Obstetric Anal Sphincter Injuries - current status

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Disclosures

Childbirth Charitable fund for Research and Education
www.perineum.net
Obstetric Anal Sphincter Injuries (OASIS) – current status

- Anatomy and physiology

- Anal incontinence
  - Prevalence
  - Pathophysiology

- OASIS
  - Classification
  - Diagnosis
  - Repair
  - Post OASIS care
  - Management of subsequent pregnancy
  - Prevention
Anatomy of the anal sphincter

Thakar R, Fenner D 2007
<table>
<thead>
<tr>
<th>3 parts</th>
<th>2 parts</th>
<th>1 part</th>
</tr>
</thead>
<tbody>
<tr>
<td>Santorini 1715</td>
<td>Galen 170AD</td>
<td>Versalius 1543</td>
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<tr>
<td>Van Holl 1897</td>
<td>Hiller 1931</td>
<td>Cowper 1694</td>
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<td>Thompson 1899</td>
<td>Courtney 1950</td>
<td>Bassett 1961</td>
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<td>Milligan &amp; Morgan 1934</td>
<td>Fowler 1957</td>
<td>Ayoub 1979</td>
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<tr>
<td>Levy 1936</td>
<td>Parks 1958</td>
<td>Golligher 1984</td>
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<tr>
<td>Eaton 1942</td>
<td>Walls 1963</td>
<td>Dalley 1987</td>
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<td>Wilde 1949</td>
<td>Wilson 1967</td>
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<td>Gorsch 1955</td>
<td>Kerremans 1969</td>
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<tr>
<td>Uhlenhuth 1953</td>
<td>Oh &amp; Kark 1972</td>
<td></td>
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<tr>
<td>Hughes 1956</td>
<td>Lawson 1974</td>
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<tr>
<td>Morgan &amp; Thompson 1956</td>
<td>Levi 1991</td>
<td></td>
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<td>Stonesifer 1960</td>
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<td>Shafik 1975</td>
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<td>Steizner 1981</td>
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<tr>
<td>Wendell Smith 1986</td>
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</tbody>
</table>
EAS - intra-individual variations

Sultan AH 1995 (MD Thesis)
External anal sphincter
Thakar R & Sultan AH 2004 (modified)
Anal Incontinence

- Rectal Compliance
  - Inflammatory bowel disease
  - Radiotherapy
  - Rectal hypersensitivity
- Neurological Function
- Bowel transit
- Stool Consistency
- Sphincter Mechanism

Inflammatory bowel disease
Radiotherapy
Rectal hypersensitivity

Bowel transit
Mechanism of anal incontinence

- Bowel evacuation
- EAS & Puborectalis relaxation

- Rectal distension
  - IAS relaxation
  - Contact & Sampling

- Colonic accommodation
- EAS & Puborectalis contraction

Convenient

Inconvenient
External anal sphincter

- Striated muscle in a state of tonic contraction
- Most of the squeeze pr.
- Contraction maintained for < 2 minutes
- Reflex contraction - ↑ intra-abdominal pressure
- Relaxes during straining
Internal anal sphincter

- Smooth muscle
- Autonomic control
- Contributes up to 70% of resting pressure
- Passive soiling and flatus incontinence
IAS injury

IAS defect

Reduced anal tone

Passive soiling and flatus incontinence
Function of the anal sphincters

**EAS**
- Striated muscle
- Somatic control
- Urge faecal incontinence

**IAS**
- Smooth muscle
- Autonomic control
- Passive soiling
- Flatus incontinence
Mechanism of neurogenic anorectal incontinence

Prolonged straining

\[ \text{Perineal descent} \]

Traction injury of the pudendal nerve

Atrophy of striated anorectal muscles

Anorectal incontinence

- Bowel evacuation
- Childbirth

Parks AG 1977
Childbirth and nerve trauma

- 33% of primiparae and 50% of multiparae had prolonged PNTML 48 hours post-partum (n=122)
- 60% recovered by 2 months.
- 5 year follow up (n=14) suggested that denervation is progressive.
- None had faecal incontinence.
Neuropathic Injury after OASIS
Rahn DD et al 2009

- 80 female rats → sham or anal sphincter laceration and repair postpartum
- No significant differences in neurophysiologic function of EAS between groups by 6 months postpartum
80 female rats underwent a second operation after 3 months - randomised to third degree tear or sham.

By 3 months there was complete recovery in terms of fatigue and contractile function.
How do you classify a third degree tear?

Fernando R et al 2002

<table>
<thead>
<tr>
<th></th>
<th>Trainees</th>
<th>Consultants</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>(n=148)</td>
<td>(n=672)</td>
</tr>
<tr>
<td>EAS partially torn</td>
<td>22%</td>
<td>33%</td>
</tr>
<tr>
<td>EAS completely torn</td>
<td>7%</td>
<td>13%</td>
</tr>
<tr>
<td>IAS exposed</td>
<td>23%</td>
<td>29%</td>
</tr>
</tbody>
</table>

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

Anal sphincter *and* anorectal mucosa disruption

Ian Donald 1978

*Practical Obstetrics*
Classification of 3rd / 4th degree tears

1st degree = vaginal epithelium

2nd degree = perineal muscles

3rd degree = anal sphincter

3a = <50% external sphincter thickness
3b = > 50% external sphincter thickness
3c = internal sphincter torn

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
NICE 2007
OASIS - does the grade of tear matter?

Roos AM et al 2010

- 3a/3b minor (n=403) versus 3c/4 (n=84) major
- Primary repair of OASIS
- Major tears:
  - ↓ Resting and squeeze anal pressures
  - ↑ Persistent IAS defects
  - ↑ Faecal incontinence
  - ↓ QoL
Prevalence of OASIS

- **Midline episiotomy**
  - 24% \( \text{Coats P et al 1980} \)
  - 19% primips \( \text{Peleg D et al 1999, Fenner D et al 2003} \)

- **Mediolateral episiotomy**
  - 0.6% \( \text{Sultan AH et al 1994; Walsh C et al 1996} \)
  - 1.7% \( \text{Harkin R et al 2003} \)
  - 4.5% \( \text{Croydon} \)
  - 7.5% \( \text{Nordenstam J et al 2008} \)
OASIS in primiparae in England
Gurol-Urganci I et al BJOG 2013:120:1516-25

1 million primiparous vaginal deliveries 2000 - 2012
OASIS rates in UK units
Thiagamoorthy G, Johnson A, Thakar R, Sultan AH
(submitted for publication)

- Questionnaire sent to 267 units
- Response 217 (81%)
- January – December 2009
## OASIS rates in UK units

**Thiagamoorthy G, Johnson A, Thakar R, Sultan AH**

<table>
<thead>
<tr>
<th></th>
<th>Births (n)</th>
<th>Median %</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>OASIS</strong></td>
<td>13671</td>
<td>2.9 (0.0-8.0)</td>
</tr>
<tr>
<td><strong>Primips</strong></td>
<td>142555</td>
<td>4.9 (0.0-14.7)</td>
</tr>
<tr>
<td><strong>Multips</strong></td>
<td>251217</td>
<td>1.4 (0.0-3.7)</td>
</tr>
</tbody>
</table>
Third & Fourth degree tears
Anal sphincter disruption during vaginal delivery

Sultan AH et al 1993 (NEJM)

Prospective study 6 w before and after childbirth (n=202)

79 primiparous vaginal deliveries

- 33% occult anal sphincter injuries
- 13% developed new defecatory symptoms
- Forceps was an independent risk factor
“Occult” anal sphincter injuries – 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%
“Occult” external anal sphincter defect

Sultan AH et al (NEJM) 1993

Antenatal

Postnatal
### Effect of 2nd vaginal delivery

**Fynes M et al 1999**

Prospective study (n=59) 6 - 12 wks postpartum

<table>
<thead>
<tr>
<th></th>
<th>1st delivery</th>
<th>2nd delivery</th>
</tr>
</thead>
<tbody>
<tr>
<td>Sphincter defects</td>
<td>34%</td>
<td>37%</td>
</tr>
</tbody>
</table>
Occult anal sphincter injuries - myth or reality?

Vasanth Andrews
Abdul Sultan
Ranee Thakar
Peter Jones
BJOG 2006
Occult anal sphincter injuries
Andrews V et al 2006

- Prospective study of women having first vaginal delivery

- Perineal and rectal examination repeated

- Endoanal ultrasound immediately after delivery and 8 weeks postpartum (n=241)
Occult anal sphincter injuries
Andrews V et al 2006

- One laceration of 59 was not seen clinically but identified by scan immediately at delivery and at 6 weeks
- No new defects seen at 8 weeks
- 1 “occult” external sphincter injury – could be either truly occult or missed

Less than 1% of women sustain occult anal sphincter injuries
Diagnosis of OASIS - principles

- Clear view – lighting and exposure
- Adequate analgesia
- Rectal examination
- Anatomy
Obstetric Anal Sphincter Injuries- 
primary repair
<table>
<thead>
<tr>
<th>Authors</th>
<th>Year</th>
<th>Country</th>
<th>n</th>
<th>FU</th>
<th>Anal Incont</th>
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</thead>
<tbody>
<tr>
<td>Sangalli et al</td>
<td>2000</td>
<td>Switzerland</td>
<td>177</td>
<td>13y</td>
<td>15%</td>
</tr>
<tr>
<td>Wood et al</td>
<td>1998</td>
<td>Australia</td>
<td>84</td>
<td>31m</td>
<td>17%</td>
</tr>
<tr>
<td>Walsh et al</td>
<td>1996</td>
<td>England</td>
<td>93</td>
<td>3m</td>
<td>20%</td>
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<tr>
<td>Sander et al</td>
<td>1999</td>
<td>Denmark</td>
<td>48</td>
<td>1m</td>
<td>21%</td>
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<tr>
<td>Crawford et al</td>
<td>1993</td>
<td>USA</td>
<td>35</td>
<td>12m</td>
<td>23%</td>
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<tr>
<td>Sorensen et al</td>
<td>1993</td>
<td>Denmark</td>
<td>38</td>
<td>3m</td>
<td>24%</td>
</tr>
<tr>
<td>Nielsen et al</td>
<td>1992</td>
<td>Denmark</td>
<td>24</td>
<td>12m</td>
<td>29%</td>
</tr>
<tr>
<td>Go &amp; Dunselman</td>
<td>1988</td>
<td>Netherland</td>
<td>20</td>
<td>6m</td>
<td>33%</td>
</tr>
<tr>
<td>Uustal Fornell et al</td>
<td>1996</td>
<td>Sweden</td>
<td>51</td>
<td>6m</td>
<td>40%</td>
</tr>
<tr>
<td>Poen et al</td>
<td>1998</td>
<td>Netherland</td>
<td>117</td>
<td>1-10y</td>
<td>40%</td>
</tr>
<tr>
<td>Sultan et al</td>
<td>1994</td>
<td>England</td>
<td>34</td>
<td>2m</td>
<td>41%</td>
</tr>
<tr>
<td>Zetterstrom et al</td>
<td>1999</td>
<td>Sweden</td>
<td>46</td>
<td>9m</td>
<td>41%</td>
</tr>
<tr>
<td>Sorensen et al</td>
<td>1988</td>
<td>Denmark</td>
<td>25</td>
<td>78m</td>
<td>42%</td>
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<tr>
<td>Tetzschner et al</td>
<td>1996</td>
<td>Denmark</td>
<td>72</td>
<td>2-4y</td>
<td>42%</td>
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<tr>
<td>Kammerer-Doak et al</td>
<td>1999</td>
<td>New Mexico</td>
<td>15</td>
<td>4m</td>
<td>43%</td>
</tr>
<tr>
<td>Haadem et al</td>
<td>1988</td>
<td>Sweden</td>
<td>62</td>
<td>3m</td>
<td>44%</td>
</tr>
<tr>
<td>Bek &amp; Laurberg</td>
<td>1992</td>
<td>Denmark</td>
<td>121</td>
<td>78m</td>
<td>50%</td>
</tr>
<tr>
<td>Fitzpatrick et al</td>
<td>2000</td>
<td>Ireland</td>
<td>107</td>
<td>3m</td>
<td>54%</td>
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<tr>
<td>Gjessing et al</td>
<td>1998</td>
<td>Norway</td>
<td>38</td>
<td>1-5y</td>
<td>57%</td>
</tr>
<tr>
<td>Goffeng et al</td>
<td>1998</td>
<td>Sweden</td>
<td>27</td>
<td>12m</td>
<td>59%</td>
</tr>
</tbody>
</table>

Mean 37 %
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%
OASIS – Accuracy of clinical diagnosis
Schizas A et al (ICS2012)

- 3d endoanal ultrasound performed in 456 women referred to third degree tear clinic
- 18% of women had no evidence of anal sphincter injury.
Repair of anal mucosa
Repair of anal mucosa using continuous 3-0 vicryl
Primary internal anal sphincter repair
Sultan AH et al 1999
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

- n = 47 primips
- Anal incontinence symptoms associated with increasing size of IAS defect

Vaccaro & Clemons 2008
OASIS - does the grade of tear matter?
Roos AM et al 2010

- 3a/3b minor (n=403) versus 3c/4 (n=84) major
- Primary repair of OASIS
- Major tears:
  - Faecal incontinence
  - QoL
  - Resting and squeeze anal pressures
  - Persistent IAS defects
Identify the EAS
Expose the full length of the EAS
Anal canal length & fecal continence

Secondary sphincter repair
- Mean follow-up = 16 months (n=51)
- Post-operative anal canal length best predicted continence
  
  *Hool GR et al DCR 1998*

Primary sphincter repair
- Mean follow-up 27 months (n =74)
- Shorter anal length associated with a poor outcome
  
  *Nordeval S et al 2005*
Incomplete end-to-end external sphincter repair
Secondary sphincter repair

Parks overlap technique
Primary overlap anal sphincter repair

Sultan AH et al 1999 BJOG

www.perineum.net
Overlap vs end-to-end n = 64

Fernando R et al 2006

% Patients

Faecal incontinence

p=0.01

Overlap

End to end

6 weeks 3 months 6 months 12 months
Methods of repair for OASIS
Fernando R et al 2006 (Cochrane Review)

- 279 women (3 x ) RCT
  Fitzpatrick 2000, Fernando 2005, Williams 2006
- Overlap repair appears to be associated with a reduced risk for faecal urgency & incontinence score
- it would be inappropriate to recommend one type of repair over the other
Overlap vs end-to-end repair RCT
Farrell SA et al 2012

- 149 primiparous women
- 3 year follow up
- No significant difference in fecal incontinence at 3 years

Table 4. Fecal Incontinence Rates in Women Randomized to Either End-to-End or Overlapping Repair of Third-Degree or Fourth-Degree Anal Sphincter Lacerations

<table>
<thead>
<tr>
<th>Time</th>
<th>No. Responding</th>
<th>Proportion Incontinent (%)</th>
<th>Risk Difference OR (CI)</th>
<th>P</th>
</tr>
</thead>
<tbody>
<tr>
<td>6 mo</td>
<td>123</td>
<td>5/62 (8)</td>
<td>9/61 (15)</td>
<td>0.166 (0.102–0.434)</td>
</tr>
<tr>
<td>1 y</td>
<td>104</td>
<td>4/54 (7)</td>
<td>8/50 (16)</td>
<td>0.210 (0.075–0.496)</td>
</tr>
<tr>
<td>2 y</td>
<td>95</td>
<td>7/48 (22)</td>
<td>6/47 (13)</td>
<td>0.038 (−.330–0.253)</td>
</tr>
<tr>
<td>3 y</td>
<td>68</td>
<td>5/31 (16)</td>
<td>6/37 (16)</td>
<td>0.002 (−0.320–0.323)</td>
</tr>
</tbody>
</table>

OR, odds ratio; CI, confidence interval.
Change in anal incontinence from 6 weeks to 12 months

Fernando R et al 2006

% Patients

p=0.01 (Mann Whitney test)

- No AI
- AI Improved
- AI same
- AI worse

Overlap
End to end
Change in faecal incontinence from 6 months to 3 years

Farrell SA et al 2012

% Patients

End-to-end
Overlap
Suture materials

www.perineum.net

- **Anal Mucosa**
  - Vicryl 3-0

- **Internal Anal Sphincter**
  - Mattress end-to-end PDS 3-0

- **External Anal Sphincter**
  - Mattress/Overlap  PDS 3-0
OASIS Repair
Operating Theatre

- Sterile environment
- Good lighting
- Good exposure
- Appropriate instrument tray, sutures
- Anaesthesia – spinal, epidural, General
- Assistance
OASIS Repair - Instruments
www.perineum.net

- Tooth Forceps
- Needle Holder
- Artery Forceps
- Weislander Retractor
- Stitch Scissors
- McIndoe Scissors
- Allis Forceps
Who should perform acute repair?

Fernando R et al 2002

Colorectal surgeons (n=90)
- Obstetricians: 16%
- Colorectal: 19%
- Jointly: 53%

96% of colorectal surgeons are involved in one or less acute tears per year
Role of colostomy during acute repair?

Fernando R et al 2002

Colorectal surgeons (n=90)

30% will perform colostomy for OASIS
2.2% for all 3rd degree tears
28% for all 4th degree tears
vagina

Anus
Antibiotic prophylaxis for OASIS

Duggal N et al 2008

- Prospective placebo controlled RCT (n=147)
- Single IV dose of cephalosporin
- Perineal wound infection 8% vs 24% in placebo
Laxative alone versus laxative and a bulking agent

Eogan M et al 2007

- Randomised controlled trial (n=147)
- Lactulose versus Lactulose plus Fybogel
- Postpartum Incontinence significantly more with the two preparations (33% versus 18%)
- No difference in incontinence at 3 months
OASIS Repair

How can OASIS be minimised?
OASIS - Vacuum vs forceps
Eason & Thakar 2007

Comparison: Vacuum vs. forceps
Outcome: Anal sphincter tears

Study | RD (fixed) 95% CI | RD (fixed) 95% CI
--- | --- | ---
Lasibrey | -0.02 [-0.04, 0.01] | -0.06 [-0.08, -0.04]
Vicca | -0.10 [-0.17, -0.03] | -0.10 [-0.18, -0.02]
Dell | -0.02 [-0.13, 0.10] | -0.03 [-0.16, 0.10]
Johanson89 | -0.06 [-0.14, 0.02] | -0.04 [-0.13, 0.05]
Johanson93 | -0.03 [-0.07, 0.01] | -0.02 [-0.06, 0.02]
Salamaleki | -0.03 [-0.05, 0.02] | -0.03 [-0.05, 0.02]
Boitli | -0.17 [-0.23, -0.11] | -0.10 [-0.16, -0.05]
Weerasereka | -0.00 [-0.02, 0.02] | -0.09 [-0.20, 0.02]
Fitzpatrick | -0.09 [-0.20, 0.02] | -0.06 [-0.08, -0.04]

Total (95% CI) | -0.06 [-0.08, -0.04] | -0.06 [-0.08, -0.04]
Total events: 100 (Vacuum), 191 (Forceps)
Routine versus restrictive episiotomy
Carroli G & Mignini L. Cochrane library, 2012

Routine versus Restrictive (8 studies)

After restrictive use:

- Less posterior perineal trauma and fewer healing complications
Episiotomy: midline -v- mediolateral

*Coats PM et al  1980*

- Randomised 407 primiparae
- Incidence of OASIS
  - midline = 24%
  - mediolateral = 9%
Angle of episiotomy

Andrews et al 2005
Mediolateral Episiotomy
Andrews V et al BJOG 2005
Andrews V et al Birth 2006

- 254 primips
- No midwife and only 13 (22%) doctors performed a truly mediolateral episiotomy (between 40 to 60 degrees from the midline)
- Episiotomies angled closer to the midline were significantly associated with OASIS (26 vs 37 degrees)
Mediolateral Episiotomy
Eogan et al 2006

- Case-control study (54 versus 46 controls)
- 50% risk reduction for every 6° from midline
Are OASIS preventable?
Laine K et al 2012
Interventions to reduce OASIS

Laine K et al 2008

- Third and 4\textsuperscript{th} degree tears ↓ 4.03\% to 1.17\%
- 4\textsuperscript{th} degree tears ↓ 12 to < 1 per year
Interventions to reduce OASIS

Laine K et al 2008

Interventions introduced
- Slow controlled delivery
- Mediolateral/ lateral episiotomy 22%
- Practical supervision
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 Gissler, DrPH, MSOCSCI, Sissel Hjelle, MD, Elisabeth Berge Nilsen, MD, Anne Mette Severinsen, RN, Cathrine Solsetten, RN, Tom Hartgill, MD, and Jouko Pirhonen, MD, PhD

![Graph A: Obstetric anal sphincter injuries per 100 vaginal births (%)](image)

- Lillehammer
- Stavanger
- Tromsø
- Alesund
- Total

![Graph B: Obstetric anal sphincter injuries per 100 instrumental vaginal births (%)](image)

- Lillehammer
- Stavanger
- Tromsø
- Alesund
- Total
Management of subsequent pregnancy after OASIS?
Management of pregnancy after OASIS

**Offer CS**
- Asymptomatic

**Abnormal** —
- (Defect >1hr Incremental MSP < 20 mmHg)
- Severe faecal incontinence

**Family not complete**
- Vaginal delivery

**Family complete / delay**
- 2° sphincter repair

**Hospital follow-up**
- [Perineal Clinic]

**Anal manometry & ultrasound**
- Normal

**Symptomatic**
- **Conservative Mx**
  - Dietary advice
  - Regulate bowel action
  - Constipating agents:
    - codeine phosphate
    - loperamide
    - PFE & biofeedback

**Offer CS**
- Mild incontinence (flatus, staining)

**Vaginal delivery**
- Asymptomatic

Asymptomatic

Family complete / delay

- Offer CS
56 deliveries 2002 - 2006
38 (70%) vaginal deliveries
No significant deterioration in:
- bowel or bladder symptoms
- quality of life
- resting and squeeze pressures
No significant new scan defects
Randomised controlled trial comparing early home biofeedback physiotherapy with pelvic floor exercises for the treatment of third degree tears (EBAPT trial)

C Peirce, C Murphy, M Fitzpatrick, M Cassidy, L Daly, PR O’Connell, C O’Herlihy
2013
## Structured Question

<table>
<thead>
<tr>
<th><strong>Participants</strong></th>
<th>120 Primiparous women who sustained primary third degree tears during childbirth</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Intervention</strong></td>
<td>Early biofeedback physiotherapy (using a portable biofeedback machine)</td>
</tr>
<tr>
<td><strong>Comparison</strong></td>
<td>Pelvic floor exercise education</td>
</tr>
<tr>
<td><strong>Outcomes</strong></td>
<td>Primary: differences in anorectal manometry at 3 months post-partum&lt;br&gt;Secondary: Cleveland clinic continence scores and Rockwood faecal incontinence qualify of life scale scores</td>
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<tr>
<td><strong>Study Design</strong></td>
<td>Randomised controlled trial</td>
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</tbody>
</table>
Authors’ summary

- No added value of early biofeedback physiotherapy
- Compliance an issue: time, asymptomatic
- Biofeedback for symptomatic women at standard 3 month follow up
Take home messages

- Understand the real anatomy of perineum
- Accurately identify injury
- Rectal examination is mandatory
- Repair IAS injury
- Restore full anatomical length
- Training in prevention and repair
Woman With OASIS

Obstetrician

Midwife

Physiotherapist

Psychiatrist

Perineal Clinic

Obstetrician

Urogynaecologist

Nurse

Colorectal surgeon

Solicitor

Urogynaecologist

Nurse