagnosis is based upon the findings on vaginal examination with palpation and inspection of the cervix; uterine palpation, exploration of the cervical canal and uterine cavity with a sound; hystero-salpingography; and, when the operation is necessary for some coincident condition, laparotomy. During late pregnancy the presence of a transverse foetal lie or of an oblique lie with the head or breech in one cornu and the feet in the other suggests that there may be a single but deformed uterine cavity; and the presence of a slender extended breech in a somewhat elongated uterus inclined to one side and a high presenting part suggests that there may be two separate, non-communicating uterine cavities. Palpation of the uterine cavity during manual removal of a retained placenta may give useful information about its conformation.

The terminology used in describing cases of fusion deformities of the uterus should be informative and precise. The state of the uterine fundus, of the uterine cavity, and of the cervical canal should always be indicated in the descriptive term used in the records if this term is to be sufficiently comprehensive to be of value in future attempts to foretell the outcome of any particular case (Hunter, 1950).

Single Uterine Cavity

The simplest type of fusion deformity of the uterus is uterus arcuatus unicorpus unicollis, in which the uterine fundus is slightly depressed and its myometrial layer is thin, the uterine cavity is single and undistorted, and only one cervical canal is present (Fig. 1). In this type of uterus there is minimal disturbance of the normal progress of pregnancy and labour, and the deformity is frequently overlooked. However, the fundal depression may be slightly accentuated during the course of pregnancy, the fundus may appear slightly broader than usual, and the lie may be slightly oblique. Sometimes, especially when the breech presents, the fundal pole of the foetus may be felt with unaccustomed ease. The progress of the first and second stages of labour is usually normal, but the third stage may be prolonged, often owing to failure of separation of a fundal placenta. During manual detachment of such a placenta the impression may be gained that the fingers may tear through the exceptionally thin fundal myometrium.

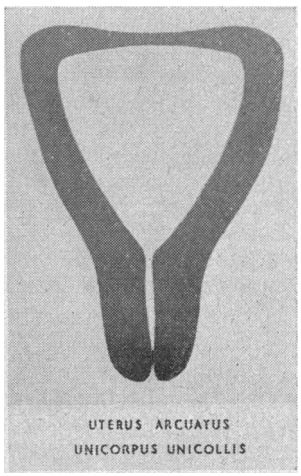

FIG. 1

Uterus simplex subseptus unicorpus unicollis, uterus cordiformis unicorpus unicollis, and uterus bicornis unicorpus unicollis all have in common a single bilobed uterine cavity and a single cervical canal (Fig. 2). As the ovum may be confined in a relatively indistensible recess near a uterine cornu, where it may possibly be implanted upon a less vascular area on the medial uterine wall or septum, abortion often occurs. There may also be an increased incidence of hyperemesis, toxaemia, and accidental ante-partum haemorrhage, but this is difficult to confirm. As pregnancy progresses, the hypertrophied non-pregnant horn is invariably lifted from the pelvis by the attached pregnant horn and probably never causes obstructed labour. The cleft between the horns of a bicornuate uterus tends to be effaced as the uterus enlarges and the point of union of the two sides is elevated. On the other hand, as a simple subseptate uterus enlarges, the junction between the pregnant and non-pregnant horn becomes more apparent.

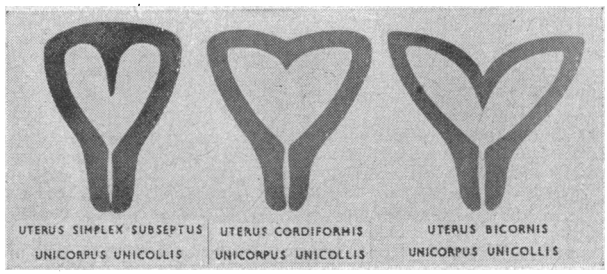

FIG. 2

The lie of the foetus is usually longitudinal or oblique with the vertex or breech presenting, but the incidence of transverse lie is high. In longitudinal lie the presenting part usually expands the lower segment and approximates to the cervix in a normal manner. In vertex presentation the breech, and in breech presentation the vertex, may occupy one cornu, and the feet, possibly with the placenta, may occupy the other. About 12% of all cases of transverse lie are associated with these types of uterine deformity, and the convex foetal back and shoulder usually occupy the concavity of the lower segment. Hypotonic inertia and incoordinate uterine action, with consequent prolongation of the first and second stages of labour, are of more frequent occurrence, even with a longitudinal lie, but the incidence

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is not nearly so high as in cases of double uterus (uterus bicorpus). In association with transverse lie premature rupture of the membranes, prolapse of the cord, premature labour, abnormal uterine action, and obstructed labour may occur. In all cases the placenta is more liable to be retained, atonic post-partum haemorrhage is fairly frequent, and lochia may be excessive or prolonged in the puerperium.

Double Uterine Cavity

In uterus simplex septus bicorpus and uterus bicornis bicorpus—unicollis or bicollis—the uterine cavity is completely divided at least as far as the internal cervical os. Two separate compartments which do not communicate with one another are formed and the uterus is therefore a true double uterus (Fig. 3). Loculation of

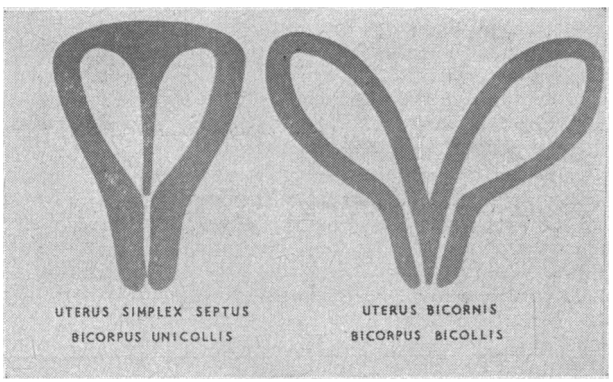

FIG. 3

the ovum results in a high rate of abortion and premature labour. There may be a high incidence of hyperemesis and toxaemia, although my personal findings on these points have been inconclusive. Bleeding may occur, especially during the early months of pregnancy, from the non-pregnant horn; but this does not occur in the majority of cases, and the amount of loss is usually small. Accidental ante-partum haemorrhage is apparently more frequent than in normal cases. The non-pregnant horn of the bicornuate uterus cleft externally to the level of the internal cervical os is liable to rotate into and become impacted in the pouch of Douglas, where it may subsequently cause obstructed labour. If the uterine cleft does not reach the internal os it will nearly always be raised during pregnancy, or occasionally during labour, above the level of the pelvic brim and will not then be apt to obstruct labour. The foetal lie is almost invariably longitudinal, but the incomplete breech commonly occupies the fusiform lower segment and constitutes the presenting part. Twin pregnancy is commoner in double than in single uteri.

The lower uterine segment may resist expansion in late pregnancy and during labour. This may lead to non-engagement of the presenting part in the pelvis and failure of approximation of the presenting part to the cervix. Incoordinate uterine action or hypotonic inertia with subsequent prolonged labour, and possibly arrest of progress and foetal and maternal distress, is particularly apt to arise. If labour is obstructed by the non-pregnant uterine horn uterine rupture may occur, especially through the scar of a previous caesarean section or the thin medial wall of a bicornuate uterus. A cervical or vaginal septum may obstruct labour or may, on being lacerated during the birth, bleed profusely. On occasion the presence of a recto-vesical septum may add to the difficulties of caesarean section (Hunter, 1960). Retention of the placenta and atonic post-partum haemorrhage, which may be severe, often occur. On rare occasions, when manually removing a retained placenta from a septate uterus, the oedematous, bruised, and possibly lacerated uterine septum may be mistaken for a subendometrial fibromyoma. Loss of blood during the puerperium may be excessive and prolonged, and the decidua of the non-pregnant horn may be discharged piecemeal or as a complete cast towards the end of the first week after delivery.

Summary

Although in the majority of cases of uterine deformity pregnancy and labour are normal, the incidence of complications is much higher than would be expected if the uterus was normal. If the risks are known and anticipated, earlier recognition and prompt treatment will undoubtedly reduce the hazards of pregnancy and labour.

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IDIOPATHIC CARDIOMEGALY

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"Heart muscle," says Cameron (1952), "hypertrophies for many causes, all of which increase the amount of work thrown on the muscle." This conception of hypertrophy involves an increase in the mass of each muscle cell, without an increase in the total number of muscle cells. It also limits the conception to an increase brought about by a work stimulus such as, for example, valvular disease or increased peripheral resistance from hypertension. So far as we are aware, the steps by which work stimulus is translated to increase in cell mass await elucidation. In the meantime it becomes increasingly clear, as more and more cases are reported, that not all abnormal increases in total muscle mass are due to work stimulus. A group of cases variously described as idiopathic hypertrophy, familial cardiomegaly, asymmetrical hypertrophy in young adults, or hypertrophy of unknown aetiology have in common the absence of a work stimulus to account for the increase in muscle mass.

The two cases here reported illustrate the condition of the heart in the latter category. Both cases came to necropsy at the instance of the coroner. Commonly, in coroners' cases there is little or nothing in the way of clinical history to aid the pathologist in diagnosis. If he is confronted by a case of sudden death in which the sole finding is a heart with an obviously hypertrophied left ventricle showing marked excess of weight over the average for the sex, age, and development, the tendency is to attribute death to hypertensive heart