Anal Sphincter Injuries: Acute Management

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Groote Schuur Hospital
Colorectal Surgeons

Gynaecologists
Gynaecologists

Colorectal Surgeon
Do you routinely perform an episiotomy when doing an instrumental delivery?

- Yes 5 (27%)
- No 13 (73%)
## Audit

### Who supervised your first episiotomy repair?

<table>
<thead>
<tr>
<th>Role</th>
<th>Count</th>
<th>Percentage</th>
</tr>
</thead>
<tbody>
<tr>
<td>Midwife</td>
<td>10</td>
<td>(55%)</td>
</tr>
<tr>
<td>MO</td>
<td>2</td>
<td>(11%)</td>
</tr>
<tr>
<td>Registrar</td>
<td>5</td>
<td>(27%)</td>
</tr>
<tr>
<td>Consultant</td>
<td>1</td>
<td>(6%)</td>
</tr>
</tbody>
</table>
Who supervised your first third degree tear repair?

- Midwife 1 (6%)
- MO 1 (6%)
- Registrar 14 (77%)
- Consultant 2 (11%)
Audit

- **Classification**
  - 3A & 3B: 5 (28%)
  - 3A, 3B, 3C: 6 (33%)
  - 3A, 3B, 3C, 3D: 3 (17%)
  - Don’t know: 3 (17%)
Background

- Diagnosed clinically at time of delivery in 0.6-9% of cases

- Two-thirds of registrars and consultants in the UK have expressed a “lack of” or “unsatisfactory” training in the management of OASI.

Fernando et al. BMC Health Services Research. 2002, 2:9
Most common causes of complaint and litigation arising in labour ward practice

Fetal death or injury as a consequence of:

- Mismanagement of labour
- Failure to recognise CTG abnormalities and act on them
- Mismanagement of operative vaginal delivery or shoulder dystocia

Maternal injury as a consequence of

- Failure to recognise injury to the anal sphincter and repair it
- Rupture of the uterus

Clements RV. Risk Management and Litigation in Obstetrics and Gynaecology 2001 p240
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Nomenclature

Every obstetric text in RCOG library (Sultan and Thakar)

- 17% no mention of classification
- 22% classified anal sphincter injury as second degree

BMC Health Services Research (2002)

- 672 practicing Consultant obstetricians
- 33% classified Complete or Partial external sphincter tear as “Second Degree”
Classification of Perineal Lacerations

- **First Degree**
  - Laceration of the vaginal epithelium or perineal skin only

- **Second Degree**
  - Involvement of the vaginal epithelium, perineal skin and muscles but not the anal sphincter
Classification of Perineal Lacerations

➢ Third degree

- Disruption of the vaginal epithelium, perineal skin, perineal body & internal anal sphincter (IAS) &/or external anal sphincter (EAS)

  3a: <50% EAS torn
  3b: >50% EAS torn
  3c: IAS torn
Classification of Perineal Lacerations

- Fourth Degree
  - Extension into the rectal mucosa
  - Rectal mucosal tear (buttonhole) without the involvement of the anal sphincter is rare & not included in this classification
Risk Factors for Sphincter Injury

- Forceps
- Primiparity
- Large fetus (>4kg)
- Shoulder dystocia
- Persistent OP position
Risk Factors for Sphincter Injury
Risk Factors for Sphincter Injury

N = 5044 SVD

4.2% sphincter defect

**Univariate analysis**

- low parity
- prolonged 1\textsuperscript{st} and 2\textsuperscript{nd} stage
- high birth weight
- episiotomy
- forceps

Risk Factors for Sphincter Injury

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- high birth weight
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- forceps

**Multivariate analysis**

Risk Factors for Sphincter Injury

Occipitoposterior Position

n = 393
Occipitoanterior – OASI 22%
Occipitoposterior – OASI 46%
Odds ratio – 2.5 (1.4 – 4.7)

Logistic Regression Analysis
BMI  race  nulliparity
second stage length
episiotomy  Birth weight  HC

OP four X higher chance of sphincter injury

Recognition of Obstetric Anal Sphincter Injury (OASI)

All Vaginal deliveries
- Systematic examination of perineum and vagina to assess severity of trauma
- Rectal examination if episiotomy or any tear

Instrumental Delivery or Extensive Perineal Injury (esp those that extend to anal verge)
- Examined by an experienced obstetrician trained in the recognition and management of perineal tears

RCOG guidelines July 2001
Technique of anal sphincter closure

1. End-to-end

2. Overlap
## Technique of repair OASI

Considerable variation in management

<table>
<thead>
<tr>
<th></th>
<th>Coloproctologist</th>
<th>Obstetric Consultants</th>
<th>Obstetric Trainees</th>
</tr>
</thead>
<tbody>
<tr>
<td>End to end</td>
<td>11.1%</td>
<td>47%</td>
<td>35%</td>
</tr>
<tr>
<td>Overlap</td>
<td>88%</td>
<td>50%</td>
<td>55%</td>
</tr>
<tr>
<td>Don’t know</td>
<td></td>
<td>2.1%</td>
<td>8.8%</td>
</tr>
</tbody>
</table>

Fernando et al. BMC Health Services Research. 2002, 2:9
Technique of repair OASI

Up to 1964 – 5 studies (n= 2000) no faecal incontinence!!!!

Sultan and Thakar (2002)

- 20 studies since 1982
- 37% (15-59%) mean prevalence of incontinence following primary repair

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Technique of repair OASI

Overlap Technique

- Favoured by colorectal surgeons
- 21 Prospective Studies
- **Secondary** repair 74-100% success

- Poorer 5 year outcomes – of about 50%

Jorge and Wexner. Dis Colon Rectum 1993;36:77-97
Technique of repair OASI

Overlap Technique for Primary Repair

- Pilot study (matched controls)
- Described additional repair of IAS
- Reduction in incontinence from 41% to 8%
- Possibly operator influence???

Technique of repair OASI

Overlap Technique for Primary Repair

- RCT (Fitzpatrick et al)
- 112 primiparas
- No difference between groups
- No separate IAS repair

Technique of repair OASI: Which Method?

Fernando et al.

- RCT, n=64, 1 year follow up
- Only 3b, 3c, 4\textsuperscript{th} degree tears

<table>
<thead>
<tr>
<th></th>
<th>End-to-end</th>
<th>Overlap</th>
</tr>
</thead>
<tbody>
<tr>
<td>Faecal Incontinence</td>
<td>24%</td>
<td>0</td>
</tr>
<tr>
<td>Faecal Urgency</td>
<td>32%</td>
<td>3.7%</td>
</tr>
<tr>
<td>Dyspareunia</td>
<td>Equal</td>
<td>Equal</td>
</tr>
<tr>
<td>QOL</td>
<td>Equal</td>
<td>Equal</td>
</tr>
<tr>
<td>Perineal Pain</td>
<td>20%</td>
<td>0%</td>
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</tbody>
</table>
Methods of repair for obstetric anal sphincter injury

R Fernando, AH Sultan, C Kettle, R Thakar, S Radley

Cochrane Database of Systematic Reviews 2006 Issue 3 (Status: New)
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Date of Most Recent Substantive Amendment: 7 April 2006

Objectives
To compare the effectiveness of overlap repair versus end-to-end repair following OASIS in reducing subsequent anal incontinence, perineal pain, dyspareunia and improving quality of life.
Main results
Three eligible trials, of grade A quality, involving 279 women, were included. There was considerable heterogeneity in the outcome measures, time points and reported results. Meta-analyses showed that there was no statistically significant difference in perineal pain (relative risk (RR) 0.08, 95% confidence interval (CI) 0.00 to 1.45, one trial, 52 women), dyspareunia (RR 0.62, 95% CI 0.11 to 3.39, one trial, 52 women), flatus incontinence (RR 0.93, 95% CI 0.26 to 3.31, one trial, 52 women) and faecal incontinence (RR 0.07, 95% CI 0.00 to 1.21, one trial, 52 women) between the two repair techniques at 12 months but showed a statistically significantly lower incidence in faecal urgency (RR 0.12, 95% CI 0.02 to 0.86, one trial, 52 women) and lower anal incontinence score (weighted mean difference -1.70, 95% CI -3.03 to -0.37) in the overlap group. Overlap technique was also associated with a statistically significant lower risk of deterioration of anal incontinence symptoms over 12 months (RR 0.26, 95% CI 0.09 to 0.79, one trial, 41 women). There was no significant difference in quality of life
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Authors' conclusions
The limited data available show that compared to immediate primary end-to-end repair of OASIS, early primary overlap repair appears to be associated with lower risks for faecal urgency and anal incontinence symptoms. As the experience of the surgeon is not addressed in the three studies reviewed, it would be inappropriate to recommend one type of repair in favour of another.
Technique of repair OASI

GUIDELINES (Sultan et al)

1. Performed by an experienced operator
2. Operating theatre
3. GA or Spinal
4. Grade injury
5. Anal epithelium repaired with Vicryl 3/0 or Vicryl rapide
6. Sphincters with 3/0 PDS
7. IAS end to end

Technique of repair OASI:

GUIDELINES (Sultan et al)
8. External Sphincter

*End to End*
Grasp ends with Allis forceps
Figure 8
End-to-end repair
Technique of repair OASI

GUIDELINES (Sultan et al)
8. External Sphincter

Overlap
Grasp ends with Allis forceps
Mobilisation and dissection from ischcio-anal fat laterally
Full width of muscle identified
Double breast overlap technique

Overlap repair
Technique of repair OASI

GUIDELINES (Sultan et al)

9. Rectovaginal exam

10. IV antibiotics

11. Foley catheter – 24 hrs

12. Detailed notes

13. Laxatives

14. EXPLAIN & DEBRIEF

RCT: Diagnosis of anal sphincter tears using U/S

N = 752 (not clinically evident sphincter injury)

Randomised to scan/no scan
With u/s – 5.6% injury

Outcome = faecal incontinence
@ 3/12
- ultrasound group 3.3%
- no ultrasound group 8.7%
(p = 0.002)

@ 1 year
- ultrasound group 3.2%
- no ultrasound group 6.7%
(p = 0.03)

NNT = 29

Postnatal Care

**RCT: Laxatives vs Laxatives + Bulking agents (n=147)**

- Lactulose alone or Lactulose + Fybogel
- Similar pain score
- Incontinence in immediate postnatal period:
  - One agent: 18%
  - Two agents: 32%  \( p=0.03 \)

Eogan et al. BJOG 2007;114:736-740
“The bottom line”
Who

Should all acute tears be repaired by colorectal surgeons?

- Not shown to have better outcomes
- *Fernando et al*
  - 60% had never performed an acute tear
  - 30% had performed <5 in a year
  - Only 19% felt that they should be involved in the acute management of OASI

Fernando et al. BMC Health Services Research. 2002, 2:9
Occult anal sphincter injury and previous repair

- Prospective cohort study
- 100 women with vaginal delivery of 1\textsuperscript{st} child
- Incontinence of flatus & stool at 3 & 30 months

<table>
<thead>
<tr>
<th>ASD</th>
<th>2\textsuperscript{nd} delivery</th>
<th>Incontinent (%)</th>
<th>RR (95% CI)</th>
</tr>
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<tbody>
<tr>
<td>No</td>
<td>No</td>
<td>1/129 (3)</td>
<td>1</td>
</tr>
<tr>
<td>No</td>
<td>Yes</td>
<td>1/10(10)</td>
<td>2.9</td>
</tr>
<tr>
<td>Yes</td>
<td>No</td>
<td>4/25 (16)</td>
<td>4.6</td>
</tr>
<tr>
<td>Yes</td>
<td>Yes</td>
<td>5/13 (38)</td>
<td>11.2</td>
</tr>
</tbody>
</table>

Faltin et al (2001)
Thank you