International Urogynecology Journal (2019) 30:925–931
https://doi.org/10.1007/s00192-018-3712-5

ORIGINAL ARTICLE

Counseling after perineal laceration: does it improve functional outcome?

Ashley Vasseur[1] · Karine Lepigeon[1] · David Baud[1] · Antje Horsch[1,2] · Sylvain Meyer[1] · Yvan Vial[1] · Chahin Achtari[1]

Received: 18 April 2018 / Accepted: 21 June 2018 / Published online: 6 July 2018

Abstract

Introduction and hypothesis Since 2006, the Lausanne University Hospital (CHUV) has offered a 12-week post-partum perineum consultation for patients with third-/fourth-degree tears, providing advice for future deliveries. This study consisted of a retrospective follow-up of these patients, focused on subsequent deliveries and current urinary and anorectal incontinence symptoms.

Methods Patients meeting eligibility criteria were invited to complete a questionnaire on their deliveries, along with validated questionnaires grading urinary (UDI-6 and IIQ-7) and anorectal (Wexner-Vaizey score) incontinence.

Results Sixty-two percent of third-/fourth-degree tears occurred following operative vaginal deliveries. Of 160 participants, 45.6% did not redeliver, 5.6% of whom felt traumatized by their first delivery and reluctant to have another children; 33.2% had a second vaginal delivery, 19.4% had a cesarean section (CS), and 1.2% had both vaginal and CS deliveries; 28% of the CS were not medically indicated. The recurrence rate of third-/fourth-degree tears for subsequent vaginal deliveries was 3.6%.

Most patients were mildly or not affected by incontinence symptoms. Symptomatic patients reported urinary incontinence during physical activity and gas leakages; 50–60% saw no change of symptoms since the consultation, 30–40% reported partial or complete recovery. Patients redelivering by CS reported significantly less urinary incontinence ($p = 0.046$) and less anorectal incontinence ($p = 0.069$).

Conclusion Anal sphincter laceration is associated with urinary and anorectal incontinence, but symptoms improve or disappear in most cases and are globally not invalidating. Perineal physiotherapy seems to contribute to this positive evolution. Fertility rate among these patients is unaffected, but the CS rate is higher than average. Further consideration of sexual and emotional sequelae could improve our current service.

Keywords Anal sphincter laceration · Incontinence · Risk · Recurrence

Introduction

Vaginal delivery can damage pelvic structures and lead to urinary and/or anorectal incontinence. It can also cause sexual dysfunction and sometimes psychological trauma. Third- and fourth-degree lacerations are particularly susceptible to causing these various problems [1–5]. Their clinical incidence is reported to be between 0.5 and 3.5% in Europe [6]. Such tears mostly affect patients delivering their first baby [7, 8] and constitute the leading cause of fecal incontinence for women [6, 9].

Since 2006, the Lausanne University Hospital (CHUV) has offered a 12-week post-partum perineum consultation for patients with third- and fourth-degree tears. Based on the symptoms reported, sphincter tonus and endo-anal ultrasound imaging, advice for future deliveries is given by the uro-gynecologist. CS is namely encouraged for patients with persistent symptoms and significant sphincter defects defined as a defect of 25% or more of the circumference. The consultant can also prescribe physiotherapy for pelvic floor reeducation. Usually nine sessions are prescribed including biofeedback. Other pelvic floor exercises or massage of the scar if painful may be added by the physiotherapist. Surgical correction is proposed when considered necessary. Recommendations are based on published studies such as [10] and [9].

✉ Chahin Achtari
Chahin.Achtari@chuv.ch

[1] Department Woman-Mother-Child, Lausanne University Hospital, Avenue Pierre Decker 2, 1011 Lausanne, Switzerland

[2] Institute of Higher Education in Healthcare Research (IUFRS), University of Lausanne, Lausanne, Switzerland

Over the past 10 years, the consultation was attended by 546 patients. This study consisted of contacting these patients to gather information on subsequent deliveries and current urinary/anorectal incontinence symptoms. The aim of the study was to evaluate the quality of advice given to the patients and the adhesion of patients to the given advice on the suggested mode of delivery. This in turn would help to improve the service for such patients in the future.

Patients and methods

Patients from the consultation were considered eligible for this study if they had sustained a third- or fourth-degree sphincter laceration during their first vaginal delivery of a singleton baby with cephalic presentation. Those with a significant language barrier (who spoke neither French, nor English nor Spanish), inflammatory bowel disease or urinary/anorectal surgery were excluded.

Consultation reports and index delivery case notes were analyzed to obtain the following obstetric and maternal data:

- Degree of the tear
- Presence of commonly accepted risk factors for sphincter laceration: instrumental delivery, posterior presentation or fetal birth weight > 4 kg.
- Patients' symptoms and complaints at the consultation
- Whether or not perineal physiotherapy was prescribed
- Mode of delivery recommended for future deliveries

At the request of the regional ethics commission (CER-VD), patients were first contacted by telephone to present the study, ensure eligibility criteria were met, solicit their participation and obtain their oral consent. Patients who did so received a global questionnaire on their deliveries, along with validated questionnaires grading urinary (UDI-6 and IIQ-7) [11] and anorectal (Wexner-Vaizey score) [12, 13] incontinence. These documents were available in English, French and Spanish and were sent by email or by post with a pre-stamped envelope according to expressed preferences. Patients were equally invited to share their experiences and give feedback on the consultation or study if desiring to do so. No financial reward or compensation was offered for patients' participation.

Data were collected from November 2015 to July 2016. For patients who had redelivered since the consultation, medical notes of subsequent deliveries were analyzed. Descriptive and comparative statistical data analyses were achieved using STATA (14th version). All tests were two-sided, and a p value < 0.05 was considered statistically significant.

This project was validated by the regional research ethics commission (ethics approval no. 275/15).

Results

Participation

Of 546 patients who attended the consultation between 2006 and 2015, 369 (67%) met the inclusion criteria and were contacted by telephone; 160/369 (43%) volunteered to complete the questionnaires. Global information and obstetric data relating to the index delivery of these patients are shown in Table 1. Notably, 62% of these third-/fourth-degree tears occurred following operative vaginal deliveries. The average time for the sample group between the consultation and this study was 5.25 ± 2.56 years. Among those who did not participate, 25 declined during the telephone call and 54 did not send back the questionnaires. The rest were lost to follow-up.

Among the 160 participants, 5 were pregnant when completing the questionnaires and delivered while the study was still in progress. Pregnancy being a potential confounding factor for this study, these five patients were not included in data analyses related to urinary/anorectal incontinence.

Patients' symptoms and complaints at the consultation

At 12 weeks post-partum on average, 26% (41/160) reported urinary incontinence and 38% (61/160) reported anorectal incontinence. Among these, 11% (18/160) suffered both simultaneously; 35% (56/160) complained of pelvic pain. Consultation notes also highlight the impact of index delivery

Table 1 Global information and obstetric data relating to index delivery ($n = 160$)

Current age (year average ± SD)	36 ± 5
Age at index delivery (year average ± SD)	31.5 ± 4.5
Current BMI (average ± SD)	23.5 ± 4.2
3rd degree tear (%)	145 (91%)
IIIa (%)	*33 (21%)*
IIIb (%)	*23 (14%)*
IIIc (%)	*21 (13%)*
Unspecified (%)	*15 (43%)*
4th degree tear (%)	15 (9%)
Patients with CS before the index delivery (%)	15 (9%)
Risk factors present at index delivery	
Forceps (%)	83 (52%)
Vacuum (%)	16 (10%)
Birth weight > 4 kg (%)	74 (46%)
*Posterior presentation (%)**	36 (23%)
Mediolateral episiotomy (%)	112 (70%)
Weeks post-partum at consultation (average ± SD)**	12 ± 7

*Outlier patient coming 10 years post-partum removed

**Information lacking for 11% (18/160) patients

on sexuality: while 15% (24/160) had resumed and were satisfied with their sexual activity, 48% (77/160) had not resumed, 16% (12/77) of which expressed fear of dyspareunia. Twenty-four percent (38/160) reported painful intercourse and 7% (10/160) complained of reduced quality of intercourse.

Consultation recommendations

Eighty-six percent (138/160) of patients were prescribed perineal physiotherapy with biofeedback, 84% (116/138) of whom attended the sessions. The remaining 14% (22/160) did not complete any physiotherapy, but information regarding its prescription was lacking in the consultation report.

Concerning recommendations for future deliveries, 62% (99/160) of patients had no contraindications to a second vaginal birth, and 14% (22/160) were advised to deliver by CS because of persistent symptoms (2/22), a persistent anal sphincter defect of ≥ 25% of the circumference (9/22) or both (10/22). One patient was advised to deliver by CS after an exceptional recovery of both symptoms and anatomical defects. Reevaluation was recommended for 13% (21/160) to assess evolution of symptoms and to determine the recommended mode of delivery. Information was lacking in the remaining 11% (18/160) of consultation reports.

Subsequent deliveries

Deliveries of participants subsequent to the consultation are presented in Fig. 1. Of those who did not redeliver, 9 (12.3% of the 73 who did not re-deliver and 5.6% of the 160 participants) expressed feeling psychologically traumatized by their first delivery and reluctant to have other children.

Counting these and all previous births (15 CS previous to index delivery, 160 index deliveries and 95 subsequent deliveries including 1 twin pregnancy), this amounts to 270 births for 160 patients, constituting an average of 1.69 ± 0.64 children per participant.

Mode of delivery chosen by patients as opposed to recommendations found in consultation reports is shown in Fig. 2. The latter also indicates whether CS were medically indicated, chosen by the patient ("preference") or the indication is unknown, according to participants' responses. Ultimately, 6.2% (10/160) chose to deliver by CS despite the absence of a contraindication to a vaginal birth, and 2% (3/160) preferred a natural delivery to the recommended CS. Of these three patients, none experienced repeated sphincter laceration. However, two of the patients in need of reevaluation opted for a vaginal birth, and both incurred fourth-degree lacerations (versus third-degree tears for their previous delivery). These 2/58 subsequent vaginal deliveries represent a 3.6% sphincter injury recurrence rate.

Looking more closely at the subsequent vaginal deliveries, one finds a decrease of risk factors compared with index deliveries. These results are shown in Table 2. Worth noting, however, is that presentation was unknown for 26% (15/58); therefore, results for this particular risk factor are difficult to interpret. There was also a decreased need for mediolateral episiotomy, performed in 41% (24/58) of subsequent deliveries versus 70% index deliveries in this study.

Current symptoms and evolution

Twenty-four percent (37/155) reported complete absence of urinary incontinence (UDI-6 total = 0 and IIQ-7 total = 0), nearly two-thirds (24/37) of which were already asymptomatic at the consultation. While 76% (118/155) did report symptoms of urinary incontinence (UDI-6 total ≠ 0), the impact of these symptoms on quality of life (based on the IIQ-7 total) was relatively small (see Fig. 3). Urinary incontinence during physical activity was the most frequent complaint and was reported by 55% (85/155) of participants. When asked to describe the evolution of their urinary symptoms since the consultation, 38% (59/155) reported partial or complete recovery (positive), 49% (76/155) reported no change (stable), and 12% (18/155) reported worsened symptoms (negative). Patients who had not completed physiotherapy had significantly fewer urinary incontinence symptoms (average UDI-6/IIQ-7 indicator of 6.84 versus 13, $p = 0.003$). Evolution of these symptoms based on completion of physiotherapy is shown in Fig. 4.

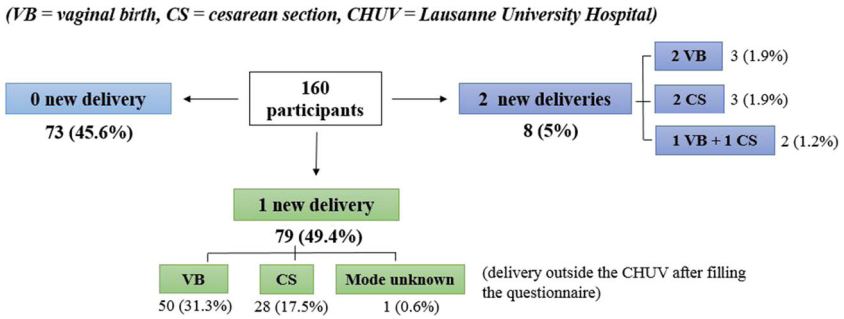
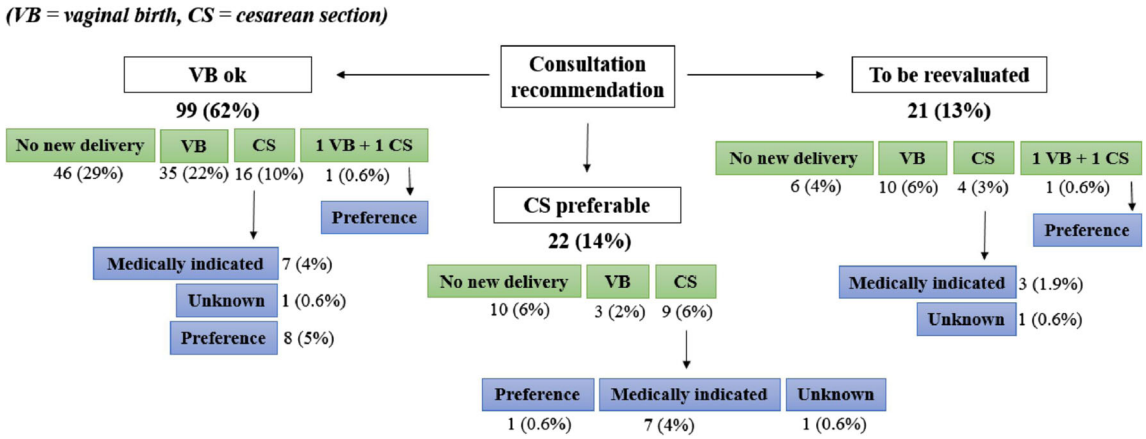


Fig. 1 Deliveries following consultation



Likewise, considering symptoms of anorectal incontinence, 34% (53/155) were completely asymptomatic (Wexner-Vaizey total = 0); 59% (91/155) presented incontinence for gas, 20% (31/155) for liquid stool and 8% (13/155) for solid stool. When asked to describe the evolution of their anorectal incontinence symptoms since the consultation, 32% (48/155) reported partial or complete recovery (positive), 55% (85/155) reported no change (stable), and 11% (17/155) reported worsened symptoms (negative). Patients who had not completed physiotherapy had significantly less anorectal incontinence symptoms (average Wexner-Vaizey total of 1.8 versus 3.3, $p = 0.03$). Evolution of these symptoms based on completion of physiotherapy is shown in Fig. 4.

Several factors such as BMI, tear degree (third versus fourth), CS previous to index, redelivery since index delivery and number of years since last delivery showed no significant impact on the severity or evolution of incontinence symptoms. However, differences were found between patients who redelivered by CS or vaginally; patients with CS reported significantly less urinary incontinence (average UDI-6/IIQ-7 indicator of 9.9 versus 15.6, $p = 0.046$) and somewhat less anorectal incontinence (average Wexner-Vaizey total of 2.5 versus 4.2, $p = 0.069$). Notably, patients who followed consultation recommendations for mode of delivery showed significantly less anorectal incontinence (average Wexner-Vaizey total of 2.69 versus 10.5, $p = 0.0019$), with very little impact on urinary incontinence (average UDI-6/IIQ-7 indicator of 12.2 versus 10.8, $p = 0.826$).

Discussion

This study confirms that anal sphincter laceration during delivery is susceptible to negative physical and emotional sequelae for patients. This can be observed through current symptoms as reflected by the incontinence questionnaires or complaints of pelvic pain and sexual dysfunction found in consultation reports. Also striking is that 5.6% of patients report no longer wanting to have children because of psychological trauma. It is worth noting, however, that despite these challenges, patients in our group did not have fewer children on average than the rest of the Swiss population. Indeed, the fertility rate in this study was 1.69 children per woman, which was higher than the fertility rates of 1.54 and 1.51 children per woman reported by the Swiss Federal Statistical Office for 2015 and 2016, respectively [14]. However, the elective CS rate (38% or 36/95 redeliveries) for these patients was slightly greater than those documented in our institution (34%) [15] and the Swiss population (32%) [16] in 2015. This result aligns with those of other studies reporting unaffected fertility rates but increased elective CS rates among patients with sphincter lacerations [17], probably related to a higher pelvic floor dysfunction rate, as demonstrated earlier in our population [1].

While several studies guide our consultation practice and recommendations, it is currently impossible to predict with accuracy which patients will suffer repeated tears or persistent symptoms with subsequent deliveries. Studies show that 5 elective CSs are necessary to prevent one recurrence [18]

Table 2 Comparison of risk factors present at index and subsequent deliveries

	Forceps (%)	Vacuum (%)	Birth weight > 4 kg (%)	Posterior presentation (%)
Index delivery (n = 160)	52	10	46	23
Subsequent vaginal deliveries ($n = 58$)	2	2	40	9
Decrease (%)	96	83	14	62

and 2.3 elective CSs to prevent 1 case of irreversible anorectal incontinence [19]. This margin of uncertainty can be appreciated in our study with three patients who delivered vaginally without complications despite consultation advice to opt for CS as well as two patients who suffered a second tear. Worth mentioning, however, is that this recurrence of 3.6% is very close to the average rate of sphincter tears found in Europe [6]. This confirms that the incidence of third and fourth degree tear recurrence is similar to the risk for nulliparous patients, as has been described in previous scientific literature [20].

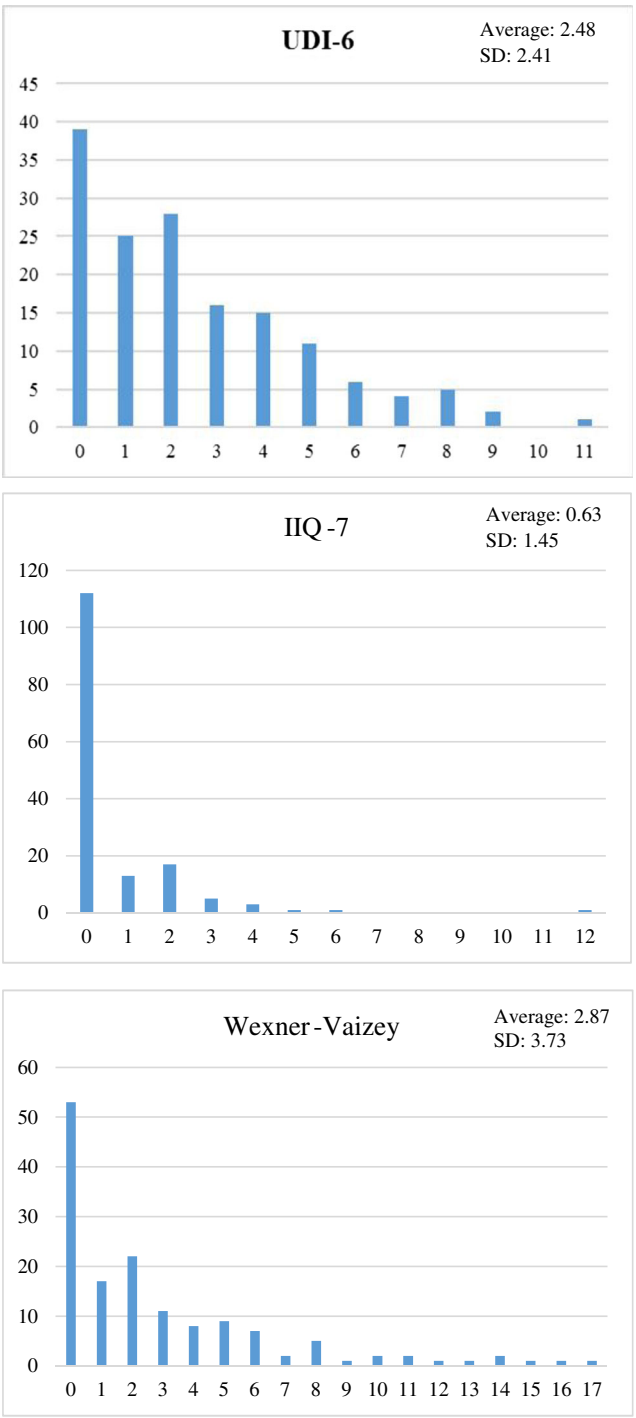


Fig. 3 Total point distribution for UDI-6, IIQ-7 and Wexner-Vaizey questionnaires. X-axis: total points for the given questionnaire; Y-axis: number of patients

Statistical analyses for this study show that patients who redelivered once by CS suffer significantly less from urinary incontinence and somewhat less from anorectal incontinence than patients who redelivered once vaginally. This difference of impact between urinary and anorectal function can be explained by the fact that CS generally stresses the perineal tissues less than vaginal birth (and therefore protects against urinary incontinence), but can still cause indirect damage to the pudendal nerve and amount to anorectal incontinence despite an anatomically intact sphincter [19, 21]. Equally notable is the fact that 32% (9/28) of these CSs were not medically indicated. It is difficult to predict whether vaginal delivery for these patients would have caused symptoms and thus alter results.

Analyses also suggest that patients who followed consultation recommendations for mode of delivery were significantly less symptomatic than patients who did not. However, for this particular test, only two patients had not followed the advice (versus 66 who had). Globally speaking, most patients who come to the consultation follow recommendations (84–85% for both physiotherapy and mode of delivery in subsequent births), with overall positive results. While the sample size of patients who did not follow recommendations is too small to offer conclusive quantitative evidence, this result offers a good indicator of the consultation's positive impact.

Results indicating that patients who did not complete pelvic floor physiotherapy were significantly less symptomatic than patients who did do physiotherapy are perhaps conflicting. However, most patients who did not complete physiotherapy were not symptomatic at the consultation and thus saw no change of their symptoms. On the other hand, patients who completed physiotherapy were more symptomatic at the consultation, with 35–40% observing a positive evolution of their symptoms. We conclude that physiotherapy has a positive impact, although many patients have residual symptoms.

Looking at patients' feedback, it becomes apparent that certain needs are not yet met by our current service. Simple solutions would include improved patient education during pregnancy on delivery risks and potential post-partum symptoms, creating a consultation offering psychological support, and training doctors to inform patients of the possibility to consult with a sexologist. Finally, discussion or self-help groups for these patients may be helpful. One example is the recently founded association "(Re)naissances" (ReBirth in English), which is based in Lausanne.

Concerning the method, the participation rate was < 50% (43%), which is a limitation of this study. However, similar studies [1] including postal questionnaires at our institution reached similar participation rates (36%) despite efforts made

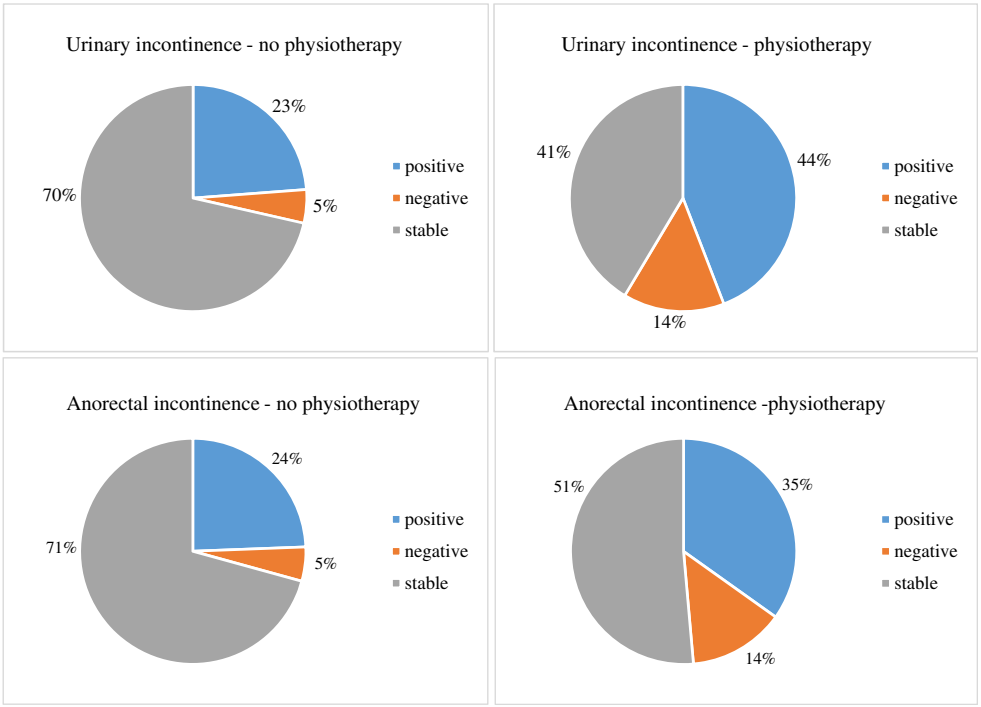


Fig. 4 Evolution of incontinence symptoms based on physiotherapy completion

to recall patients. Contributing to this perhaps is that no reward or compensation of any type was offered to motivate patients' involvement. Other limitations of this study include its retrospective nature, absence of control patients, lack of data on the type of sphincter repair (overlapping vs. end to end) as well as its unexplored aspect of sexuality. Use of validated questionnaires to evaluate urinary and anorectal incontinence and the possibility for patients to share personal experiences and give additional feedback are regarded as strengths of this study.

Looking at factors considered a risk for sphincter tear, it must be noted that previous CS was not included as its impact has been debated in various studies. Those considering CS as a risk mainly attribute the risk to fetal weight responsible for the CS [6]. Another study also underlines that tear risk related to previous CS depends on CS circumstances [21]; elective or early CS places less stress on pelvic structures than CS performed late in labor. Contributing to our decision was the fact that there were only 15 patients with a previous CS in this study, and circumstances related to these deliveries were unknown. Likewise, mediolateral episiotomy was not included as a risk factor since the exact angle of the episiotomy (45–60° or > 60°) performed for these patients was unknown.

Conclusion

This study confirms the positive impact of a post-partum perineal consultation. It confirms the association between anal sphincter laceration with urinary and anorectal incontinence symptoms. However, these symptoms lessen or disappear in most instances and are globally not invalidating for the patients. In our group, consultation recommendations (whether for physiotherapy or mode of subsequent delivery) were followed by 85% of patients, and perineal physiotherapy seemingly contributed to this positive outcome. To better appreciate the impact and value of our consultation, a multicenter study monitoring the evolution of patients with third- or fourth-degree tears based on counseling and follow-up would be of great value. The latter should ideally consider not only symptoms of incontinence, but also sexual function. Equally notable is the potentially significant emotional impact of vaginal deliveries with third- and fourth-degree tears. Improved patient education during pregnancy and increased psychological support could help improve our current service.

Acknowledgements Our thanks to Sarah Guidon for collecting the questionnaires and delivery medical notes.

Compliance with ethical standards

Conflicts of interest None.

References

1. Baud D, Meyer S, Vial Y, Hohlfeld P, Achtari C. Pelvic floor dysfunction 6 years post-anal sphincter tear at the time of vaginal delivery. Int Urogynecology J 2011;22(9):1127–1134.
2. Samarasekera DN, Bekhit MT, Wright Y, Lowndes RH, Stanley KP, Preston JP, et al. Long-term anal continence and quality of life following postpartum anal sphincter injury. Colorectal Dis Off J Assoc Coloproctology G B Irel 2008;10(8):793–799.

3. Outcomes from medium term follow-up of patients with third and fourth degree perineal tears: Journal of Obstetrics and Gynaecology: Vol 30, No 6 [Internet]. [cited 2017 Jun 21]. Available from: http://www.tandfonline.com/doi/full/10.3109/01443615.2010.494205
4. Priddis H, Schmied V, Dahlen H. Women's experiences following severe perineal trauma: a qualitative study. BMC Womens Health. 2014;14:32.
5. Williams A, Lavender T, Richmond DH, Tincello DG. Women's experiences after a third-degree obstetric anal sphincter tear: a qualitative study. Birth 2005;32(2):129–136.
6. Hehir MP, Fitzpatrick M, Cassidy M, Murphy M, O'Herlihy C. Are women having a vaginal birth after a previous caesarean delivery at increased risk of anal sphincter injury? BJOG Int J Obstet Gynaecol. 2014;121(12):1515–20.
7. Jha S, Parker V. Risk factors for recurrent obstetric anal sphincter injury (rOASI): a systematic review and meta-analysis. Int Urogynecology J. 2016;27(6):849–57.
8. Lowder JL, Burrows LJ, Krohn MA, Weber AM. Risk factors for primary and subsequent anal sphincter lacerations: a comparison of cohorts by parity and prior mode of delivery. Am J Obstet Gynecol 2007 ;196(4):344.e1–344.e5.
9. Harvey M-A, Pierce M, Alter J-EW, Chou Q, Diamond P, Epp A, et al. Obstetrical anal sphincter injuries (OASIS): prevention, recognition, and repair. J Obstet Gynaecol Can JOGC J Obstet Gynecol Can JOGC 2015;37(12):1131–1148.
10. Fynes M, Donnelly V, Behan M, O'Connell PR, O'Herlihy C. Effect of second vaginal delivery on anorectal physiology and faecal continence: a prospective study. Lancet Lond Engl 1999;354(9183):983–986.
11. Uebersax JS, Wyman JF, Shumaker SA, McClish DK, Fantl JA. Short forms to assess life quality and symptom distress for urinary incontinence in women: the incontinence impact questionnaire and the urogenital distress inventory. Continence program for women research group. Neurourol Urodyn 1995;14(2):131–139.
12. Jorge JM, Wexner SD. Etiology and management of fecal incontinence. Dis Colon Rectum 1993;36(1):77–97.
13. Vaizey CJ, Carapeti E, Cahill JA, Kamm MA. Prospective comparison of faecal incontinence grading systems. Gut 1999 ; 44(1):77–80.
14. Naissances et décès [Internet]. [cited 2016 Nov 19]. Available from: https://www.bfs.admin.ch/bfs/fr/home/statistiques/population/naissances-deces.html
15. Netgen. Risques à long terme de l'accouchement par césarienne [Internet]. Revue Médicale Suisse. [cited 2016 Nov 22]. Available from: http://www.revmed.ch/RMS/2009/RMS-222/Risques-a-long-terme-de-l-accouchement-par-cesarienne
16. Office fédéral de la santé publique - Accouchement par césarienne en Suisse [Internet]. [cited 2016 Nov 22]. Available from: http://www.bag.admin.ch/themen/medizin/13641/15309/index.html?lang=fr
17. Baghestan E, Irgens LM, Børdahl PE, Rasmussen S. Risk of recurrence and subsequent delivery after obstetric anal sphincter injuries. BJOG Int J Obstet Gynaecol. 2012;119(1):62–9.
18. Minaglia SM, Kimata C, Soules KA, Pappas T, Oyama IA. Defining an at-risk population for obstetric anal sphincter laceration. Am J Obstet Gynecol. 2009;201(5):526.e1–6.
19. McKenna DS, Ester JB, Fischer JR. Elective cesarean delivery for women with a previous anal sphincter rupture. Am J Obstet Gynecol. 2003;189(5):1251–6.
20. Boggs EW, Berger H, Urquia M, McDermott CD. Recurrence of obstetric third-degree and fourth-degree anal sphincter injuries. Obstet Gynecol. 2014;124(6):1128–34.
21. Fynes M, Donnelly VS, O'Connell PR, O'Herlihy C. Cesarean delivery and anal sphincter injury. Obstet Gynecol 1998; 92(4 Pt 1):496–500.