

## OBSTETRICAL MORBIDITY AND END-RESULTS

### A PLEA FOR NEW MORBIDITY STANDARDS

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**W**ITHIN recent years the medical profession has been concerned with checking up the end-results of its work. Scientific inventory-taking makes it possible to anticipate what will occur following a line of action if certain fundamental facts are given. The conclusions drawn from such studies by men of sound judgment and experience have been invaluable. Concerning obstetric morbidity this does not hold true. Our present morbidity records are not reliable.

Our attention was attracted to this subject from reading so many conflicting reports. The majority of published articles on this subject, in the last analysis, have proved nothing of a concrete, definite character. The subject has been considered from a multitude of angles. Studies have been based on as few as 89 cases and as many as several

thousand. Even the subdivisions, such as rectal versus vaginal examinations and morbidity, have resulted in a wide variance of opinion. It leaves one confused and incredulous.

All do not agree on the definition of morbidity. The fault lies in the fact that any summary of morbidity is apt to be valueless because there are so many standards in use. All are based on the index of temperature. On the one hand, one may choose the standard offered by the American College of Surgeons, the University of Michigan, the American Medical or British Medical Associations, etc. On the other, one may choose from standards set by individuals. DeLee, Goodall and Wiseman are examples of but a few of these. The majority accept the standard of an elevation of temperature of 100.4° F. on two successive or more days, not including the first twenty-four hours after delivery and not after ten days postpartum. And so, it resolves itself down to the fact that different workers have their choice of different standards for morbidity but all are based on a certain temperature for a certain period of time within fixed time limits. Etiologic factors, underlying pathology, future possibilities, or anatomical damage as a result of childbirth assume minor rôles. This leads to reports of morbidity findings as low as 3.4 per cent and as high as over 70 per cent. Surely such a wide variation shows on its face that something is amiss which calls for further consideration.

Therefore, believing that present methods of computing morbidity are wrong, we decided to review some of our own records to see if we were right in our premises.

J. O. Polak published the morbidity findings for five years (1924 to 1928 inclusive) totalling 5460 cases at The Long Island College Hospital. The average morbidity for the in-patient service was 10.52 per cent; for the out-patient service 3.10 per cent, an average of 6.86 per cent. Polak said, "If we accept as febrile a morbidity based on a single rise in temperature on any day during the puerperium, we find that for all the years it is 73.96 per cent." Some years ago one of the writers (Welton) reported the mortality and morbidity figures for four years on the obstetric services at the Greenpoint Hospital, the cases totalling 3107. This was for the purpose of showing the results of conservative obstetrics. In addition we reviewed 1092 cases during 1929 at The Long Island College Hospital. We have grouped these findings and offer a composite review. We do not present these results for the purpose of impressing one with our morbidity findings, but to prove that if allowed to stand alone, as is the case with the majority of reports, they will be misleading.

Our gross morbidity was 7.80 per cent. This was based on the temperature standard offered by the American College of Surgeons. What does this morbidity mean? It means that seven and a fraction women out of every hundred, twenty-four hours following delivery, had a certain temperature for a certain length of time. A careful review of

the case histories revealed that these figures did not include all cases that were actually morbid, that many cases tabulated under morbidity were not such in a true obstetric sense, and that many patients who had pathologic findings but who ran an afebrile course were not, therefore, classed in the morbidity column. Some patients never ran a temperature above 100° F. until after the tenth or twelfth day. They were classed as negative although after that time positive complications arose.

Cognizant of these facts we believe our report of a morbidity of 7.80 per cent is valueless, except in so far as we learned that a certain percentage of women in childbed had at some time a certain temperature.

It has been said that obstetric morbidity varies with the seasons. Therefore we worked out our morbidity by months.

We found the morbidity by months to have been:

September	7.50 per cent
October	8.20 per cent
November	8.60 per cent
December	7.50 per cent
January	8.10 per cent
February	10.20 per cent
March	8.80 per cent
April	8.0 per cent
May	8.1 per cent
June	6.8 per cent
July	6.6 per cent
August	5.3 per cent

From this one might conclude that the morbidity rate rose slightly during the winter months. However, it is well known that in certain areas the incidence of upper respiratory infections from November to April plays havoc with the morbidity rates. Upper respiratory infections were accountable for the following proportion of the listed morbidity:

September	1.3 per cent of total morbidity
October	3.8 per cent of total morbidity
November	26.1 per cent of total morbidity
December	34.2 per cent of total morbidity
January	40.0 per cent of total morbidity
February	38.3 per cent of total morbidity
March	26.4 per cent of total morbidity
April	9.0 per cent of total morbidity
May	4.1 per cent of total morbidity
June	0.8 per cent of total morbidity
July	1.1 per cent of total morbidity
August	0.4 per cent of total morbidity

If this be true then our supposed corrected morbidity is lower during the winter months. However, this, too, is a trick with figures based on temperature.

Many conditions having no or only a remote relation to the pregnant state were found to account for fever in addition to upper respiratory infections. We list: toxic urticaria, appendicitis, septic endocarditis, pyelitis, massive collapse of the lung, cystitis, Vincent's angina, pulmonary embolus, infected teeth, abscess of Bartholin's

gland, pneumonia, pleurisy, infected hemorrhoids, gall bladder affections. In a large number of cases no cause for the temperature could be discovered. These conditions (and others no doubt not diagnosed) caused an increase in the obstetric morbidity figures.

Deducting all causes not related to obstetric pathology we found the true causes for fever to have been: lochiometra, endometritis, mastitis, breast abscess, parametritis, peritonitis, thrombophlebitis of the pelvic veins, phlegmasia alba dolens, bacteremia, rupture of an ovarian abscess, infection of the perineum and cervix, and the postoperative rise following cesarean section.

Exclusive of all causes for fever having no bearing on the parturient state or related to pregnancy, the corrected morbidity would be:

September	4.3 per cent
October	5.1 per cent
November	4.3 per cent
December	3.9 per cent
January	3.8 per cent
February	4.1 per cent
March	5.1 per cent
April	3.7 per cent
May	4.2 per cent
June	4.4 per cent
July	5.0 per cent
August	5.1 per cent

This gives a corrected morbidity of 4.5 per cent. On dismissal from the hospital only 0.6 per cent could be placed in the morbidity class.

We looked deeper into this corrected morbidity rate in an attempt to ascertain if this supposed true morbidity percentage had any practical value. We concluded it meant nothing. For, in studying these individual records it was surprising to note how many patients ran temperatures, often above 103° F. for a short time (one to three days), in which no positive findings were present. Suddenly the temperatures permanently dropped to normal. Repeated examinations and laboratory check-up gave negative reports. We will never know what occurred. No physical damage was done. It was merely curious that these women ran a high temperature for a short time. Yet, such cases are classed as morbid. It only proves that some transient, mild obstetric complication was present that quickly cleared up, leaving the patient in a normal condition. No matter how we tabulate or juggle such figures we will not learn how to prevent such flare-ups in the future.

On the other hand, we noted that many patients ran a low degree of temperature (99° to 100.2° F.), for days, with well-defined evidence of trouble present. We did not include such cases in the morbidity tables as they did not come under our standard for morbidity. For all practical, common sense purposes they should have been included. Also we observed it is common for a febrile state to exist for several days following a perineal repair. Some authors have contended that

the morbidity following episiotomy is less than after frank lacerations. Either way, these are listed as morbidity because of the temperature, although the trouble is temporary and the end-results negative. Some patients had temperature rises on several days apart, such as the second, fifth, and ninth days. Sometimes such temperatures were 101° F. or higher, and yet they were signed out afebrile. It has happened that some of these women have at a later date returned to the hospital with extensive exudates or other serious pelvic pathology. We have in mind a woman who never ran a temperature above 100.2° F. but who developed a pelvic abscess that had to be drained. Although truly morbid she was not included in that class.

Polak conducted studies on morbidity following rectal and vaginal examinations. The difference was slight. However, he learned, in one series, that there was a morbidity rate of 95.9 per cent in women who had had neither vaginal nor rectal examinations and who delivered spontaneously. Suppose these figures stood without the explanation that all these women went into labor while suffering with severe upper respiratory infections and fearing a spread of the contamination no examinations were made. They would not really represent an obstetric morbidity. Nevertheless, in the tabulation of all our cases they are included in the morbidity class.

L. Grant Baldwin studied the subject of mercurochrome vaginal instillations prior to delivery and presented figures according to three standards of morbidity classification. The reported end-results were far apart according to each classification.

In our case we learned that our gross morbidity based on temperature was 7.8 per cent; that our corrected morbidity was 4.5 per cent; that from November to April 25 to 40 per cent of the morbidity was due to upper respiratory infections; that should we include with these, breast infections and infection of the kidney tract they would bring the rate up to 75 per cent; that on dismissal from the hospital less than 1 per cent had any obstetric pathology present; that according to our classification some cases had definite pathology but were not morbid according to the rules; that many were morbid from unknown causes which were never discovered. We could work out other ingenious angles, but after all is said and done we would prove nothing of any importance or accuracy, except, perhaps, that endless factors, some known, many unknown, will cause temperature.

Do not gather from these remarks that we would have you insensible to obstetric morbidity. It is an ever-present menace to childbearing. It is an elusive thing, at times hard to classify or explain. So many factors enter into it that often we can discover no one cause. Efforts must be continued to lessen true obstetric morbidity.

We have tried to point out that morbidity records based on temperature alone are confusing and inaccurate. For, after all, tempera-

ture is but a symptom as is pain, a foul lochia, a chill, and surely of no more importance than certain physical findings such as abdominal tenderness or distension, a peritoneal rebound, a pelvic mass, bacteria in the blood stream or a high differential and leucocyte count.

Therefore, we venture to offer for discussion other standards for computing obstetric morbidity. We would list as morbid every patient who gave evidence of any definite or prolonged pathologic condition with or without fever directly resulting from childbirth. We would exclude all intercurrent or incidental affections not crossing the borders of or impinging on the postpartum state. We would include all anatomical damage and mechanical derangements resulting from childbirth that would affect the health of the woman, i.e., inversion of the uterus, rupture of the uterus, cystocele, rectocele, prolapse of the uterus, a badly lacerated cervix, or unrepaired or broken down extensive laceration of the perineum, and all fistula in the genital tract. We would include all of these, whether found with rise of temperature or not. Any condition resulting from childbirth that causes any degree of prolonged ill health, that renders the woman more or less invalid, that may cause future sterility or make future childbearing a dangerous experience, we would list as morbidity. Fever, a likely and important factor in the symptom complex might be a means of arriving at the end, but would not be the end itself. Every case dismissed from the hospital should be reexamined a month or six weeks postpartum before the records are closed.

We have not attempted to formulate a fixed, rigid set of rules, but have offered these suggestions in broad outline, feeling that when other standards for computing obstetric morbidity than that of the one index of temperature now in use are accepted by all men, we will then have records of accuracy and practical worth.

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