

# JOHN BRAXTON HICKS (1823–1897)

*by*

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THE name of Braxton Hicks is familiar to all doctors by reason of the sign of pregnancy—intermittent uterine contractions—which bears his name, but perhaps less well known but of much greater importance are some of his other contributions to the science and art of obstetrics.

John Braxton Hicks was born at Rye, in Sussex, in the year 1823. He was the second son of Mr. Edward Hicks, a banker. From the age of twelve to fifteen, Braxton Hicks was educated as a private pupil of the Rev. J. O. Zelwood, of Compton Rectory near Winchester.

At the age of eighteen he was enrolled as a medical student at Guy's Hospital. He was very popular both amongst his teachers and fellow students.

I shall never forget [wrote a fellow student, Dr. Daniel Hooper] his amiable cheerful expression, bright piercing eyes, and noble forehead: his alacrity was remarkable; he was always busy—I never saw him idle for one moment—he would hurry with a very quick step to the lecture theatre, literally run down the steps (a huge volume of Pereira, perhaps, under his arm) to the bottom bench and there sit motionless and attentive until the lecture was over.

Hicks had a brilliant career as a student and carried off many prizes. In 1844 he passed his first examination for the degree of Bachelor of Medicine at the London University gaining honours in every subject and winning the exhibition and gold medal in *materia medica*. In 1847 he passed the final M.B. examination, obtaining honours in physiology and comparative anatomy, medicine and surgery. Soon after he obtained the diploma of the Royal College of Surgeons, and in 1851 the degree of M.D. of his own university. Being anxious to marry and settle in practice he entered into partnership with Mr. W. Moon of Tottenham and rapidly became a general practitioner of high standing.

General practice was not to hold him long, however, for in the year 1859, he was invited to become assistant obstetric physician to his old hospital, an offer which he accepted. In the same year he passed the examination for membership of the Royal College of Physicians, being elected a fellow in 1866.

In 1870 he was appointed senior obstetric physician at Guy's Hospital and lecturer in obstetrics at the school. These appointments he held until 1883, when, by reason of the age limit, he retired from these posts and was elected consulting obstetric physician. Feeling that his career as a teacher was being cut short somewhat prematurely, he acceded to the request to become obstetric physician to St. Mary's Hospital in succession to Dr. Meadows. He held this post for several years doing his hospital work conscientiously and taking his full share of teaching. He never forgot that he was a Guy's man. It was when he was

attached to that hospital that he did his best work. For some years, he was examiner in obstetrics at the University of London, holding a similar position at the Royal College of Physicians from 1872 to 1878 and again from 1889 to 1893. For many years, Braxton Hicks was physician to the Royal Maternity Charity, and, for a time, physician to the Royal Hospital for Women in Waterloo Road.

Hicks was one of the founders of the Obstetrical Society of London in the proceedings of which he took a most active interest. He took part in many discussions and no fewer than forty contributions from him appeared in the *Transactions*. He was Honorary Secretary from 1863 to 1865, Vice-President 1866 to 1868, Treasurer in 1870, President 1871 and 1872. He was elected an Honorary Fellow in 1896. He was an Honorary Fellow of the Obstetrical Societies of Berlin, Edinburgh, Philadelphia, and of the American Gynecological Society and a corresponding Fellow of the Gynecological Society of Boston (U.S.A.).

Braxton Hicks was all his life a keen student of natural science and many contributions from his pen appeared in the *Proceedings of the Royal Society*, in the *Transactions of the Linnean Society* and in the *Journal of Microscopic Medicine*. He was elected a Fellow of the Royal Society on 5 June 1862. The papers which he wrote to earn for him this great distinction included articles on the house-fly, sense organs of insects, the eye and its parts in invertebrates, on lichens and algae and on the antennae of insects.

Braxton Hicks retired from active practice in 1894 and died at Lymington on 28 August 1897, at the age of seventy-four from heart failure, after a long illness following an attack of influenza.

Paying tribute to his memory at the London Obstetrical Society, C. J. Cullingworth said that:

it was difficult for those who only knew Braxton Hicks in his later years to realize that this mild mannered, chatty, beaming little old gentleman was the man whose name was associated with so many advances in the science and art of obstetrics. He was in no sense one of those who either look or talk like a leader of men. But his wide interests, his keen love of nature, and his gentle unassuming manner made him a most interesting companion. He continually displayed a quite unexpected acquaintance with the most out-of-the-way subjects, and his mind was a storehouse of general information. He had read much, observed much and thought much. . . . He was always ready to give help to those who needed it, whether in the form of advice or money, or, if necessary both; but it was all done so quietly that few knew him for the charitable man he really was. His character had the charm of simplicity. Utterly free himself from all that was base and sordid, he judged others to be the same; hence he never expressed himself unkindly to his fellow men.

Braxton Hicks was one of the pioneers of British obstetrics and made many contributions to the advance of the art. Including letters, over one hundred-and-thirty contributions from his pen appeared in medical journals. Many of these remain as foundation stones upon which the modern science of obstetrics was carefully built up by his successors and contemporaries. He was not a finished writer; his papers had no charm of style but were all worth reading. He



Fig. 1.  
JOHN BRAXTON HICKS  
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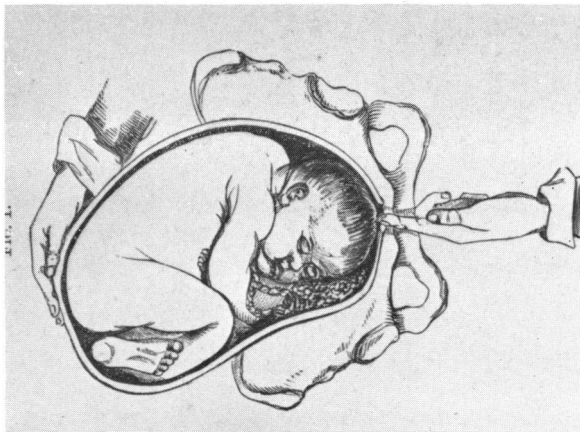
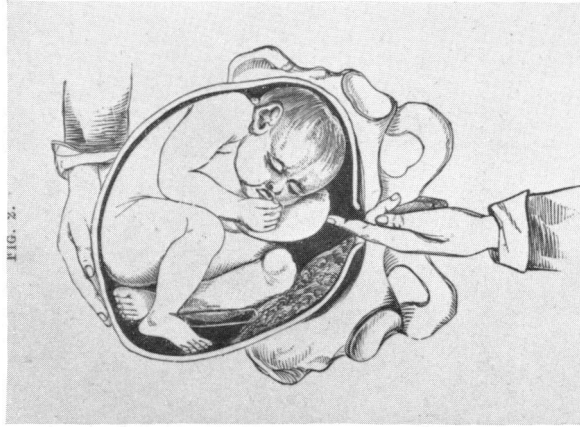
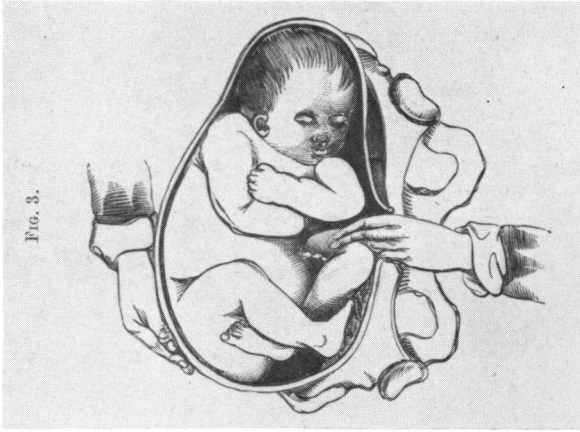


Fig. 2.  
Braxton Hicks's method of version

was a clinical observer of the first rank and never put pen to paper unless he had something of importance to say. In his work, no detail was too small to escape his notice or receive careful attention; nothing was too much trouble to him if it would promote the welfare and comfort of his patients.

Of Braxton Hicks's many contributions to the literature of obstetrics and gynecology, two stand out above all others and are worthy of consideration, at length. In the month of July 1860, there appeared a paper in the *Lancet* on 'A new method of Version in Abnormal Labour' in which were described 'five cases of placenta praevia in illustration of its peculiar adaptability to that formidable complication of labour'. In the following February another paper appeared in the same journal describing the successful application of the new method to other forms of complicated labour. It was by these papers that Dr. Hicks first brought before the notice of the profession his celebrated method of combined internal and external version. He later stated that he chose this method of doing so rather than laying it before the Obstetrical Society of London as it was then a new subject. He felt that its merits could not then be discussed with satisfactory results but having tested and proved its value, he made it the subject of an address given to the Obstetrical Society of London on 4 November 1863. The following year the paper appeared in a revised form as a volume of seventy-two pages with the title *A Combined External and Internal Version*.

Prior to this time, the operation of version whether to bring down a foot, the knee, the breech or the head had meant the introduction of the whole hand into the uterus. Cephalic version was but rarely performed, the difficulty of grasping and retaining the head at the os uteri being very great. Further more it was necessary to wait until the cervix was sufficiently dilated before introducing the hand, and generally part of the arm, into the uterus. Valuable time was therefore often lost before the operation with its attendant pain and suffering, and irritation of the uterus, could be undertaken. A patient with placenta praevia might be moribund from haemorrhage before such a stage was reached.

Wigand in 1807 had pointed out that the child could be turned in shoulder presentation by external manipulation alone. He found that by pressing on opposite poles of the foetus he could bring that end which was nearest, to the os uteri. Further progress was made in Britain when men such as Collins of Dublin and Robert Lee found they were able to shorten the delay, before version could be performed in the old manner, by pushing the child round with the finger. Lee had also pointed out that when the child lay transversely the knee was within a finger's length of the os uteri and could be hooked down without difficulty. Only a few cases were recorded, however, and the practice was attended with much uncertainty. It did not attract the attention of obstetricians generally. Braxton Hicks showed how, by the combination of the two methods, external manipulation and the use of a finger or fingers passed through the os uteri, certainty and despatch replaced doubt and tardiness.

Supposing first the simplest condition, the uterus passive, the membranes

intact, liquor amnii abundant, the presentation determined with certainty, and the os sufficiently expanded to admit one or two fingers, Braxton Hicks first described his method in these words:

Introduce the left hand, with the usual precautions, into the vagina, so as to fairly touch the foetal head even should it recede an inch. (This generally requires the whole hand.) Having passed one or two fingers (if only one let it be the middle finger) within the cervix and resting them on the head, place the right hand on the left side of the breech at the fundus uteri as shown in Fig. 1. Employ gentle pressure and slight impulsive movements on the fundus towards the right side, and simultaneously on the head towards the left iliac fossa. In a very short time it will be found that the head is rising and at the same time the breech is descending. The shoulder is now felt by the hand in place of the head as shown in Fig. 2; it in like manner is pushed to the left and at the same time the breech is depressed to the right iliac fossa. The foetus is now transverse; the knee will be opposite the os, and the membranes being ruptured, it can be seized, as at Fig. 3, and brought into the vagina. . . . Having now the labour at command, the case must be treated according to the circumstances which called for turning.

Pads and an abdominal binder could be applied if thought desirable.

He disclaimed

all intention of unnecessary deprecating an exceedingly valuable and ancient operation—one which has saved numberless lives and one with which at present we cannot dispense. Still, if it can be shown that in a considerable number of cases requiring version, the operation can be accomplished as quickly, or even more so, without the necessity of introducing the hand into the uterus, with the exception of one or two fingers passed a little way into the os, I am sure that such a modification of this more or less hazardous operation will recommend itself without any panegyrics on my part. For in that case it will readily be perceived that we shall avoid:

1. The addition of the hand, and perhaps arm, to the uterine contents and the irritation, present or future, caused by it.
2. Entry of air within the uterine cavity.
3. Liability to rupture of uterus.
4. Much of the pain and distress felt in the ordinary plan.
5. The removal of the coat and baring the arm of the operator; and as a minor consideration—
6. The fatigue and pain endured by the operator while the hand is in utero.

In the discussion which followed Braxton Hicks's paper at the meeting of the Obstetrical Society of London, R. Barnes stated that Wigand in 1807 had published an admirable memoir, largely overlooked except in his own country, in which he fully described turning by external and internal manipulation. At the time of his address Hicks was not aware of this memoir and was unable to question Barnes's assertion. Before the paper was published, however, Hicks acquainted himself with Wigand's memoir, embodying the result in an appendix. He fully admitted the value of Wigand's suggestions but pointed out that they were by no means identical with his own. Wigand made only two allusions to the use of the inside hand, first for exploration and secondly when he instructed that it be used to search for the head and to place it in the most favourable position with regard to the os uteri. He corrected the abnormal position of the foetus by 'outer manipulation alone' and having made out exactly the abnormal condition of the foetus, 'we should then make that part descend which is nearest the mouth of the womb'. His chief practice consisted

in straightening the child in utero. It was a valuable addition to the obstetric art but its applicability was limited. Further he made no mention of the power of the inner hand to push the child on in the direction of the head. As a result he was unable to effect the most important kind of version, complete podalic version. Wigand's method was taken up by many of his countrymen, notably Esterle, Stoltz, and Martin. The last mentioned laid down the following conditions for its success:

1. Immediate delivery not required.
2. A capacious pelvis.
3. Absence of pains.
4. The child must be alive.

Such conditions could not be granted if the method was to be employed during labour or emergency, the time when the case was usually seen by the obstetrician for the first occasion. Antenatal care was practically unknown and patients were seldom seen before labour had commenced. Indeed Hicks considered such to be 'very impracticable and, to a certain extent, unnecessary'.

Wigand and his followers were therefore unable to utilize his plan in placenta praevia, in coarctation of the pelvic brim, convulsions and many other cases where version was indicated. He expressly stated that his method was contra-indicated in antepartum haemorrhage, convulsions and prolapse of the cord.

Hick's method differed from all others in that he could produce cephalic or podalic version as thought desirable and that it could be done as soon as the cervix would allow the passage of two fingers. It permitted early interference in such cases as shoulder presentation and in cases of convulsions where speedy delivery was indicated and the introduction of the whole hand into the uterus fraught with danger. It diminished the risk in cases of contracted pelvis where version was the method of delivery selected. The shock attendant upon such a manoeuvre was much less when Hicks's method was adopted than when the whole hand was introduced into the uterus.

But it was in the treatment of cases of placenta praevia that Hicks's plan was of greatest service. It saved many lives and relieved much of the anxiety of the medical attendant. Hitherto in such a case if the cervix was not sufficiently dilated to pass the hand into the uterus, resort was had to packing the vagina—a difficult operation to perform effectively—and efforts made to press the head down upon the placenta. Many hours might be occupied in so doing—precious hours lost while the patient as likely as not continued to bleed.

Anything [said Hicks] which gave the practitioner some power of action was to be earnestly welcomed; anything better than to stand with folded arms, incapable of rendering assistance for hours or even days, every moment of which might carry the sinking and suffering patient nearer to the grave.

In every case of 'partial' insertion of the placenta praevia, as soon as a finger could be passed through the cervix, a leg could be brought down. The haemorrhage was at once controlled by the plug-like action of the foetal breech. Ample

traction was then exerted on the limb and then kept up while the os slowly dilated, *secale* (*ergot*) being given if necessary. Time was then given for the patient's vital powers to be restored. In extreme cases the worth of this time could not be over-estimated. Hicks was at pains to stress that delivery should not be hurried—he was most emphatic on this point.

What is the use [he said] of hastily delivering before the os is well dilated, and before the system has time to rally from the effects of flooding and of the version? Many of the deaths following *placenta praevia* may, I believe, be fairly attributed to too rapid delivery. How much must the collapse be increased and the uterus injured by endeavouring to drag the head through the yet rigid os? Turn, and if you employ the child as a plug, the danger is over; wait then for the pains, rally the powers in the interval and let nature, gently assisted, complete the delivery.

He recognized that difficulty might be encountered where the placenta completely covered the cervix. Such cases he thought, however, were very rare in his opinion, and it was but seldom that by detaching a portion of the placenta with a sweep of the finger the membranes could not be reached. Some further dilatation of the cervix by means of a Barnes bag was sometimes of assistance. It was in a case of *placenta praevia* that Hicks first employed his new method of version.

Many years were to elapse before Hicks had the satisfaction of finding his suggestions adopted. Many of his contemporaries could not or would not see the benefits to be derived from Hicks's suggestions. Had it been otherwise, he would much sooner have been recognized as one of the greatest benefactors of lying-in women that the nineteenth century produced. In the fifth (1867) edition of his *obstetric medicine and surgery* Francis H. Ramsbotham made no mention of the combined method of version on the treatment of *placenta praevia*. Discussing transverse presentations, the same writer referred to the correction of these by external manipulation by Wigand, Esterle and others. He continued:

Dr. Braxton Hicks, in London, has also advocated this method of changing the position of the foetus; and he has given some cases in which he also was successful. Dr. B. Hicks possesses a tact in this respect which I have never been able to acquire; and I do not think that the practice will ever be generally adopted by the profession in this country.

Truly the prophet had no honour in his own country! When, after the lapse of time, the value of the new method came to be realized, the mortality from *placenta praevia* quickly fell from 30 per cent to just over 5 per cent.

In the year 1867, Braxton Hicks made what some authorities consider to be the greatest of his contributions to obstetrics and that which C. J. Cullingworth described as probably one of the most admirable communications that has ever appeared in our *Transactions*. This paper was entitled 'On the Condition of the Uterus in Obstructed Labour: and an enquiry as to what is intended by the terms "cessation of labour pains", "powerless labour" and "exhaustion" '.

Prior to this time, great confusion and uncertainty had existed as to the exact meaning, and significance of, these terms. Braxton Hicks reviewed the opinions of many of the leading obstetricians of his day, thereby amply confirming such



ambiguity. Hall Davies (1865) understood 'powerless labour' to mean 'defective power in the agents of labour'—irregular and feeble uterine action not brought on by prolonged uterine action. Churchill (1867) on the other hand intended 'powerless labour' to mean a uterus worn out by long continued exertion, a condition associated with serious constitutional disturbance. This condition Hodges described as 'exhaustion'. But this term too suffered from a great variety of description, even such as Osborn looking upon it as a rapid weakening of the vital powers and as the precursor of collapse while others such as Davies looked upon the condition as one of uterine inertia from previous over activity of the uterus but not considered as a very serious state. By Blundell and others, the serious systemic disturbance was considered to be due to contusion of the soft parts caused by pressure of the foetal head, while some, whilst recognizing the condition, had no explanation to offer as to its cause. The term 'cessation of labour pains' was discussed with equal vagueness, the significance and interpretation of such not being properly understood.

There were but two British writers on obstetrics who, up to that time, had observed the real condition of the patient in obstructed labour—E. W. Murphy and E. Rigby. The former in his *Lectures on Parturition* (1857) noticed how, when there was any obstruction to the exit of the foetus, the uterine action became temporarily suspended. He went on to describe how the pains then returned, though not so strong as before, but recurring at short intervals, and often causing great distress to the patient. There might be a second cessation of the pains or they might continue with renewed force. In this latter event, the

pains are very short, extremely severe and, in their intervals, the patient still complained of pain and a feeling of soreness.

Now comes a very important point:

If the uterus be examined through the abdomen, you will observe a very perceptible difference in the sensation it communicates. It feels almost as hard and contracted during the interval as during a pain; the patient cannot bear the abdomen to be touched. Besides this alteration in the character of the pain, we have other symptoms, both local and general to guide us.

He then went on to describe the serious constitutional disturbance—rapid pulse, fever, thirst, anxiety, etc.—which followed such a train of events. Such a state of affairs Murphy believed was due to inflammation of the uterus. Similar views were held by Rigby.

Hicks fully recognized the importance of such observations but did not accept the explanations advanced. He pointed out that, even in normal labour, every uterine contraction made a demand on the nervous power of the patient. Therefore, the more frequent and more and more severe the contractions, the greater was the sapping of the patient's vitality. These facts, he believed, were liable to be overlooked. In a natural labour the system was able, in the interval between the pains, to replenish the loss without showing any untoward symptoms, although women varied much in this respect.

If then the above be admitted as facts, it must necessarily follow, that if instead of the ordinary intermissions between the pains, these latter are repeated so closely as to leave scarcely any interval, more especially if this rapidly recurring action be continued over a considerable space of time, we should reasonably anticipate that all the sooner we should find that the powers of the system begin to yield. Still more reasonably should we anticipate the earlier arrival of serious symptoms if, instead of the pains being intermittent, the uterine action became continuous.

Briefly, he showed that the state known as 'tonic contraction' and the systemic disturbance associated with such a condition, were due to nervous exhaustion, wherein lay the great danger of such a circumstance.

He believed that the lower in the pelvis the head became arrested, the more rapidly serious symptoms would develop. He did not agree, however, that, in calculating the demand made upon the nervous system by the uterine exertion, it was right to judge it by the exhaustion produced by the exertion of the voluntary muscle. He pointed out that

we should consider that in a great measure, the process of labour is carried on by the exertion of the largest involuntary muscle in the body, the supply of whose nerve force is directly and principally from the sympathetic system, the great nerve of relation whereby the general vital powers are immediately influenced, and impressions made upon the circulation in a much more rapid manner than by the exercise of voluntary muscles.

Braxton Hicks expressed the view that the consumption of nerve force was the cause of the rise of pulse rate and other symptoms of approaching danger, not the bruising of the soft-parts, although the co-existence of such an occurrence could materially increase the symptoms.

He went on to show that there were two classes of case in which the pains subsided after having been vigorous and that it was of the utmost importance to distinguish between the two as the treatment of each was totally different.

The first and simplest form [he said] is well known and is that in which the uterus is simply quiescent, resting passively for a time while the nervous power is being, so to speak, collected; after a time, the uterus begins to act and labour is accomplished. Now in this case there is no rise of pulse, generally, on the contrary, it is weak and feeble; nor are there any untoward symptoms but languor and possibly some faintness. In these, the reflex function is deficient, and its action sluggish, and therefore, the demand on the constitution to supply nerve force is proportionately small.

Such a state, he declared, could easily be distinguished by observing the lax and flabby state of the uterine wall, the foetus being easily palpable. This was the first clear description of what came to be known as secondary uterine inertia.

The second form of subsidence of the pains is, as already indicated, of the opposite character. The uterus becomes gradually irritated, so that although some of the pains still occur at irregular intervals, the uterus is really in more action than before. Tightly compressing the child, falling into the inequalities of its form whereby the foetus is prevented from escaping, every indentation of the uterus forming as it were, a ledge past which it is difficult to draw the child, or to pass the hand if we desire to turn. When this condition, more frequent than

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generally supposed, and not infrequent in primiparae, has once been fairly established, it is rare that the rhythmical pains ever recur with such force as to expel the foetus; as a rule, the continuous action remains, and sooner or later symptoms set in telling one of the necessity for interference.

To diagnose such a condition, it was seldom, he said, necessary to do more than lay the hand on the abdominal wall and feel the uterus which would be hard and firm, tightly moulded to the foetus which could not be moved about, the whole mass being more or less fixed.

Such was his vivid description of a uterus in a state of tonic contraction. Braxton Hicks was the first to distinguish clearly between the two conditions—one in which there is no undue cause for anxiety and interference not only unnecessary but rather contra-indicated. And on the other hand, one fraught with the gravest danger and calling for urgent interference, before one, or perhaps two, lives are lost.

Hicks also drew attention to one very important point—the danger of haemorrhage if delivery be unduly hastened and the child extracted while the uterus was in a state of relaxation. On the other hand, with a uterine in continuous action, extraction is the right and proper line of treatment.

To review all of Braxton Hicks's many papers on obstetrical subjects would fill a large volume but several others are worthy of more than passing notice. In 1869 he described his modification of the cephalotribe. Caesarean section was still a rare operation in Britain and obstetricians had devoted much time and thought to the perfection of instruments required for delivery after the foetal head had been opened. Originally invented by Baudelocque, the cephalotribe was long employed on the continent before it was used in this country. It consists of two powerful solid blades applied to the head after perforation and approximated by means of a screw so as to crush the cranial bones, after which it may be used for extraction. The peculiar value of this instrument lay in the fact that it crushed the firm base of the skull which was untouched by craniotomy and that it crushed the bones within the scalp, thereby avoiding one of the principle dangers of craniotomy—the wounding of the maternal passages by spicules of bone. Braxton Hicks's instrument was a modification of Simpson's. It stood the test of experience and was in use for many years.

In 1871 Hicks drew the attention of his colleagues to the contractions of the uterus throughout pregnancy—a phenomenon which is still referred to as Braxton Hicks's sign. Other writers had referred to this sign but the contractions which they had observed were the result of excitation whereas those described by Hicks occurred spontaneously. He discussed the point again at the International Medical Congress in London in 1881 and referred to it in one of his very last papers (1894). In this latter he admitted that such a sign might be observed in certain cases of fibroid tumours of the uterus.

In 1869, Hicks used silver wire to close the uterine incision after the performance of Caesarean section. It appeared that the reason which prompted him to employ suture was severe haemorrhage from a large sinus which was severed at the time of the uterine incision. Nevertheless, he succeeded in

preventing extravasation of the uterine contents into the abdominal cavity. The patient died on the fourth day after operation but at the post-mortem examination, the uterine wound was found firmly closed. Hicks was one of the first to employ sutures to close the uterine wound.

Looking through the list of Braxton Hicks's published writings it is evident that there were few subjects on which he did not write something. There are papers on the anatomy of the human placenta, on the behaviour of the pregnant uterus in chorea, on pregnancy associated with ovarian disease, on the induction of premature labour, on hydatidiform degeneration of the chorion, on transfusion, on rupture of the vagina in labour, on rupture and inversion of the uterus, on accidental haemorrhage, on Caesarean section, on extra uterine and intramural gestation, on the temperature during parturition and on the puerperal state, on puerperal diseases, on eclampsia, on labour obstructed by abnormal conditions of the foetus, on prolapsed cord, on labour with twins, on the best mode of delivery the foetal head after perforation, on acephalous monsters and on an outbreak of diphtheria in the obstetric wards. In every one of these he revealed his remarkable powers of observation.

Braxton Hicks will always be remembered as one of the greatest obstetricians and gynecologists which Britain has produced. It is worthy of note that Palmer Findley in his *Priests of Lucina* gives biographies of but three British obstetricians of the nineteenth century. Braxton Hicks was one of these, the other two being Sir James Young Simpson and J. Matthews Duncan.

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