Birth Lacerations in Different Genital Compartments and their Effect on Maternal Subjective Outcome: A Prospective Observational Study

Introduction Lacerations are common in vaginal births, but little is known about tears other than perineal tears and their association with maternal impairment. Because genital tract trauma can cause short- and long-term physical and psychological maternal morbidities, it is essential to provide women with detailed information about the incidence, distribution, risk factors for, and consequences of the different types of birth lacerations. Our study aimed to evaluate the frequency and distribution of birth lacerations and their association with maternal discomfort.

Methods Between 2/2015 and 12/2016, we conducted a prospective observational study on 140 women with singleton pregnancies in vertex presentation at term, who gave birth vaginally in our center and were affected by a laceration. The lacerations were assigned objectively by medical staff and subjectively by the patient to eight genital tract compartments (right and left inner and outer genital tract, each with an anterior and posterior compartment). Then, we analyzed the described impairments of women and their changes over time. Their impairments, such as complaints during urination and defecation, genital complaints, limitations in daily activities, and psychological impairment, were evaluated with questionnaires for all women at three evaluation points (before delivery = T1, 1–4 days postpartum = T2, 6–8 weeks postpartum = T3).

Results The number of affected compartments was 1.33 objectively and 2.99 at T2 and 1.27 at T3 subjectively. The most affected compartment was the right perineum (73 %), followed by the right inner posterior (21 %) and the right outer anterior (14 %) compartment. Subjective and objective assessment concurred in 83 % at T2 and 69 % at T3. Overall, impairment of women was low, reversible, and not clearly associated with the location of lacerations. The most described complaints were pain (up to 83 %), burning sensations/pain in the genital area during urination (54 %), and urine incontinence (34–49 %). Many women were concerned about their laceration (63 % at T2 and 30 % at T3).

Discussion Most of the studies in the literature mention solely perineal tears and fail to report other birth lacerations. If reported, the most common birth lacerations in the literature are described as first- and second-degree perineal tears, vaginal tears, and labial tears. This concurs with our study, because we found C1, C5, and C7 to be the most frequently affected compartments. Interestingly, the right side of the genital tract was affected more frequently than the left side. An explanation for this phenomenon is currently not available, but might be due to the position of the baby in the birth canal or the position of the attending midwife. Almost all of our midwives are right-handed and stand on the right side of the laboring woman at birth. Thus, they probably pull or guide the fetal head and body more toward their body and therefore might affect the woman’s tissue on that side. Additionally, the rate of episiotomy differed widely in the various published studies, with rates between 2 % and 50 % if rates are mentioned at all. However, the distribution of lacerations might depend on the frequency of episiotomy.

Little is known about complaints other than perineal pain, dyspareunia, and incontinence and are not described in more detail in the literature with respect to the situations in which they occurred, such as while sitting or walking or during defecation. In contrast, our study describes pain and complaints in a more detailed way and includes the situations in which they occur. Additionally, we found urinary incontinence after birth in 33.6 % and fecal incontinence in 2 % of cases. In our study, urinary incontinence was interestingly not associated with lacerations in the inner and outer anterior compartments but more frequently in women with birth trauma in the posterior compartments. Fecal incontinence could not be associated with lacerations in any of the compartments in our study.

However, there was no clear association between the location of laceration and the women’s complaints overall. Additionally, we showed that up to 64 % of women were concerned about their birth trauma directly after birth and up to 30 % after 6–8 weeks. Therefore, birth trauma seems to be a serious issue for affected women.

Conclusion Birth lacerations predominantly appear at the right perineum, followed by the right inner posterior and outer anterior compartment. Physical impairment by these lacerations is generally low, reversible, and not directly associated with the site of lacerations, although psychological impairment is not negligible.