Obstetric anal sphincter injuries

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Anal Incontinence

- One of the worst benign afflictions any human being has to endure
- Distressing and demoralising condition that can have a devastating impact on quality of life
- Double incontinence
- At 4 years after childbirth, 7% of women suffer faecal incontinence (*Gartland D et al; BJOG 2015*)
Third degree obstetric anal sphincter tears: risk factors and outcome of primary repair

A H Sultan, M A Kamm, C N Hudson, C I Bartram

Abstract

Objectives—To determine (i) risk factors in the development of third degree obstetric tears and (ii) the success of primary sphincter repair.

Design—(i) Retrospective analysis of obstetric variables in 50 women who had sustained a third degree tear, compared with the remaining 8553 vaginal deliveries during the same period. (ii) Women who had sustained a third degree tear and had primary sphincter repair and control subjects were interviewed and investigated with anal endosonography, anal manometry, and pudendal nerve terminal motor latency measurements.

Setting—Antenatal clinic in teaching hospital in inner London.

Subjects—(i) All women (n=8603) who delivered vaginally over a 31 month period. (ii) 34 women who sustained a third degree tear and 88 matched controls.

Main outcome measures—Obstetric risk factors, defaecatory symptoms, sonographic sphincter defects, and pudendal nerve damage.

Results—(i) Factors significantly associated with development of a third degree tear were: forceps delivery (10% vs 7% in controls; P=0.00001), primiparous delivery (85% vs 43%; P=0.00001), birth weight >4 kg (P=0.00001), and an interuterine in...
• Prospective study 6 w before and after childbirth (n=202)
• 79 primiparous vaginal deliveries

33% ‘occult’ OASIS
“Occult” anal sphincter injury - 10 prospective studies in primiparae before and after childbirth

Belmonte-Montes et al 2001 13%
Nazir et al 2002 19%
Willis et al 2002 19%
Zetterstrom et al 1999 20%
Abramowitz et al 2000 26%
Faltin et al 2000 28%
Sultan et al 1993 33%
Donnelly et al 1998 35%
Chaliha et al 2001 38%
Rieger et al 1998 41%

Mean 27%
Prospective study of women having first vaginal delivery

Perineal and rectal examination repeated

Endoanal ultrasound immediately after delivery and 8 weeks postpartum (n=241)

1% of women, if any, sustain occult anal sphincter injuries
The educated finger
How do you classify a third degree tear?

Fernando R et al 2002

Consultants
(n= 672)

EAS partially torn 33%
EAS completely torn 13%
IAS exposed 29%

Wrongly classified as a second degree tear
Definition of third degree tear:

Anal sphincter and anorectal mucosa disruption.
Classification of 3\textsuperscript{rd} / 4\textsuperscript{th} degree tears

1st degree = vaginal epithelium
+ 

2nd degree = perineal muscles
+ 

3rd degree = anal sphincter

\begin{itemize}
  \item 3a = \(<50\% \) external sphincter thickness
  \item 3b = \(\geq 50\% \) external sphincter thickness
  \item 3c = internal sphincter torn
\end{itemize}
+

4th degree = anal epithelium torn
Classification of 3\textsuperscript{rd} / 4\textsuperscript{th} degree tears

Sultan AH, Clinical Risk 1999;5:193-6
RCOG GreenTop Guidelines 2001
International Consultation on Incontinence 2002
Grade 3b tear
Internal anal sphincter repair

Primary repair

Secondary repair
Internal sphincter defects after primary repair of OASIS

- n = 500
- Persistent IAS defect independently associated with severe anal incontinence
- OR 5.1 (95% CI = 1.5 – 22.9)

Mahony R et al 2007
National survey of perineal trauma and its subsequent management in the United Kingdom

G. Thiagamoorthy · A. Johnson · R. Thakar · A. H. Sultan

Int Urogynecol J (2014) 25:1621–1627

- Questionnaire to all delivery units in UK (n=262)
- 692 259 deliveries

<table>
<thead>
<tr>
<th></th>
<th>Births(n)</th>
<th>Median %</th>
</tr>
</thead>
<tbody>
<tr>
<td>OASIS</td>
<td>13671</td>
<td>2.9 (0.0-8.0)</td>
</tr>
<tr>
<td>Primip</td>
<td>142555</td>
<td>6.1 (0.0-14.7)</td>
</tr>
<tr>
<td>Multip</td>
<td>251217</td>
<td>1.7 (0.0-3.7)</td>
</tr>
</tbody>
</table>
Health at a Glance 2013
OECD Indicators

5.6.2. Obstetric trauma, vaginal delivery without instrument, 2011 (or nearest year)

Crude rates per 100 vaginal deliveries without instrument assistance

Third- and fourth-degree perineal tears among primiparous women in England between 2000 and 2012: time trends and risk factors

I Gurol-Urganci, a,b DA Cromwell, a LC Edozien, c TA Mahmood, b EJ Adams, c RH Richmond, b,d A Templeton, b JH van der Meulen a

1 million primiparous vaginal deliveries
Over diagnosis and suboptimal repair of acute obstetric anal sphincter injuries (OASIS) - time for re-appraisal

D. Sioutis, A.H. Sultan, R. Thakar

*Ultrasound Obstet Gynecol 2016 (in press)*

- Prospective study over 10 years (2003-2013)
- n=908 women had endoanal scans

7% wrongly diagnosed as having sustained OASIS when in reality they sustained second degree tears
Reasons for the increase rate of OASIS

- Improved detection and recording with the new classification
- Over diagnosis
- Rise in maternal age at first birth
- Increase in maternal weight
- Changes in management of the second stage of labour
Anal incontinence after primary repair of OASIS

Sultan AH, Thakar R 2007

35 studies in the last 25 years

• Anal incontinence 39% (mean) (range 15 to 61%)

• Faecal incontinence 14% (mean) (range 2-29%)
End-to-end primary anal sphincter repair

Sultan 94       = 85%
Fitzpatrick 00 = 85%
Poen 98         = 88%
Pinta 04        = 75%
Superficial Transverse Perineal Muscle
The Management of Third- and Fourth-Degree Perineal Tears

Green-top Guideline No. 29
June 2015
• Of the 60 women with isolated faecal incontinence 95% were found to have unrepaired OASIS

• Only 5% had a true rectovaginal fistula
Cloacal-like defects
Repaired but undiagnosed 3rd degree tear
<table>
<thead>
<tr>
<th>Mode of delivery</th>
<th>%</th>
<th>OASIS rate</th>
<th>Crude OR</th>
<th>Adjusted OR</th>
</tr>
</thead>
<tbody>
<tr>
<td>Normal w/o episiotomy</td>
<td>61.0%</td>
<td>3.4%</td>
<td>-</td>
<td>-</td>
</tr>
<tr>
<td>Normal w/ episiotomy</td>
<td>11.3%</td>
<td>2.2%</td>
<td>0.63 (0.58-0.69)</td>
<td>0.57 (0.51-0.63)</td>
</tr>
<tr>
<td>Forceps w/o episiotomy</td>
<td>1.9%</td>
<td>22.7%</td>
<td>8.30 (7.10-9.70)</td>
<td>6.53 (5.57-7.64)</td>
</tr>
<tr>
<td>Forceps w/ episiotomy</td>
<td>9.8%</td>
<td>6.1%</td>
<td>1.84 (1.67-2.01)</td>
<td>1.34 (1.21-1.49)</td>
</tr>
<tr>
<td>Ventouse w/o episiotomy</td>
<td>4.7%</td>
<td>6.4%</td>
<td>1.94 (1.79-2.10)</td>
<td>1.89 (1.74-2.05)</td>
</tr>
<tr>
<td>Ventouse w/ episiotomy</td>
<td>11.2%</td>
<td>2.3%</td>
<td>0.67 (0.61-0.74)</td>
<td>0.57 (0.51-0.63)</td>
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</table>
Right “mediolateral” episiotomy

- To get a 45-60 degree angle
- Cut 60 degree angle at crowning
EPISCISSORS-60®

first scissors designed to give an accurate mediolateral episiotomy

www.medinvent.net
email:info@medinvent.net
Low Resource Settings

- Education
- Contraception
- Teenage pregnancies
- Cultural beliefs
- Violence and abuse on women
- Prolonged labour (traditional birth attendants)
- Access to healthcare
Training in low-resource settings

Kitovu Hospital, Uganda
Training in low-resource settings

Kitovu Hospital, Uganda
Training in low-resource settings
PROTECT Initiative
Ranee Thakar, Abdul Sultan

Prevention and Repair Of Tears and Episiotomy through Co-ordinated Training

• Web-based modules
• Hands-on training
• Train the trainers course, IUGA
• Certified with videos

Training the Trainers Globally

www.IUGA.org
Hands-on 3rd and 4th degree tear workshop
RCOG World Congress 2017
Cape Town

Delegates from 12 countries
Perineal and OASIS hands-on workshops

145 hands-on workshops in 62 cities
6000 doctors and midwives
Dr Rajamaheswari, Chenai, India

First certified trainer in PROTECT
17 locations in India
25000 doctors trained
Manual Perineal Protection

Laine et al 2008, Hals et al 2010

Technique:
• Manually slowing down the delivery of the fetal head
• Perineal support/protection with the other hand
• Instructions to the delivering woman not to push
• Correcting the quality of episiotomy technique
A Multicenter Interventional Program to Reduce the Incidence of Anal Sphincter Tears
(Obstet Gynecol 2010;116:901–8)

Elisabeth Hals, RN, Pål Oian, MD, PhD, Tiina Pirhonen, RN, Mika Gistser, M Phil, MSOCSCI, Sissel Hjelle, MD, Elisabeth Berge Nilsen, MD, Anne Mette Severinsen, RN, Cathrine Solsetten, RN, Tom Hartgill, MD, and Jouko Pirhonen, MD, PhD
Significant reduction in major tears by 75% (3c and 4th degree tears)
The Obstetric Anal Sphincter Injury Care Bundle

A quality improvement programme to reduce the incidence of third- and fourth-degree perineal tears
Interventions included in the care bundle

1. Communication
2. Use of manual perineal protection
3. Medio-lateral episiotomy (60 degree angle) at crowning to be used when indicated.
4. Diagnosis

Ranee Thakar
**Overall programme plan - Stepped wedge cluster randomised study**

<table>
<thead>
<tr>
<th>Project set-up</th>
<th>Block 1</th>
<th>Roll-out</th>
<th>Implementation</th>
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<tbody>
<tr>
<td>Block 2</td>
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<td>Block 3</td>
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<td>Block 4</td>
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<td>Evaluation</td>
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<td>Practice outcomes</td>
<td>Clinical outcomes</td>
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<td>Dissemination</td>
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**Stages in each block**

- **Planning**
- **Roll-out**
- **Implementation**

**Skills development day**

**Shared learning day**
Conclusions

• We have come a long way .......
  but we have just only begun
• Prevention and cure
• Empower champions within the community
• Put listening in to action
Doctors

Midwives

Health ministers

Champions

Charitable organisations

Health care assistants

Community leaders and workers

Traditional birth attendants