

# Guidelines for the Management of Third and Fourth Degree Perineal Tears After Vaginal Birth

## Leitlinie zum Management von Dammrissen III. und IV. Grades nach vaginaler Geburt

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### Key words

- delivery
- birth trauma
- perineal tears
- faecal incontinence

### Schlüsselwörter

- Geburt
- Geburtstrauma
- Dammriss
- Stuhlinkontinenz

### Abstract



**Introduction:** The purpose of these guidelines is to provide help in decision-making concerning the diagnosis, treatment and follow-up of patients with higher grade perineal tears (perineal tears grades 3 and 4) and thus minimise the risk for persisting complaints.

**Methods:** In 2007 the Austrian Urogynecology Working Group (Arbeitsgemeinschaft für Urogynäkologie und rekonstruktive Beckenbodenchirurgie Österreich [AUB]) published the “Guidelines for Management of 3rd and 4th Grade Perineal Tears after Vaginal Delivery” („Leitlinie zum Management von Dammrissen III. und IV. Grades nach vaginaler Geburt“). In 2011 the guidelines were updated including literature appearing up to publication date November 30, 2011. The realisation of consensus was supported by the DELPHI method.

**Results:** Evidence-based recommendations founded on consensus were presented on the topics epidemiology, risk factors, classification, diagnosis, surgical management and follow-up of higher grade perineal tears (grade 3 and 4 perineal tears) after vaginal delivery.

### Zusammenfassung



**Einleitung:** Ziel dieser Leitlinie ist es, eine Entscheidungshilfe für Diagnose, Behandlung und Nachsorge von Patientinnen mit höhergradigen Dammrissen (Dammriss III. und IV. Grades) zu geben und so das Risiko für dauerhafte Beschwerden zu minimieren.

**Methodik:** Im Jahr 2007 wurde von der Arbeitsgemeinschaft für Urogynäkologie und rekonstruktive Beckenbodenchirurgie Österreich (AUB) die „Leitlinie zum Management von Dammrissen III. und IV. Grades nach vaginaler Geburt“ erstellt. 2011 wurde die Leitlinie aktualisiert, wobei Literatur mit Erscheinungsdatum bis 30. November 2011 eingeschlossen wurde. Die Konsensusfindung wurde durch die DELPHI-Methode unterstützt.

**Ergebnisse:** Evidenzgestützte, auf Konsens basierende Empfehlungen wurden erstellt zu Epidemiologie, Risikofaktoren, Einteilung, Diagnose, chirurgische Versorgung sowie die Nachsorge zum Thema höhergradiger Dammriss (Dammriss III. und IV. Grades) bei vaginaler Geburt.

received 18.11.2013  
accepted 22.11.2013

### Bibliography

**DOI** <http://dx.doi.org/10.1055/s-0032-1328338>  
Geburtsh Frauenheilk 2013; 73: 407–411 © Georg Thieme Verlag KG Stuttgart · New York · ISSN 0016-5751

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### Purpose of the Guideline



Major perineal lacerations at vaginal birth (lacerations involving the external and internal anal sphincter; 3rd and 4th degree perineal tears) are the most common cause of anal incontinence later in life. The purpose of this guideline is to provide a decision aid for diagnosis, treatment and follow-up of patients with major perineal tears and thus minimize the risk for persistent symptoms.

### Method



In 2007 the “Guideline for the management of third and fourth degree perineal tears after vaginal birth” was established by members of the Austrian Urogynecologic Working Group (AUB). The guideline was updated in 2011, including literature up to 30th November 2011. The working group consisted of urogynecologists, a coloproctologist and a representative of the Austrian Midwives Board. For finding consensus the DELPHI method was used. Figures were added according to literature descriptions. The updated guideline in German language was adopted by the Austrian

Urogynecologic Working Group (AUB) and by the Austrian Society of Gynecology and Obstetrics (OEGGG) early in 2012. The following text is the English version of the guideline.

## Epidemiology

### Incidence

The incidence of 3rd and 4th degree perineal tears in the Austrian Birth Registry is 1.5% and 0.1%, respectively [1]. In contrast, a systematic review in 2008 reported an 11% incidence of lesions of the internal and external anal sphincter [2]. Symptoms associated with these injuries are anal incontinence of flatus and liquid or solid stool as well as urge symptoms. The frequency of these symptoms increases with time after the birth injury [3–5].

### Risk factors and prophylactic measures

Below risk factors for 3rd and 4th degree perineal lacerations are listed [6–11]:

- ▶ Birth weight > 4000 g (OR: 5.0; increasing with birth weight) [6,8–11]
- ▶ Forceps delivery (OR: 2.6–3.7) [6,8,9,11]
- ▶ Median episiotomy (OR: 2.4–2.9) [6,8,9]
- ▶ First delivery (OR: 2.4) [6,8–11]
- ▶ Shoulder dystocia (OR: 2.0) [6]
- ▶ Delivery in the lithotomy position or deep squatting position (OR: 2.0) [7]
- ▶ Fundal pressure (OR: 1.8) [6]
- ▶ Vacuum extraction (OR: 1.7–2.6) [6,8–10]
- ▶ Occipitoposterior position (OR: 1.7) [6,10,11]
- ▶ Second stage of labor > 60 min (OR: 1.6) [6,8,9]

### Prophylactic measures

The following obstetric measures neither increase nor decrease the risk of severe perineal tears [6,9,12–16]:

- ▶ Antenatal or subpartal perineal massage [12,13]
- ▶ Water birth [14]
- ▶ Augmentation of labor [9]
- ▶ Induction of labor [6,9]
- ▶ Timing and type of pushing [14]
- ▶ Ritgen maneuver [14]
- ▶ “Hands on” the perineum [14]
- ▶ EPI-NO® [15,16]

A recent publication suggests a prophylactic benefit for epidural anesthesia (OR 0.7) [9].

The evidence for episiotomy as a prophylactic procedure for severe perineal tears is divergent [6,17,18]. Midline episiotomy is consistently associated with an increased risk of higher degree perineal lacerations.

Mediolateral episiotomy should be used restrictively (Evidence level Ia, recommendation grade A) [19,20].

## Classification

A major perineal tear is defined as perineal injury of the anal sphincter muscles (Obstetric anal sphincter injuries, OASIS) [21].

- ▶ 3rd degree perineal tear: anal sphincter injured, anorectal epithelium intact
- ▶ 4th degree perineal tear: sphincter injured, anorectal epithelium torn

The following subclassification of 3rd degree perineal tears may be helpful [22]:

- ▶ 3a... less than 50% of the thickness of the external anal sphincter muscle is torn
- ▶ 3b... more than 50% of the thickness of the external anal sphincter muscle torn
- ▶ 3c... both the external and the internal anal sphincter muscles are torn

Because the internal anal sphincter plays an important role in the continence mechanism, its identification and repair is desirable. (Evidence level IIa, recommendation grade B) [23,24]

## Diagnosis

After vaginal birth the obstetrician and/or midwife should examine the perineum to identify or rule out a severe perineal tear. If a 3rd or 4th degree tear cannot be ruled out, an obstetrician must be consulted to clarify the situation and, where appropriate, carry out a preliminary classification as to the degree of the injury and initiate further management (Grade C recommendation).

## Surgery

### Preparations

Surgical repair of a higher degree perineal tear requires general or regional anesthesia for maximum sphincter relaxation and adequate pain control. The procedure has to be carried out under aseptic conditions in the operating room or equivalent with the parturient in the lithotomy position with surgical assistance and instrumentation. The surgical team should include a specialist with sufficient experience (Evidence level IV, recommendation grade C) [25].

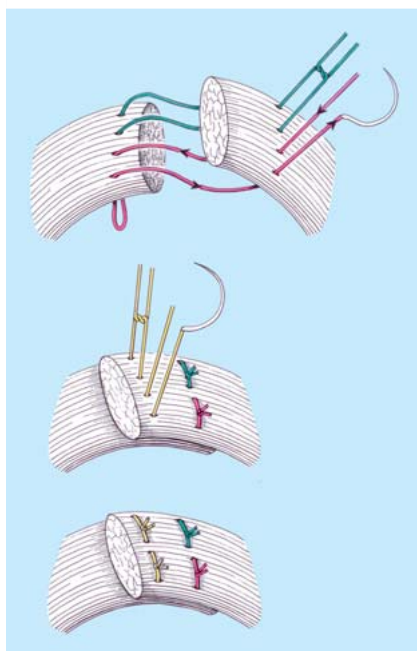
As a rule surgical repair should be done expeditiously. Rarely, surgery can be postponed up to a maximum of 12 hours postpartum (Evidence level Ib, recommendation grade B) [26].

An adequate written patient's informed consent should be obtained unless an emergency situation exists.

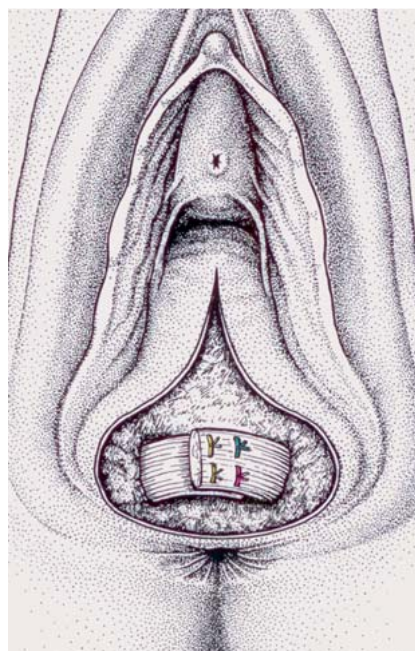
Prophylactic preoperative antibiotics (e.g., 2nd generation cephalosporins) should be administered. (Evidence level II, recommendation grade B) [27].

### Surgical strategy (◉ Figs. 1–4)

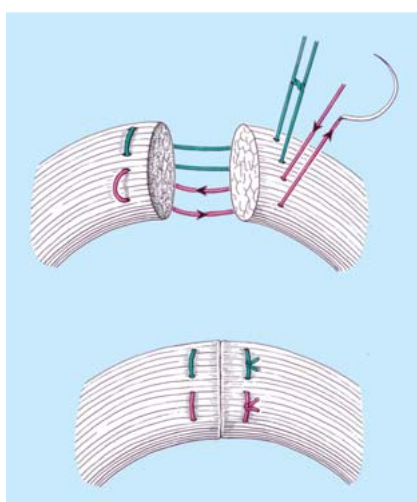
1. Adequate surgical setting and anesthesia.
2. Examination under anesthesia. Evaluation for additional birth injuries and exact classification of the injury with specula assessment and digital rectal examination.
3. Repair cervical and high vaginal tears before addressing the perineum, work from the top down.
4. 4th degree perineal tear: repair anorectal epithelium with 3–0 delayed absorbable sutures [28,29].
5. If the edges of the torn *internal* anal sphincter can be identified approximate the edges with atraumatic interrupted mattress sutures, preferably 3–0.
6. Identify the edges of the external anal sphincter and grasp with Allis clamps.



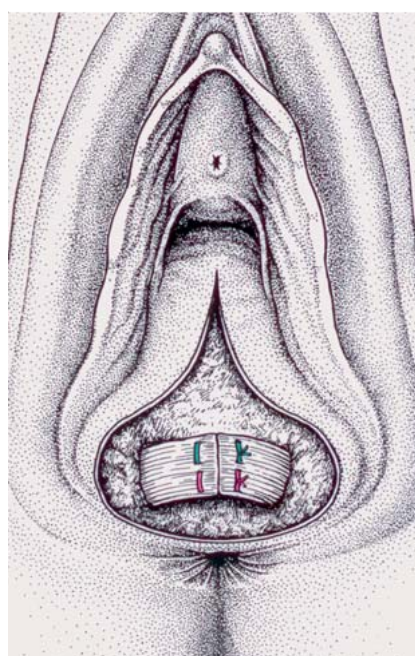
**Fig. 1** Overlapping method, technique.



**Fig. 2** Overlapping method, after repair.



**Fig. 3** End-to-end method, technique.



**Fig. 4** End-to-end method, after repair.

7. Approximate the *external* anal sphincter in an end-to-end mattress or overlapping fashion with atraumatic mattress sutures – preferably with 2-0 sutures. An overlap repair can only be performed if the full thickness and length of the external sphincter is torn. In case of a completely torn external sphincter muscle the choice of method (end-to-end or overlapping) is left to the discretion of the surgeon. (Evidence level Ib, recommendation grade A) [31–33].
8. Repair the perineum in layers and ensure that all delayed absorbable sutures are adequately buried by the overlying perineal muscles. Otherwise the suture ends can migrate and cause discomfort to the woman.

9. After the repair a rectal examination must be performed to check that there are no additional injuries that may have been missed and that sutures have not been inadvertently inserted into the anorectal mucosa. If a suture is found it is safer to remove it so as to minimize the risk of a anorectal-vaginal fistula.
10. Detailed documentation of the perineal injury, including a surgical report.

Delayed absorbable suture material should be used. The choice between braided and monofilament material is left to the surgeons preference (Evidence level III, recommendation grade B) [35].

## Puerperium



### Antibiotics

Experts recommend postoperative antibiotics but this is not based on clinical studies. (Evidence level IV, recommendation grade C) [22].

### Stool Softeners, Laxatives

Oral administration of lactulose reduces the pain at first bowel movement. Postoperative pain, wound infection rate, continence, and dyspareunia are not affected by the use of laxatives. (Evidence level 1b, grade A recommendation). In addition lactulose is recommended to minimize the mechanical stress on the repair (evidence level IV, recommendation grade C) [34].

Digital rectal examination in the puerperium should be avoided if healing appears uneventful (Evidence level IV, recommendation grade C) [30].

### Follow-up



A follow-up visit should be scheduled 3 months after the repair. The frequency of incontinence of flatus is 50%, urge symptoms 26%, incontinence of liquid stool 8% and incontinence of solid stool 4% at early follow-up of women after severe perineal trauma (Evidence level 1b, grade A recommendation) [31, 33, 35–38]. The early follow-up exam should include the following:

- ▶ History of symptoms of anal incontinence.
- ▶ Inspection of the perineum.
- ▶ Vaginal and rectal examination and palpation.
- ▶ Recommendation for physiotherapy (pelvic floor muscle training). There is no evidence when physiotherapy should be initiated.
- ▶ The possibility of a long latency onset or worsening of symptoms of anal incontinence over time should be discussed (Evidence level 1b, grade A recommendation) [39, 40].
- ▶ Discussion regarding future births and mode of delivery.

### Recommendations for Subsequent Deliveries



The available data do not permit a clear recommendation for the mode of delivery in subsequent pregnancies. For vaginal birth after a previous 3rd or 4th degree perineal tear the risk of a new injury to the anal sphincter is increased by a factor of two to seven; the risk also rises with increasing birth weight [41–44]. Vaginal birth after 3rd or 4th degree perineal tear increases the short-term risk of persistent fecal incontinence [6, 39, 45, 46], but this increased risk is not seen in studies with a follow-up of 5 years or more [6, 47, 48].

Elective cesarean section should be offered to all women in pregnancies following a 3rd or 4th degree perineal tear, in particular patients with

- ▶ persistent fecal incontinence,
- ▶ reduced sphincter function or
- ▶ suspected fetal macrosomia (Grade C recommendation) [22, 49].

Episiotomy should be used restrictively in patients with vaginal delivery in a pregnancy after 3rd or 4th degree perineal tear [49].

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