

Perineal prevention and protection in obstetrics: CNGOF Clinical Practice Guidelines

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▶ **To cite this version:**

Guillaume Ducarme, Anne-Cécile Pizzoferrato, Renaud de Tayrac, Clémence Schantz, Thibault Thubert, et al.. Perineal prevention and protection in obstetrics: CNGOF Clinical Practice Guidelines. Journal of Gynecology Obstetrics and Human Reproduction, 2019, 48 (7), pp.455-460. 10.1016/j.jogoh.2018.12.002 . inserm-01965967

HAL Id: inserm-01965967

https://inserm.hal.science/inserm-01965967

Submitted on 27 Dec 2018

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Perineal prevention and protection in obstetrics: CNGOF Clinical Practice Guidelines

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Summary

Introduction: The objective of these clinical practice guidelines was to analyse all of the interventions during pregnancy and childbirth that might prevent obstetric anal sphincter injuries (OASIS) and postnatal pelvic floor symptoms.

Material and methods: These guidelines were developed in accordance with the methods prescribed by the French Health Authority (HAS).

Results: A prenatal clinical examination of the perineum is recommended for women with a history of Crohn's disease, OASIS, genital mutilation, or perianal lesions (professional consensus). Just after delivery, a perineal examination is recommended to check for OASIS (Grade B); if there is doubt about the diagnosis, a second opinion should be requested (Grade C). In case of OASIS, the injuries (including their severity) and the technique for their repair should be described in detail (Grade C). Perineal massage during pregnancy must be encouraged among women who want it (Grade B). No intervention conducted before the start of the active phase of the second stage of labour has been shown to be effective in reducing the risk of perineal injury. The crowning of the baby's head should be manually controlled and the posterior perineum manually supported to reduce the risk of OASIS (Grade C). The performance of an episiotomy during normal deliveries is not recommended to reduce the risk of OASIS (Grade A). In instrumental deliveries, episiotomy may be indicated to avoid OASIS (Grade C). When an episiotomy is performed, a mediolateral incision is recommended (Grade B). The indication for episiotomy should be explained to the woman, and she should consent before its performance. Advising women to have a caesarean delivery for primary prevention of postnatal urinary or anal incontinence is not recommended (Grade B). During pregnancy and again in the labour room, obstetrics professionals should focus on the woman's expectations and inform her about the modes of delivery.

Introduction

The prevention of perineal lesions during delivery, in particular at the crowning of the fetal head, is a priority for all obstetricians in the labour room. Diverse measures before and during delivery (perineal massage, episiotomy, etc.) have been suggested to prevent this risk but their effectiveness remains controversial. After delivery, women may report symptoms, such as urinary or anal incontinence and perineal pain.

Our objective here is to analyse the results of potential interventions during pregnancy and delivery that might prevent obstetric anal sphincter injuries (OASIS) and its postnatal pelvic floor symptoms (incontinence and pain) and to draw clinical practice guidelines from them.

The methods and rationale are detailed in the texts that accompany this synthesis [1-9]. This recommendation was developed according to the method set forth by the French Health Agency (HAS) [1,10]. Guillaume Ducarme (obs/gyn), Bernard Jacquetin (obs/gyn), Anne-Cécile Pizzoferrato (obs/gyn), and Xavier Fritel (obs/gyn, methodologist) coordinated the working group and the project. This organising committee, designated by the CNGOF (French national college of obstetricians and gynaecologists), defined the scope of these guidelines and the list of topics to cover. The scientific rationale is based on the critical analysis and synthesis of the literature performed by the authors [2-9] and on the opinions of the working group (see authors' list). Depending on the level of evidence of the studies on which they are based, their expected benefits for women, and their feasibility in clinical practice, these recommendations have been graded from A (recommendation based on a strong level of evidence) to C (recommendation based on a low level of evidence) [1, 10]. We did not rate the guidelines based on ethical or regulatory considerations. The members of the working group met on several occasions to develop an initial version of these guidelines from the scientific rationale and the draft recommendations written by the authors. This version was subsequently submitted (in French and English) and rated by an external reading group (list of reviewers in the appendix). The members of the working group and the CNGOF scientific council validated the final version. The CNGOF funded and distributed this work.

1. Obstetric anal sphincter injuries (OASIS): definition, epidemiology, and risk factors

1.1. Definition and classification of perineal tears and lacerations

The classification of the Royal College of Obstetricians and Gynaecologists (RCOG) is the one most widely used in the international literature to describe obstetric tears and lacerations of the perineum (Table 1).

To classify these obstetric injuries, we have used the WHO-RCOG classification, which lists 4 degrees of severity. To designate obstetric anal sphincter injuries, we have used the acronym OASIS, rather than the standard French terms of "complete perineum" and "complicated complete perineum".

Table 1. Classification of obstetric perineal tears and lacerations

	French classification	RCOG-WHO classification	Injuries
	Intact perineum		None
	Superficial perineum	1st degree	Vaginal or vulvar epithelium
	Simple perineum	2nd degree	Perineal muscles (perineal body)
OASIS	Complete perineum	Degree 3a	Less than 50% of the external anal sphincter (EAS)
		Degree 3b	More than 50% of the EAS
		Degree 3c	EAS and internal anal sphincter (IAS)
	Complicated complete perineum	4th degree	Anal sphincter complex and anorectal mucosa

1.2. Situations at risk of OASIS

The principal factors associated with OASIS are nulliparity and instrumental (vaginal operative) delivery; the others are advanced maternal age, history of OASIS, macrosomia, midline episiotomy, posterior cephalic positions, and prolonged labour (LE2) [3].

The presence of a perianal lesion (perianal fissure, or anorectal or rectovaginal fistula) is associated with an increased risk of 4th degree lacerations (LE3). Crohn's disease without perianal involvement is not associated with an excess risk of OASIS (LE3).

For women with type III genital mutilation, deinfibulation before delivery is associated with a reduction in the risk of OASIS (LE3); **in this situation, deinfibulation is recommended before delivery (grade C).**

In women with a history of Crohn's disease, OASIS, genital mutilation, or perianal lesions, a prenatal clinical examination of the perineum is recommended (professional consensus).

2. Are there maternal factors that predispose women to the risk of perineal lesions?

Human evolution into exclusive bipedalism led to structural modifications of the pelvic skeleton, especially its enlargement in women to enable the passage of the descending fetus at delivery. A narrow pelvis predisposes women to obstetric difficulties. A subpubic angle less than 90° (measured clinically) does not appear to increase the risk of OASIS (LE3); it appears to be a risk factor for postnatal anal incontinence in the short but not the long term (LE3) [2].

During the last phase of the second stage of labour, the perineum is stretched to such an extent

(almost 65%) that injuries to the pelvic floor muscles can occur in some women. Second- and third-degree perineal lacerations cannot be predicted by prenatal measurement of either the perineal body length (LE3) or the genital hiatus (LE2) [2].

Measurement of pelvic dimensions and the subpubic angle is not recommended to predict OASIS or to choose the mode of delivery for the purpose of protecting the perineum (Grade C). Similarly, the routine prenatal measurement of the length of the perineal body or the genital hiatus is not recommended for any objective related to perineal protection (Grade C).

3. Models for predicting OASIS

The past few years have seen the development of several models for predicting the risk of perineal lesions; their aim has been to guide the physician and the woman in choosing the mode of delivery most appropriate to the characteristics of mothers and fetuses. In the current state of knowledge, models for predicting the risk of OASIS cannot reliably assess the risk of OASIS [3].

Models to predict the risk of OASIS cannot be used to advise or authorise one mode of delivery rather than another (professional consensus).

4. Diagnosis of OASIS

OASIS with only isolated involvement of the EAS (3a and 3b) appears to have a better functional prognosis than OASIS affecting the IAS or the anorectal mucosa (3c and 4) (LE3).

The priority in this context remains the training of childbirth professionals (midwives and obstetricians) to detect these injuries in the delivery room, immediately after the birth. The training and awareness of these practitioners of OASIS diagnosis improves its detection in the delivery room (LE2). Professional experience is associated with better detection of OASIS (LE3) [3].

A perineal examination just after delivery is recommended to check for OASIS (Grade B). If there is doubt about the diagnosis, a second opinion should be requested (Grade C). Should OASIS be detected, the injuries (including their severity) and the technique their repair should be described in detail (Grade C).

Continuing professional education of obstetrics professionals in the diagnosis and repair of OASIS must be encouraged (Grade C).

5. Methods of preventing perineal injury and dysfunction during pregnancy

Several interventions during pregnancy have been described that might prevent the risk of postnatal perineal injury or dysfunction; these include prenatal perineal massage, use of the Epi-No device, and pelvic floor muscle training exercises.

Perineal massage during pregnancy diminishes the episiotomy rate (LE1) as well as postpartum perineal pain and flatus (LE2) [4]. It does not reduce the rate of either OASIS (LE1) or postpartum urinary incontinence (LE2). The Epi-No device does not provide benefits for perineal protection (LE1) [4]. Prenatal pelvic floor muscle training exercises do not reduce the risk of perineal lacerations (LE2); they reduce the prevalence of postpartum urinary incontinence at 3 to 6 months but not at 12 months postpartum (LE2) [3].

Perineal massage during pregnancy must be encouraged among women who want it (Grade B). The use of the Epi-No device during pregnancy is not recommended for the prevention of OASIS (grade B). Pelvic floor muscle training during pregnancy is not recommended for the prevention of OASIS (grade B); moreover, its absence of effect in the medium term does not allow us to recommend it for urinary incontinence (professional consensus).

6. Methods of preventing perineal injury and dysfunction during pregnancy

Diverse interventions during labour that might prevent the risk of perineal lesions have been studied; they include maternal mobilisation, maternal postures, and pushing techniques. Their utility is still debated today [5].

Urinary catheterisation is recommended for women with epidural analgesia during labour when spontaneous voiding is not possible (professional consensus). Although current data does not justify a preference for continuous or intermittent urinary catheterisation (LE2), intermittent catheterisation nonetheless appears preferable in this situation (professional consensus).

6.1. Mobilisation and posture during the first stage of labour

Maternal mobilisation and postures during the first stage of labour have not been shown to reduce the risk of OASIS (LE3) [5].

There is no reason to recommend one maternal posture rather than another during the first stage of labour for the purpose of reducing the risk of OASIS (grade C). Women should be allowed to choose the position most comfortable for them during the first stage of labour (professional consensus).

6.2. Second stage of labour

6.2.1. Maternal posture for the second stage of labour

No particular posture has demonstrated its superiority over any other during the second stage of labour for preventing obstetric perineal lesions including OASIS and postnatal incontinence (urinary or faecal) (LE2) [5].

There is no reason to recommend one posture rather than another during the second stage of labour to reduce the risk of either OASIS (Grade B) or urinary or faecal incontinence at 1 year postpartum (grade B). Women should be allowed to choose the position most comfortable for them during this stage (professional consensus).

6.2.2. Rotation of posterior positions

Posterior cephalic positions present the greatest risks of perineal injury (LE2) [3, 5]. Manual rotation of cephalic posterior positions to the anterior during the second stage of labour may make it possible to reduce the risk of instrumental delivery, although no reduction in the risk of perineal injuries or OASIS has been clearly demonstrated (LE3) [5].

For fetuses in posterior cephalic positions, no data justify a preference for manual rotation at full dilation to diminish the risk of perineal injury (professional consensus).

6.2.3. Pushing efforts

Expulsive efforts correspond to intentional maternal pushing by techniques that vary from country to country and maternity unit to maternity unit. These include delayed pushing, intended to await either the spontaneous descent of the fetal head and its appearance at the vulva or an urge to push, or immediate pushing from the diagnosis of full dilation, that is, from the beginning of the second stage of labour. During this phase, delayed pushing does not modify the risk of OASIS (LE1); it does, however, increase the chances of spontaneous delivery (LE1) [5].

It is thus recommended that, when maternal and fetal status allow, the start of pushing should be delayed (Grade A). There is no evidence to support preferring one pushing technique rather than another to diminish the risk of OASIS (grade B). Women should be encouraged to push in the way each finds most effective (professional consensus).

The data in the literature do not justify the recommendation of a specific maximum duration of the second stage of labour for limiting the risk of OASIS (LE3). Performing an instrumental delivery for the sole purpose of reducing the duration of the second stage of labour may increase the risk of OASIS (LE3) [5].

6.2.4. Perineal massage or warm compresses during the second stage of labour

Perineal massage or the application of warm compresses during the second stage of labour appear to reduce the risk of OASIS (LE2) [5]; **we have not reached a conclusion about their use in clinical practice.**

7. Methods of preventing perineal injury and dysfunction when the baby reaches the outlet

The moment of the start of fetal expulsion, at the end of the second stage of labour, is the period of delivery at highest risk for the maternal perineum, with stretching at a maximum at the moment of the passage of the fetal head. Biomechanical models show that perineal stress is at its maximum at the moment of expulsion and that the musculotendinous stretching of the perineum may be increased by a factor of 3 [6]. The degree of perineal stretching during the second stage of labour does not appear to be a risk factor for OASIS, postpartum incontinence, or sexual disorders (LE3).

Substantial stretching of the perineum is not an indication for episiotomy (professional consensus).

7.1. Manual control of expulsion

Manual control of the expulsion of the fetus at the end of the second stage of labour and support of the posterior perineum during this time appear to reduce the rate of OASIS (LE3) [6].

The crowning of the baby's head should be manually controlled and the posterior perineum manually supported manually to reduce the risk of OASIS (Grade C).

7.2. Episiotomy

There is no recognised benefit to episiotomy in normal deliveries (LE1); when episiotomy is practised routinely, the rate of women with an intact perineum is lower than when this practice is restrictive, while a restrictive practice does not result in increasing the number of cases of OASIS [6]. No evidence indicates that an episiotomy for women with a breech presentation, twin pregnancy, or posterior position prevents OASIS (LE3).

Indication for episiotomy during delivery depends on individual risk factors and obstetric conditions (professional consensus). It is recommended that the indication for episiotomy be explained and the woman's consent received before its performance. The performance of an episiotomy during normal deliveries is not recommended to reduce the risk of OASIS (Grade A). The liberal practice of episiotomy to prevent OASIS is not recommended for women with a breech presentation, twin pregnancy, or posterior position (Grade C).

7.3. For instrumental deliveries

Episiotomy during an instrumental delivery appears to be associated with a reduction of the risk of OASIS (LE3). The vacuum extractor appears to induce fewer cases of OASIS than other instruments (LE3) [6].

Episiotomy may be indicated in instrumental deliveries to avoid OASIS (Grade C). In operative vaginal deliveries when several instruments can be used, a vacuum extractor is preferentially recommended to reduce the risk of OASIS (Grade C). When forceps or spatulas are used, it is preferable that they be withdrawn just before cephalic deflexion so that the fetal head is not "capped" with these instruments at birth (professional consensus).

7.4. Continuing medical education

Training obstetrics professionals in perineal protection reduces the risk of OASIS during instrumental deliveries (LE2).

Training in perineal protection in obstetrics is recommended (Grade B).

8. Techniques for episiotomy

Several episiotomy techniques are currently described in the literature (Figure 1); those used most frequently are mediolateral, lateral, and midline episiotomies [7]. A midline episiotomy increases the risk of OASIS compared with a mediolateral procedure (LE2). OASIS rates are similar for mediolateral and lateral episiotomies (LE1). The rate of perineal pain in the immediate postpartum and at 3 months postpartum as well as the rate of dyspareunia at 6 months

postpartum are also similar for mediolateral and lateral episiotomies (LE2) [7].

A mediolateral incision is recommended for an episiotomy (Grade B).

A scar angle of at least 45° (measured in relation to the midline after suturing) is associated with a lower risk of OASIS (LE3). To obtain this final angle, the episiotomy must be performed at a 60° angle (LE1) [7].

The angle of incision recommended for a mediolateral episiotomy is 60° (Grade C).

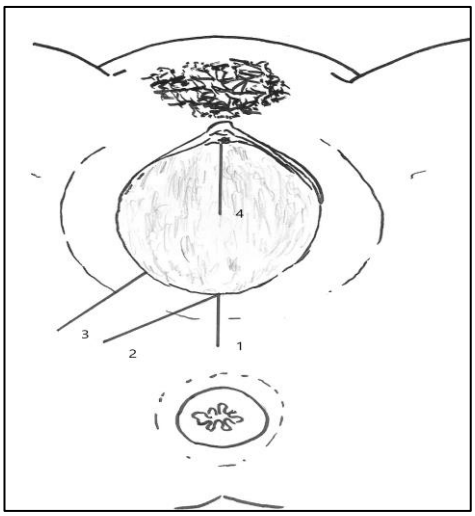


Figure 1. Diagram of different types of episiotomy. 1: midline episiotomy, 2: mediolateral episiotomy, 3: lateral episiotomy, 4: anterior episiotomy

9. Techniques for the repair of first- and second-degree perineal tears

Suturing the superficial plane of a perineal tear provides no benefits when there is no bleeding and a close wound approximation (LE2). Synthetic suture materials with either standard or rapid absorption provide similar results for perineal pain and women's satisfaction: rapid absorption polyglactin has the advantage of a reduced need for later stitch removal, but it increases the risk of scar dehiscence (LE1) [7].

A superficial (first-degree) tear with no bleeding and with a close wound approximation need not be sutured (Grade B). Both the episiotomy and second-degree tears can be repaired by sutures with either standard or rapid absorption (Grade A).

Once the need for suturing is decided, numerous techniques have been described, usable regardless of the material used or the suturing method. The techniques for suturing perineal lacerations by continuous sutures are associated with a reduction in immediate pain, reduced use of analgesics, and less frequent removal of stitches, compared with interrupted stitches (LE1) [7].

It is recommended that continuous running sutures be preferred for the repair of episiotomies and second-degree tears (Grade A).

10. Techniques for OASIS repair

Diverse techniques are used for the repair of OASIS diagnosed in the labour room, as for the sutures for first- and second-degree tears.

It is recommended that obstetrics professionals optimise surgical conditions to the extent possible for repair of OASIS (professional consensus); a detailed report of the extent of the injuries, the techniques of repair, and the material used is recommended (Grade C).

To repair a complete external sphincter tear (3b or more), overlap and end-to-end suture techniques yield similar results for anal continence (LE2). Use of polydioxanone 3/0 or polyglactin 2/0 to repair the EAS produces similar results for perineal pain and anal incontinence scores (LE2) [7].

The external anal sphincter can be repaired with either overlap or end-to-end suture techniques (Grade B).

Delaying repair of OASIS for several hours does not worsen the subsequent prognosis for anal continence (LE2) [7].

Should difficulties arise, repair of OASIS can be delayed for several hours to enable it to be performed in the best possible conditions (Grade C).

11. Does caesarean delivery prevent perineal injuries and dysfunctions?

For a long time, vaginal delivery has been considered the principal cause of functional disorders of women's pelvic floor, whether these involve urinary or anal incontinence, pelvic organ prolapse, or sexual disorders. Caesarean delivery might thus appear to be an effective means of avoiding them. Nonetheless the association between mode of delivery and perineal dysfunction has not been clearly established, and the preventive effect of caesarean delivery is currently controversial. The validity of these reports remains questionable, for they have been retrospective and cohort studies, rather than randomised trials that compare both types of delivery. The studies are therefore likely to comport biases, that is, to involve the selection of a particular profile of women in the caesarean group, who might have individual characteristics that mean that they are at less risk of perineal injuries and dysfunctions.

11.1. For primary prevention

The risk of urinary incontinence appears higher after vaginal than caesarean delivery at 3 months postpartum (LE3), but this excess risk disappears with ageing (LE2) [8]. The association between the risk of anal incontinence (flatus and/or faeces) and vaginal delivery has not been demonstrated (LE3) [8].

Advising women to have a caesarean delivery for primary prevention of postnatal urinary or anal incontinence is not recommended (Grade B).

The data concerning pelvic organ prolapse are sparse and difficult to analyse, varying according to the classification or definitions used. In the long term, pelvic organ prolapse appears to be more frequent among women with vaginal than caesarean deliveries (LE3).

In the absence of any study providing a high level of evidence, advising women to have planned caesarean delivery for the primary prevention of pelvic organ prolapse is not recommended (professional consensus).

In the early postnatal period, sexual intercourse is more often painful for women who had a vaginal than a caesarean delivery, but this difference disappears after 6 months postpartum (LE2). After 6 months postpartum, studies have found no difference in sexual function according to mode of delivery (LE3) [8].

Advising a woman to have a planned caesarean delivery to protect her sexual functioning is not recommended (Grade C).

11.2. For secondary prevention

For women with a history of OASIS, examination of the perineum is recommended during a new pregnancy; in addition, the obstetrics professional should answer the woman's questions about the risk of recurrence and of sequelae with the new delivery (professional consensus).

No excess risk of new or aggravated pre-existing anal incontinence has been reported among women with a second vaginal delivery after OASIS (LE2). The risk of a new OASIS is on the order of 5 to 8% (LE3). However, a second OASIS appears to increase the risk of definitive anal incontinence (LE4) [8].

The mode of a new delivery must be discussed with women with a history of OASIS (professional consensus). After an history of OASIS, advising women to have a systematic caesarean delivery for primary of anal incontinence is not recommended (Grade B).

The data do not indicate that pre-existing urinary incontinence is aggravated by vaginal delivery (LE3). In women with a vaginal delivery after placement of a suburethral sling, the available data do not justify a conclusion that there is an excess risk of recurrence of urinary incontinence (LE4) [8].

Advising a planned caesarean delivery for secondary prevention of urinary incontinence, regardless of any previous surgery, is not recommended (Grade C).

Data about potential perineal morbidity associated with vaginal delivery for women with a history of perianal surgery are sparse. All of the work available agrees that there are no contraindications to vaginal delivery for women with Crohn's disease with no perianal manifestations (LE2) [8]. The literature for women with perianal lesions is more discordant.

Advising a planned caesarean for women with Crohn's disease without perianal manifestations for perineal protection is not recommended (Grade B). Advising a planned caesarean delivery for women with symptomatic perianal manifestations is recommended (Grade C). In the case of healed perianal lesions (with or without surgery), the choice of a mode of delivery should be discussed with the woman (professional consensus).

12. Informing the woman

During pregnancy and again in the labour room, it is recommended to focus on the woman's expectations and to inform her about the modes of delivery [9].

Because she has seen several healthcare professionals during pregnancy, it is necessary to inquire about the information she has already received in order to adapt further information to her situation and current knowledge. This information can be delivered in several forms and by several sources (written, internet, group, individual, etc.); it should be completed by individualised oral information provided by the healthcare professionals attending her during her prenatal care and during labour.

If the woman wants to develop a birth plan, it should be constructed in a process that allows the sharing of her knowledge and expectations and of appropriate information delivered by professionals, ideally beginning with the early prenatal interview and continuing during antenatal consultations and sessions of preparation for childbirth and parenting.

Conclusions

Perineal lesions are one possible complication of vaginal delivery, and obstetrics professionals must be trained to prevent, diagnose, and repair them. No intervention during the first or second stage of labour besides perineal support has clearly demonstrated its effectiveness for reducing the risk of perineal injuries. Episiotomy provides no known benefits during normal delivery. A planned caesarean delivery cannot be advised for primary prevention as perineal protection. In the special cases of OASIS with functional sequelae or active manifestations of Crohn's disease, the mode of delivery must be chosen on an individualised basis. In all cases, a meticulous clinical examination of the perineum must be performed after vaginal delivery to check for OASIS.

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Appendix: list of reviewers

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