Definitions and verbal precision

One of the major impediments to improvements in labor care is the lack of clear definitions (Chapter 3). This is true not only of common clinical conditions, of which “normal labor” is a good example, but also of the elementary parameters that describe the basic processes marking the onset and progression of labor. In daily practice, the terms effacement and dilatation are constantly used, but they are seldom accurately defined. In addition, many current expressions such as “the latent phase of labor” usually serve as a cloak for indecision, and ambiguous phrases such as “failure to progress despite good contractions” convey a blatant ignorance of the situation. Most problems encountered in the conduct of labor have their origin in inaccurate diagnosis; unwittingly, these are classified as “dystocia,” the most frequently reported indication for operative delivery. Although its common definition – abnormal progress in labor – seems simple, there is an endless variation in the interpretation of what abnormal progress means. This explains the wide variation in the reported incidence and related operative delivery rates in hospitals that appear similar in all other aspects. Dystocia is in fact a complex concept, heterogeneous in its manifestation and causation, and should therefore be examined in detail (Chapters 21, 22). Detailed analysis, in turn, first requires strict definitions of the basic parameters of birth.

11.1 Elementary parameters of parturition

To avoid semantic debates and confusion about various stages and components of labor, we will formulate unequivocal definitions for such basic phenomena as efficient contractions, cervical effacement, and cervical dilatation. These definitions and their relationship to the definitions of separate clinical events – such as the onset of labor, normal progress, false labor, effective labor, and dystocia – are critical for expert birth care. Evidence-based obstetrics begins with strict definitions.

11.1.1 Labor pains = contractions of labor

Although labor pains are painful contractions, painful uterine contractions are not necessarily labor pains. In Germanic languages (e.g., German and Dutch) different words exist for labor pains (Wehen), meaning labor contractions, and uterine contractions in general but not specific for labor (Kontraktionen). A similar distinction between “contractions” (of labor) and uterine “contractions” (unrelated to labor) has been suggested in the English literature. In practice, however, these words with explicitly distinctive meanings are being hopelessly mixed up. It is alarming how ambiguously the term “pains” (Wehen) is misused, confusing the question whether or not a state of labor exists. Many professionals use extremely unprofessional terminology such as Vorwehen (prelabor pains?!), Übungswehen (practice pains?!), etc. This confusing use of language can only lead to a lack of clarity and uncertainty at the bedside.

“Obstetrics is focused on particular elements of abnormal labor and how to surmount problems by operative means, without first defining the basic norms on which such interventions should be based.”

1
because the only thing that counts for the woman in question is that she either does or does not have labor pains because she either is or is not in labor. For her there is no in-between. Absolute clarity regarding the onset of labor is a basic requirement for professional care. Labor pains, i.e., contractions of labor, are by definition uterine contractions that have a progressive effect on the cervix. Pains (Wehen) are inherent to labor. There is no labor without labor pains, and a woman does not have labor pains (Wehen) without being in labor. Braxton Hicks contractions may indeed be painful, but by definition they are not labor pains (Wehen) because they do not have any effect on the cervix. Labor is characterized by pains plus progression.

**11.1.2 Effacement**

Effacement refers to the inclusion of the cervical body into the lower uterine segment. This process begins at the internal os and proceeds gradually downward to the external os, at which juncture the cervical canal disappears and effacement is complete (Fig. 11.1).

*Definition*

Effacement is the shortening of the cervix through its incorporation into the lower uterine segment. With full effacement there is no longer an internal os or a cervical body.

**11.1.3 Cervical accessibility versus dilatation**

In nulliparas, the antepartum cervical body is closed, but at term it often becomes weak enough to allow the easy passage of a probing fingertip. It is an endless source of confusion that this finding is considered the equivalent of 1 or 2 cm dilatation in an intact or halfway-effaced cervix. Since dilatation refers only to the external os of the fully effaced cervix, such a conclusion is by definition impossible and counterinformative. One should not call this dilatation but rather cervical accessibility. The term accessibility is intended to convey an inert and temporary static situation, which provides information regarding the extent of pre-labor cervical weakening. In contrast, the term dilatation connotes an evolving, dynamic situation resulting from active uterine force. This distinction may seem to be semantic quibbling, but it is actually essential for avoiding the rampant verbal confusion and mistakes that currently occur in the diagnosis of labor (Chapter 14). “Of course, no problem in the diagnosis of labor exists when a well-dilated cervix accompanies regular and painful contractions. As always, the need for verbal precision is greatest in doubtful cases where diagnosis presents a genuine problem.”

*Cervix in labor*

Effacement and dilatation are consecutive and not simultaneous features of one and the same process: the incorporation of the cervix in the lower segment of the uterus.
“Accessibility” gives information about cervical ripening, “dilatation” about uterine force.

11.1.4 Dilatation

The term dilatation relates only to the active opening of the external os by uterine force. The external os can be actively opened only if the cervical body has completely disappeared into the lower uterine segment, i.e., if full effacement has occurred. It is essential to recognize that effacement is, by definition, completed before dilatation begins. To speak about dilatation before effacement is complete involves a direct contradiction in terms.

**Definition**

Dilatation is the diameter of the external os of the fully effaced cervix.

This definition holds true for both nulliparas and multiparas. The term dilatation is commonly used incorrectly, especially in relation to multiparas, because most standard textbooks mistakenly teach that the patulous parous cervix simultaneously effaces and dilates. This is a persistent mistake, based on and leading to a careless use of words: cervical accessibility is confused with dilatation. In contrast to the situation with nulliparas, the parous cervical canal is cone-shaped and the external os may freely admit one or two examining fingertips in late pregnancy, while the internal os may still be closed (Fig. 11.1). Thus, by definition, there is still no dilatation, only accessibility. Contractions do not yet stretch the external os, because the body of the cervix must first vanish completely (full effacement) before the external os can be pulled open. Accessibility only then becomes dilatation. In practice, full effacement is the equivalent of 1 cm of dilatation in a nullipara, because the external os is always open to this extent. In multiparas dilatation begins only at 2 or 3 cm (Fig. 11.1) and in grand multiparas the dilatation scale could begin at an even larger value.

11.1.5 The transition at full effacement

Effacement and dilatation are consecutive and not simultaneous features of one and the same process: the incorporation of the cervix into the lower segment of the uterus. The point at which effacement ends and dilatation begins requires special attention. At this juncture, the presence or absence of painful contractions is decisive and the practical consequence is straightforward: without regular contractions there is no question of labor, whereas a woman with regular, painful contractions and a fully effaced cervix can and must be firmly declared to be in labor (Chapter 14).

The significance of complete effacement for the diagnosis of labor is generally overlooked.
11.1.6 The beginning of labor

One of the most important decisions in labor involves recognizing whether or not labor has started. Many care providers avoid this dilemma by leaving this decision to the woman as a self-diagnosis on the basis of regular, painful contractions, at which point the so-called latent phase of labor begins (Chapter 9). However, this practice avoids a professional distinction between true and false labor. Even leading textbooks, which strongly influence current teaching and practice, still claim that “the confirmation of labor is presumed to be reasonably reliable only once painful contractions have established at least 3 cm dilatation.” According to that proposition, the diagnosis of labor is confirmed only after the event, and even worse, primary dysfunctional labor is not recognized at all (Chapters 14, 15, 21). An essential difference between theory and practice is that the doctor – or more likely the midwife – cannot enjoy the luxury of hindsight when an agitated woman presents late at night because she thinks she is in labor. A firm and prospective decision is required in these circumstances, and full effacement plays a decisive role (Chapter 14).

The point at which effacement ends and dilatation begins is the practical demarcation line of whether a woman with regular contractions is in labor or not.

Given the fundamental importance of accurate diagnosis in early labor, separate chapters will address the distinction between true and false labor and the timely recognition of primary ineffective labor (Chapters 14, 15, 21).

11.1.7 Crucial clarity

Poor definitions and resultant conceptual blurring hinder the transfer of knowledge and stand in the way of significant discussion on any aspect of labor. Most studies on labor-related issues in the obstetric and midwifery literature are more or less invalidated by imprecise definitions of elementary parameters of labor such as its onset and thus the duration of normal labor. By inference, systematic reviews on studies of dystocia, amniotomy, augmentation of labor, etc., are often much less evidence-based than they pretend to be.

Even more worrying from the perspective of everyday practice is the use by professionals of ill-defined and equivocal terminology for basic parameters of birth, which hampers adequate transfer of exact patient information. This inevitably leads to inconsistent management by ever-changing staff and hence confusion at the bedside. No one can deny that consistent care requires care providers cooperating within a single practice use the same language and unequivocal terminology.

Accurate definitions and verbal precision promote consistency in thoughts and actions and clarity at the bedside.

Clear and consistent labor management benefits from the proper use of professional language; a woman either is in labor or she is not. Unprofessional phrases, such as practice run, labor not established, rumbling, niggling, nagging, latent labor, slow start, beginning in labor, or moderate labor, serve only as a cloak for indecision or ignorance and are as misleading as saying a little bit pregnant, somewhat sterile, or a little bit dead. Nonetheless, one is regularly faced with a woman who considers herself to have been in labor for more than 24 hours, while her primary birth attendant classifies her first 10–20 hours as niggling, latent, or moderately or gradually beginning, or slowly in labor. Such meaningless jargon only serves as cover for a hesitant and muddling demeanor which, in turn, can only lead to chaos, misery, and despair. Thus, for clarity’s sake:

- Strict definitions of the terms effacement and dilatation are the first requirement for the correct diagnosis of the onset of labor (Chapter 14).
• A careful diagnosis of labor onset is a *conditio sine qua non* to define the duration of labor.
• Only a strict definition of labor duration allows for objectively distinguishing between a normal and an abnormal duration, which further supports the criteria for normal progress (Chapter 15).
• A clear definition of normal progress is needed for determining departures from normal and for evaluating treatment (Chapters 21, 27). Clinical science, too, begins with definitions.

Most studies on normal labor, prolonged labor, and dystocia are invalidated by imprecise definitions of labor onset, and systematic reviews are consequently less evidence-based than they pretend to be.

11.1.8 “Good” contractions

The sole purpose of uterine contractions in the first stage of labor is to dilate the cervix and, ultimately, to provoke descent and activate the pushing reflex. The sole objective of contractions in second-stage labor is to prompt the cardinal movements of the fetal head and to expel the fetus. Therefore, the quality of contractions should be evaluated exclusively as it relates to these effects.

Unfortunately, too many care providers lose sight of these effect-criteria. They often use meaningless jargon such as “slow, prolonged, or protracted labor, despite good contractions.” This is a contradiction in terms. Careless use of words stems from, and leads to, a failure to recognize dynamic birth disorders in time (Chapter 21). The regrettable result is therapeutic paralysis by dithering and insecure providers in cases of primary ineffective uterine force in early labor, leading to a detrimental waste of time and an unnecessary exhaustion of both the woman and her uterus.

The effect-criterion

*The quality of contractions must be evaluated exclusively in terms of their effect.*

Impressive uterine action (“super strong contractions”), as judged from the external appearance of the patient, is easily misinterpreted as a manifestation of good contractions. This explains why many orthodox caregivers allow themselves to be misled into a mode of expectation despite minimal progress, which is then discovered too late. Even when the contractions have become a truly painful experience for the woman and feel forceful upon palpation, this does not mean that uterine action is also efficient and effective (Chapter 8). These clinical signs correlate only poorly with labor progress. Uterine action is not the goal, but uterine effectiveness is, and the only “good” contractions are those with a progressive effect on the cervix. Proper evaluation of normality of labor requires accurate assessment of progression in dilatation. In other words, appropriate supervision of labor demands regular vaginal examinations. Four hours of waiting is much too long to discover that labor has hardly progressed (Chapter 15).

11.1.9 Pitfall of intrauterine pressure readings

A similar misconception flourishes in relation to Montevideo units, of which most clinicians mistakenly believe that they evaluate the quality of contractions. By this definition, uterine activity is the product of intrauterine pressure – peak uterine pressure above base-line tone – of a contraction in mmHg multiplied by contraction frequency per 10 minutes. The decision to start or refrain from augmentation of labor is then made depending on an arbitrary amount of Montevideo units, as though uterine pressure were a goal in and of itself. However, it is not the pressure that is relevant, but the net effect of the vector force, i.e., progression in dilatation. Moreover, pressure and force are two entirely different physical entities and uncoordinated dysfunctional contractions can build up pressure without exerting effective, directional force on the cervix (Chapter 8). In fact, insufficient progress of labor is the only criterion on which to base the clinical decision to augment labor,
regardless of the amount of Montevideo units, and the same applies to the evaluation of treatment. In reality, Montevideo units are not as useful in the evaluation of uterine performance as they are typically believed to be. The only relevant parameter is labor progression; pressure is not the measure.

The only good contractions of labor are those that lead to adequate progression of the birth process, irrespective of painfulness, uterine tone, or Montevideo units. Force is the course; pressure is not the measure.

11.2 Redefining the stages and phases of labor

Although natural labor is a continuous process, human childbirth traditionally has been divided into the first or dilatational stage of labor and the second or expulsion stage of delivery, with full cervical dilatation as the transition point.\textsuperscript{3,4} In conventional teaching, first-stage labor is artificially subdivided into the alleged latent phase of labor and the active phase of labor (Chapter 9).\textsuperscript{2,3,4} These artificial divisions were originally designed to facilitate study and to assist in clinical management. Ironically, however, most problems in the conduct and care of labor arise exactly from these classic subdivisions. In daily practice, inept management of labor largely results from inaccurate assessment of the transition from one stage of labor to the next: the prelabor transformation phase $\rightarrow$ the onset of true labor $\rightarrow$ the first or dilatational stage $\rightarrow$ the onset of the second or expulsion stage.

11.2.1 The latent phase refuted

Imprecision in describing the cervical changes in early labor has led to fundamental and pervasive misapprehensions. There are numerous compelling arguments for radically erasing the concept of the latent phase entirely from our vocabulary and our practice:

- The fact that effacement and dilatation are consecutive and not simultaneous events was generally overlooked in the original studies describing early labor. Similarly, the decisive role of full effacement was entirely neglected.
- In the source studies introducing the concept of latent labor, the term dilatation was ill-defined, so that cervical accessibility was most likely misinterpreted as dilatation. If the fundamental parameters are ill-defined, the subsequent conclusions can be wide of the mark.
- The concept of the latent phase is based on studies flawed with methodological inaccuracies and based on miscellaneous populations not representative of “normal” labor (Chapter 9).
- It is the artificial concept of the latent phase, in particular, that frequently provides an alibi for indecision, ambiguity, and a failure to implement essential policies in early labor.
- Recognition of a latent phase allows birth care providers to circumvent the differentiation between true and false labor and between effective and primary ineffective uterine action in early labor (Chapters 14, 15, 21).
- These omissions are the most common and most pervasive shortcomings in conventional birth care, leading to inept labor management and unnecessarily long labors with all the related complications.

For these reasons, we had better discard the concept of the latent phase of labor completely. Instead, we advocate clear criteria based on accurately defined parameters to confidently assess the clinical onset of labor (Chapter 14) as well as normal progression in early labor (Chapters 15, 21).

The latent phase of labor is poorly defined, and it is prudent to discontinue the clinical use of this misguided and misleading concept altogether.

11.2.2 Normal progress in dilatation

The characteristics of normal first-stage labor are actually far less complex in practice than suggested
by Friedman’s sigmoid dilatation curve; there is no latent phase and there is no deceleration phase in normal labor. Normal dilatation proceeds in a straight line (Chapter 9) and at a rate of at least 1 cm/h (Chapter 15). Primary slow progression in early labor is a dynamic birth disorder (Chapter 21) and so is secondary slowing down: it occurs only in abnormal labor when the fetal head fails to descend because of inadequate wedging action (Chapter 9). In normal labor, however, the transition from the retraction phase to the wedging phase – a subdivision based purely on physical grounds (Chapter 9) – passes completely unnoticed. There are no distinct recognizable phases in normal first-stage labor, only in abnormal labor.

In contrast with the conventional Friedman doctrine, normal labor is characterized by steady progress in dilatation from the outset, without any terminal deceleration phase of dilatation.

11.2.3 Onset of second-stage labor

In conventional teaching, complete dilatation is the demarcation point between first- and second-stage labor. The unfortunate result of this contention is that mainstream practice dictates that the parturient begin to bear down (push) in concert with each contraction as soon as the cervix attains full dilatation, even if she does not feel the urgency to do so. Here obstetrics strays far from biology; female mammals in nature deliver their offspring without the assessment of full dilatation, and in prehistoric times a cavewoman did not know when she had achieved complete dilatation. The only thing she invariably noticed was the irrepressible pushing reflex as soon as the descending fetal part applied pressure to her pelvic floor and compelled her to bear down.

From a biological and practical standpoint, it is far more logical to distinguish between a passive (dilatation) first stage and an active (expulsion) second stage of labor. The logical dividing line between the two is the reflexive, irrepressible urge to bear down at each contraction near, at, or after attainment of full dilatation. At that point the fetus’s head has already descended at least halfway down the pelvis or even rests on the pelvic floor. This terminology is more in accordance with the mother’s perception and behavior because she experiences a sudden overwhelming sensation of pressure on her levator and lower rectum. As a natural reflex her hitherto passive role in labor – in terms of working to birth her child – suddenly changes to instinctive, active work in which she delivers her baby. The difference between the newly proposed and the conventional demarcation points is fundamental: absence of the irrepressible pushing reflex at complete dilatation indicates that the active stage of expulsion has not yet begun. Pushing at full dilatation in the absence of the instinctive, irrepressible reflex to do so goes against nature and is relatively ineffective (Chapter 21).

Fundamental redefinition

The traditional tenet that divides labor into the first (dilatational) and the second (expulsive) stages, with full dilatation as the dividing line, is replaced by the distinction of the first (passive) and the second (active) stages, with the occurrence of the expulsion reflex beyond full dilatation as the transition point.

This proposition has far-reaching consequences for practice. Firstly, if the fetal head is still high and care providers urge the woman to push in the absence of the reflexive impulse to do so, she is likely to waste her energy and her resolve. The ensuing slow progress and exhaustion or arbitrary time limits will then often result in a failed expulsion resolved by instrumental traction. Secondly, attempts to deliver the fetal head by forceps or vacuum during first-stage labor – even though the cervix is fully dilated – are almost inevitably traumatic for both mother and baby, because the fetal head is still high in the pelvis and the vagina is not yet stretched. If forced extraction is undertaken, the
obstetrician has to pull very hard – often too hard – and clinical experience shows that once an effort at rotation and extraction is begun it is very difficult to stop. In contemporary obstetrics, instrumental extraction of a caput from above the inter-spinal line (0-station) should be considered as malpractice (Chapter 22), unless it is done for exceptional circumstances such as acute and severe fetal distress, for example due to (partial) placental abruption.

11.3 The concept of normal labor

Normal labor and delivery is the goal to which all who are concerned with childbirth should consciously aspire. Hence it may come as a surprise to discover that “normal labor” is seldom, if ever, prospectively defined. “Normal” labor and delivery is typically regarded as a conclusion in retrospect: if a healthy baby has been born in good condition without any medical interference. However, a retrospective deduction does not positively inspire care providers toward a sensible rationale for the conduct and care of labor in order to achieve the ultimate prize of spontaneous delivery. The formulation of an agreed and prospective definition of normal labor is therefore an immensely useful and rewarding exercise. “This definition should be posted in a prominent position in every antenatal clinic and every delivery unit, to serve as a clear statement of common purpose.”¹ We propose the following:

Prospective definition

Labor is normal if it starts spontaneously, if progress is normal (at least 1cm/h), if the woman gives birth to her baby vaginally, by her own efforts, and without harm to either party.

By inference, labor is classified as abnormal when labor is induced, when labor lasts longer than 12 hours, when labor is concluded by operative delivery, when any harm befalls the baby, or when the mother sustains substantial physical or emotional damage. This is not to say that induction, outlet instrumental delivery, or cesarean delivery should never be practiced, but rather that they should be practiced with utmost discretion as the lesser of two evils.¹

It should be noted that selective amniotomy and selective use of oxytocin are intentionally not designated as “abnormal,” as these are specific measures particularly taken to restore “normalcy” of labor. This view is shared in the consensus statement on normal birth from the UK Maternity Care Working Party consisting of representatives from the Royal College of Midwives, the RCOG, and the UK National Childbirth Trust.⁶ A detailed and comprehensive plan specifically designed to offer all women the best chance of a normal delivery is the subject of the next section of this book.

“An agreed, prospective definition for ‘normal labor’ should be posted in a prominent position in every antenatal clinic and every delivery unit, to serve as a clear statement of common purpose.”¹

11.4 Summary

- Most of the problems encountered in childbirth originate in inaccurate diagnosis, primarily because the elementary parameters describing labor and delivery are poorly defined.
- Most of the literature on labor is invalidated by imprecise definitions of onset of labor, and as a consequence, many systematic reviews about the duration of labor and dystocia are much less evidence-based than they pretend to be.
- New and unequivocal definitions are presented for the basic parameters of parturition, and the conventional teaching of the phases and stages of labor is challenged and fundamentally reassessed.
- Effacement and dilatation are consecutive and not simultaneous features of one and the same process: the incorporation of the cervix into the lower segment of the uterus.
• Dilatation is the diameter of the external os of the fully effaced cervix. Effacement is by definition completed before dilatation begins.
• Critical to rational management of early labor is abolishing the concept of a latent phase, and establishing a clear clinical diagnosis of true labor onset instead.
• The only “good” contractions are effective contractions establishing sufficient labor progress, irrespective of their painlessness, irrespective of uterine tone as determined by fundal palpation, and irrespective of the number of “Montevideo units” assessed with intrauterine pressure monitoring. Pressure is not the measure, only progress counts.
• Adequate uterine force is the deciding factor for a successful birth. The frequently heard clinical conclusion “insufficient progress despite good contractions” conveys a blatant ignorance of the biophysics of labor. Only adequately orchestrated uterine contractions are efficient and only efficient contractions can be effective. Uterine force determines the course.
• The threshold between the first and second stages of labor is fundamentally redefined. Full dilatation is not the deciding criterion, but the onset of the irresistible pushing reflex after full dilatation has been achieved.
• As always, the need for verbal precision is greatest in doubtful cases where diagnosis presents a genuine problem, such as the onset of labor, the distinction between normal and abnormal progression, and the transition point from the first to the second stage of labor.
• Only verbal precision and accurate definitions allow reliable diagnosis and promote consistency in thoughts and action, both prerequisites for expert labor management according to the principles of proactive support of labor.

REFERENCES