South Australian Perinatal Practice Guidelines

Third and fourth degree tear management

Literature Review

- Obstetric anal sphincter injury encompasses both third and fourth degree perineal tears and can occur with an intact perineum
- In South Australia in 2009, third and fourth degree tears occurred in 3.2 % (n=422) of vaginal births (Chan et al. 2011)
- Prospective studies using postpartum anal endoanal sonography suggest that almost one third of primiparous women may sustain occult anal sphincter injury following vaginal birth (Sultan et al. 1993; RCOG 2007; Thakar and Sultan 2003)
- Recent randomised controlled studies of external anal sphincter (EAS) repair have reported low incidences of anal incontinence symptoms (e.g. loss of control over flatus, faecal urgency and staining) with 60 – 80 % of women asymptomatic at 12 months (RCOG 2007)
- Damage to the innervation of the sphincter muscles and pelvic floor may be related to pudendal nerve damage (Sultan et al. 1993; Fitzpatrick and O'Herlihy 2001)

Classification of tears

First Degree:

- Injury to the perineal skin only

Second Degree:

- Injury to the perineum extending into the perineal muscles but not the anal sphincter (either external [EAS] or internal anal sphincter[IAS])

Third degree:

- Injury to the perineum involving the anal sphincter complex:
  - 3a: Less than 50 % of EAS thickness torn
  - 3b: More than 50 % of EAS thickness torn
  - 3c: Both EAS and IAS torn (RCOG 2007)

Fourth Degree:

- Disruption of the anal sphincter complex (EAS and IAS) and anal epithelium (RCOG 2007). Occasionally there can be an anal or rectal mucosa tear behind an intact sphincter. Rectal examination before repair is recommended (Signorello et al. 2000)

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Risk Factors

- First vaginal birth
- Instrumental delivery
- Prolonged second stage
- Macrosomia > 4 kg
- Midline episiotomy
- Occipitoposterior position at delivery
- Induction of labour
- Epidural analgesia
- Shoulder dystocia

- Most of the above risk factors cannot readily be used to prevent or predict the occurrence of a third or fourth degree tear (RCOG 2007)
- Damage to the pudendal nerves is cumulative in successive vaginal births (Fynes et al. 1999; Fynes. 2001; Fitzpatrick and O'Herlihy 2001)

Management of Repair

- All women should be examined following vaginal birth to assess the degree of vaginal, perineal or rectal injury
- All sphincter damage must be identified, documented and treated appropriately
- This includes:
    - partial sphincter tears
    - sphincter damage with an intact perineum
    - "buttonhole" rectal mucosa tears
- Accurate diagnosis will mean that these women will have the best chance of normal anal function in years to come

Diagnosis of third and fourth degree tear

All women delivering vaginally should have:

- Informed verbal consent explaining the need for thorough examination of the vagina, vulva and perineum and why a per rectum examination may be required
- Good exposure and good lighting
- Good analgesia
- Vulval and vaginal examination
- The normal pattern of peri-anal rugae confirmed
- Rectal examination for all episiotomies or if tear extending to anal verge
- Direct visualisation of sphincter with digit in rectum
- Palpation of sphincter with digit in rectum and pill rolling action with thumb on sphincter

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Recommended method for repair

- Third and fourth degree repairs should be undertaken by an obstetrician or a registrar trained to repair third and fourth degree tears after discussion with a consultant
- 3a tears may be repaired in labour and delivery if there is adequate analgesia
- All 3 b and c and fourth degree tear repairs should be carried out in theatre with adequate regional anaesthesia to facilitate adequate analgesia, good visualisation and relaxation of sphincter muscles

Recommended antibiotic cover

- At the time of repair, a single IV dose of Ticarcillin-clavulanate 3.1g
- If Ticarcillin-clavulanate is not available, give single IV doses of both Cephazolin 1 gram and Metronidazole 500 mg

Allergy to penicillin

- Single IV doses of both Lincomycin 600 mg and Gentamicin 5 mg / kg

Repair technique

- Perform a repeat detailed assessment of the degree of vaginal / perineal / rectal injury under anaesthesia
- Ends of EAS should be mobilised by sharp and blunt dissection to facilitate a tension free repair
- When repairing the EAS, use either monofilament sutures such as 2-0 polydioxanone (PDS or Maxon) (DON'T USE Vicryl)
- For repair of complete tear of the EAS, either an overlapping or end-to-end (approximation) method can be used. Overlapping repair is preferred by most Obstetric Consultants specialising in the management of anal sphincter injury and Colorectal Surgeons; however, there is no level I evidence to support this (Thakar, Sultan 2003)
- Where the IAS can be identified, it is advisable to repair separately with interrupted sutures. When repairing the IAS, use fine suture size such as 3-0 PDS® and 2-0 Vicryl® (associated with less irritation and discomfort)
- 3a tears can only be repaired using an end-to-end repair
- Bury surgical knots beneath the superficial perineal muscles by performing a standard perineal repair to prevent knot migration to the skin
- Perform a rectal examination on completion to ensure the repair is intact
- Document the procedure in case notes and arrange postpartum follow up

Role of colostomy

- There is no clear consensus amongst colorectal surgeons on who requires Colostomy and no reliable data to base a decision on
- A Colostomy is not required for management of 3a, 3b and straightforward 3c tears
- A Colostomy is usually indicated with large 4th degree tears, especially when the tear extends above the levator muscles, or where other risk factors for fistula exist
- Consult with a colorectal surgeon regarding the need for a colostomy

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Postpartum Management

Bladder management

- On average, bladder sensation takes between 6 to 7 hours to return after a vaginal birth with regional anaesthesia (Foona et al. 2010)
- In cases of 3rd or 4th degree tear, severe perineal discomfort is known to cause urinary retention with a delay of up to 12 hours before bladder sensation returns (Sultan and Thakar 2009).
- Urinary catheterisation should occur following 3rd and 4th degree repair in the immediate postpartum period to minimise urinary retention. The optimum time for catheterisation after birth is uncertain. Careful attention should be paid to voiding after removal of the catheter, particularly in the first six hours after catheter removal (see PPG 'postpartum bladder dysfunction')

Antibiotics

- The use of broad-spectrum antibiotic cover is recommended after obstetric anal sphincter repair to reduce the incidence of postoperative infections and wound dehiscence (RCOG 2007)
- Commence oral Amoxycillin 500 mg and Clavulanic acid 125 mg (e.g. Augmentin Duo®) 12 hourly with meals over 5 days
- If allergic to penicillin, use both
    - oral Ciprofloxacin 250 mg 12 hourly for 5 days
    - oral Clindamycin 450mg 8 hourly for 5 days

Analgesia and other measures

- Use a multimodal approach to minimise the use of opioid medication, i.e. oxycodone and codeine containing analgesics, as they may cause constipation
- Administer oral paracetamol 1 g every 6 hours as required
- If there are no contra-indications, administer diclofenac (Voltaren®) 100 mg suppository per rectum at the end of the procedure while the patient is in the lithotomy position. Subsequent doses can be administered orally (i.e. 50 mg TDS), commencing no sooner than ten hours after administration of the intra-operative dose
- Ice packs and resting supine / prone for 10 - 20 minutes every 2 – 3 hours over the first week may decrease symptoms of pelvic floor fatigue (e.g. swelling, pain and perineal descent)
- Bulking agents and stool softeners (e.g. Fybogel® 1 sachet three times a day, Lactulose® 20 mL twice daily, and Coloxyl® 120 mg 1-2 nocte in addition as required) are recommended. Commence after 24 hours and continue for two weeks before weaning off. Educate the woman about the need for adequate fluid intake when using bulking agents
- In patient referral to a continence health professional (e.g. continence nurse advisor / practitioner or physiotherapist) for advice about defecation techniques, pelvic floor care and ongoing support
- Before discharge, the woman must be fully informed about the nature of her injury, associated risks (see Table 1 below) and benefits of follow-up

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Follow – up (at 6 weeks)

- A third or fourth degree tear is a significant peri partum event. Postpartum, follow-up by a consultant with an interest in management of third and fourth degree tears and a continence health professional referral is required. If the woman is experiencing incontinence or pain at follow-up, a colorectal opinion and investigation (endoanal ultrasound) may be necessary
- Establish the following:
    - Control of bowel motions
    - Control of flatus
    - Faecal urgency
    - Offensive vaginal discharge (this may suggest a fistula)
    - Confirm urinary continence
    - Assess pelvic floor muscles
    - Assess ongoing perineal discomfort
- The mode of subsequent delivery should be discussed in the context of current symptoms or findings of postpartum sonography

Recommendations about future pregnancies

- Women who are asymptomatic may consider a vaginal birth
- Advise the woman that there is no evidence to support the role of prophylactic episiotomy in subsequent pregnancies
- Recommend LSCS:
    - Symptomatic
    - Previous 4th degree tear
    - Delayed surgical correction of sphincter damage
    - Other risk factor for sphincter damage (e.g. big baby, Occipito Posterior position)
    - Woman's request
- It is appropriate to warn women that the cumulative effect of ageing, menopause and progression of neuropathy on long term sphincter weakness by the fifth and sixth decade may result in the new onset of symptoms for which treatment is available (Sultan et al. 1993)

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Table 1: Complications associated with 3rd and 4th degree tears[14]

Serious risks	
> Incontinence of faeces / flatus	Common
> Need for LSCS in future pregnancies due to persistent symptoms of incontinence or abnormal anal sphincter structure or function	Uncommon
> Haematoma	Rare
> Consequences of failure of the repair requiring the need for further interventions e.g. secondary repair or sacral nerve stimulation	Rare
> Rectovaginal fistula	Very rare
Frequent risks	
> Fear, difficulty and discomfort in passing stools in the immediate postpartum period > Migration of suture material requiring removal > Granulation tissue formation	
> Faecal urgency	26/100 Very common
> Perineal pain and dyspareunia	9/100 Common
> Wound infection	8/100 Common
> Urinary infection	

Adapted from RCOG Consent advice No. 9, repair of third and fourth degree perineal tears following childbirth[14]

RCOG: Presenting information on risk[15]

Term	Equivalent numerical ratio
Very common	1/1 to 1/10
Common	1/10 to 1/100
Uncommon	1/100 to 1/1,000
Rare	1/1,000 to 1/10,000
Very rare	Less than 1/10,000

Based on the RCOG Clinical Governance Advice, Presenting information on Risk[15]

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15. Royal College of Obstetricians and Gynaecologists. Presenting information on risk. Clinical Governance advice No. 7. London: RCOG; 2008. Available from URL: http://www.rcog.org.uk/files/rcog-corp/CGA7-15072010.pdf

Useful resources

- Royal College of Obstetrics and Gynaecology Patient information Third and fourth degree tears. Available from URL: http://www.rcog.org.uk/files/rcog-corp/Third%20or%20Fourth%20degree%20tears.pdf
- Royal Women's Hospital. Consumer information. Anal sphincter tears in childbirth. Available from URL: http://www.thewomens.org.au/uploads/downloads/HealthInformation/FactSheets/English/AnalSphincterTearsChildbirth.pdf

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Abbreviations

et al.	And others
EAS	External anal sphincter
e.g.	For example
g	Gram(s)
IAS	Internal anal sphincter
IV	Intravenous
mg	Milligrams
n	Number
%	Percentage
®	Registered trademark
RCOG	Royal College of Obstetricians and Gynaecologists

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