

Laplace Law Controls Pregnancy Intervals, Circadian Timers, and Mode of Delivery Through Exponential Uterine Wall Tension and Hormonal Milieu: A Hypothesis 3

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Abstract

Background Our hypothesis suggests another view regarding the following: Labor physiology. Labor progress. Labor dystocia. **Objective** To support the hypothesis. **Study Design** This study investigated the current evidence-based literature and research that may support the hypothesis. **Results** Intrinsic myometrial cell character ensures that parturition is an autonomic, intrinsic, and interactive repetitive contraction and relaxation cycle, secondary to myometrial tension changes that cause labor progression and protect the foetus against hypoxia. The progress during the first stage of labor and what is called cervical dilatation is the complete transformation of the cervix into the LUS, which has a clinical and radiological presentation. The clinical presentation is effacement, and dilatation. Radiologically, the cervix transforms into the LUS through an inverted inside-out TYVU and an inverted U pattern formation. In the second stage of labor, the cervix has completely transformed into the LUS which is a wedge-shaped birth canal that extends from the vaginal vault (cervicovaginal junction) into the physiologic retraction ring. All these changes reverse instantly after foetal delivery, and the cervix returns to its anatomical site and regains its full anatomical shape. Concomitant malfunctions of the inhibitory and stimulatory systems cause labor dystocia. **Conclusion** Labor dystocia is the failure of the complete transformation of the cervix into the lower uterine segment secondary to combined inhibitory and stimulatory system malfunction. Most of the cervical transformation into the LUS takes place during the third trimester and is completed during the first stage of labor. So, the treatment of labor dystocia should focus on the causes of the stimulatory system's malfunction before the onset of labor. There is evidence to support the hypothesis, and it should be in the interest of obstetricians, physiologists, midwives, neonatologists, and those with a research interest in maternal and family welfare.

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