Traumatic anal sphincter injury: repair now or later

By

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No disclosure

Types of sphincter injury

❖ **Obstetric injury (OASIS):**

- The most common.
- 4% - 10% of all vaginal deliveries.
- Occult damage may be present in 21% to 35%.

❖ **Non obstetric injury:**

- Penetrating injury is uncommon.
- Following anorectal surgeries e.g: fistulotomy and sphincterotomy.

The real prevalence of AI (anal incontinence) related to OASIS can likewise be undervalued.

Types of sphincter injury…cont

- OASIs are associated with significant perineal pain, sexual dysfunction and AI.

- About 90% of females suffer from some degree of perineal tear after vaginal birth.

Types of sphincter injury…cont

- The beginning of AI may appear immediately or many years after delivery

- Anal incontinence may exclusively show up in advanced age, while the aging process adds to the delivery insult.

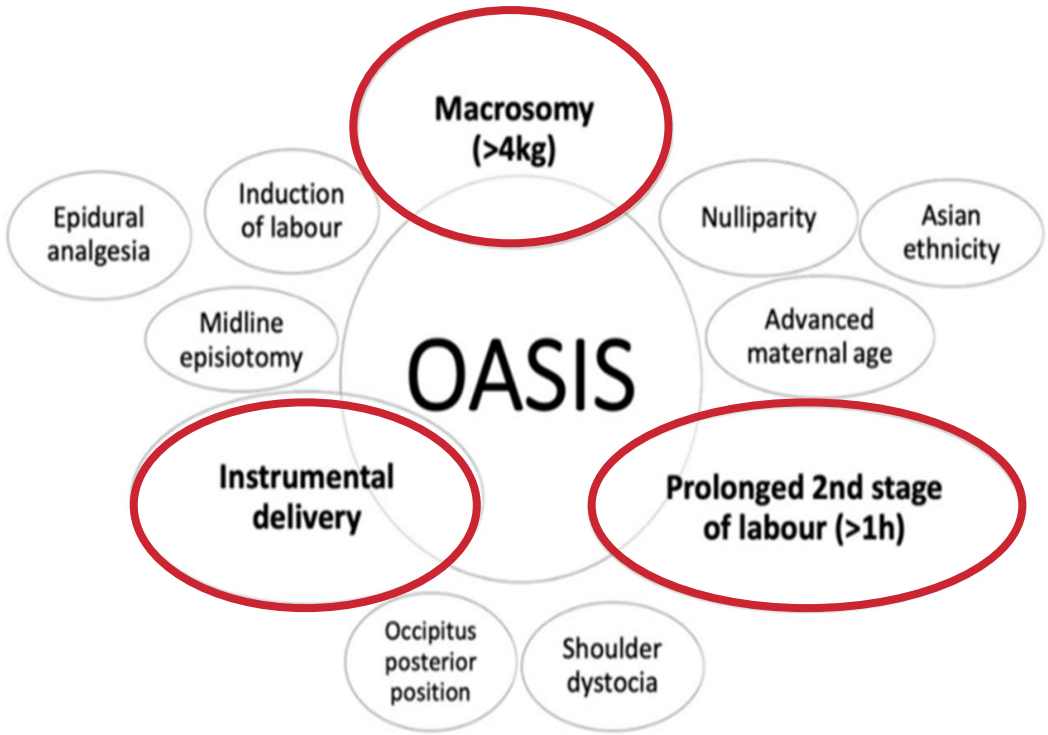


Figure 1. Acknowledged risk factors for the development of OASIS.

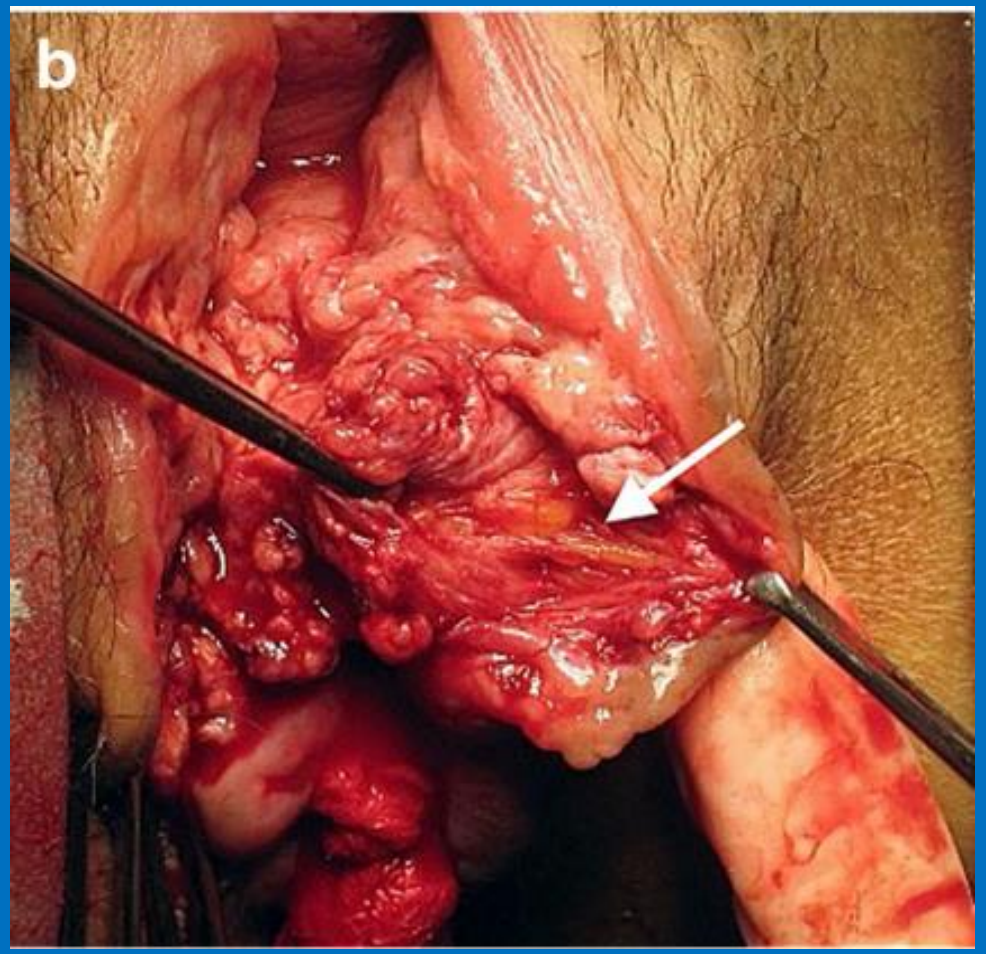


Table 2. Classification of OASIS	
First degree	Injury to perineal skin only
Second degree	Injury to perineum involving perineal muscles but not involving the anal sphincter
Third degree	Injury to perineum involving the anal sphincter complex:
3a	Less than 50% of EAS thickness torn
3b	More than 50% of EAS thickness torn
3c	Both EAS and IAS torn
Fourth degree	Injury to perineum involving the anal sphincter complex (EAS and IAS) and anal epithelium

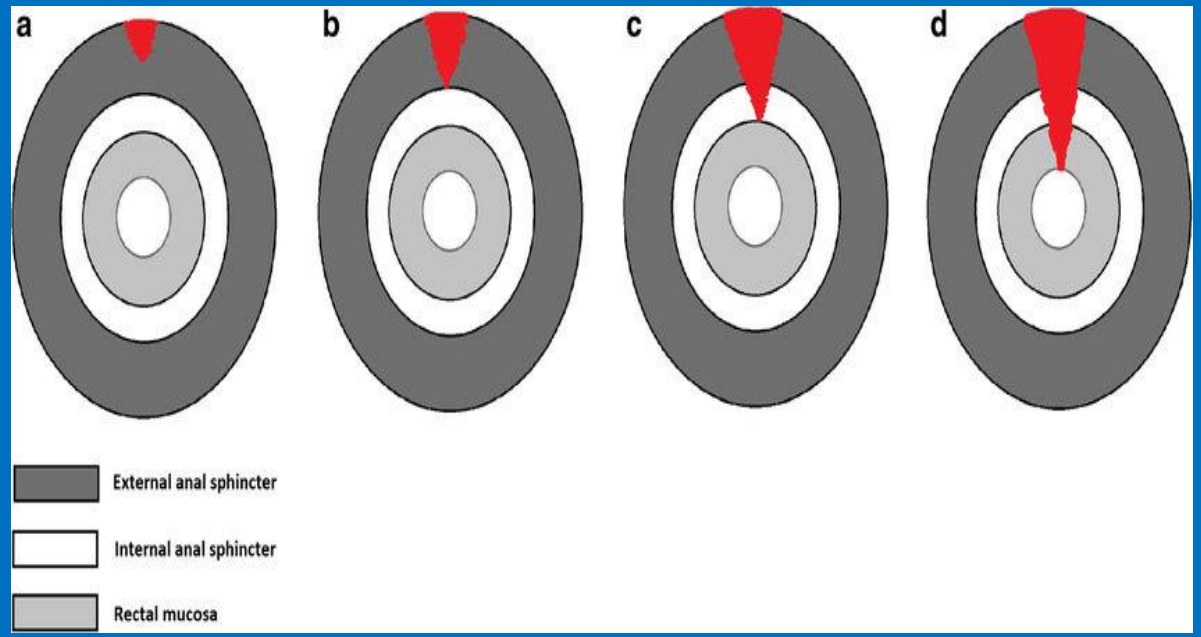
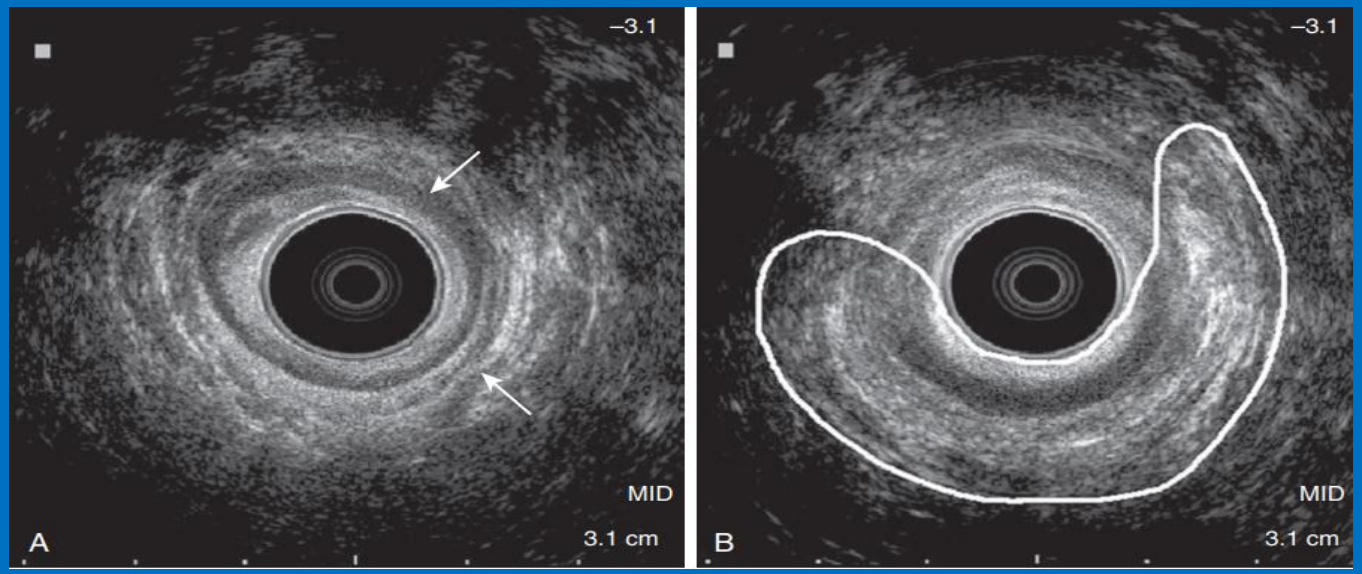


Table 1. Comparison between the available diagnostic tools for the assessment of OASIS.

Diagnostic Test	Target	Sensitivity	Accuracy	Reproducibility	Non-Op. Dependence	Intraoperative Use
TRADITIONAL						
EAUS	Morphology	++	++	-	-	+
Anorectal Manometry	Function	+	+	+	+	-
MRI	Morphology	++	++	++	++	-
EXPERIMENTAL						
TPUS	Morphology	+	+	-	-	+
Impedance Spectroscopy	Morphology Function	+	+	++	++	-



Sphincter repair

- **non obstetric trauma:**

- Careful evaluation and treatment priorities.

- When pelvic stability will allow it, severe perineal wounds are best assessed in the operating room in lithotomy position.

- When a significant rectal injury is identified, fecal diversion is indicated

non obstetric trauma,,,,,cont.

- Sharp debridement of devitalized tissues and copious irrigation is performed.

- Definitive reconstructive surgery is deferred.

- **Obstetric trauma:**

- Traditionally OASIS are repaired by obstetricians.
- However, 25–59% of women have persistent symptoms despite primary repair.
- Poor understanding of perineal anatomy and inadequate experience are possible reasons for the high incidence of persistent symptoms.

Primary repair

VS

delayed repair

End to end sphincteroplasty

VS

overlap sphincteroplasty

- The primary repair continues to be debated.
- End-to-end is the most commonly used primary repair , while a few studies have advocated an overlapping technique.

- Furthermore, Sultan et al., reported that the overlap technique, when compared with end-to-end technique, reduced AI from 40% to 8% and persistent anal sphincter defects from 85% to 15%.

Dudding et al., (2008) reported that sphincteroplasty by end-to-end repair is associated with a high failure rate

REVIEW

Obstetric Anal Sphincter Injury

Incidence, Risk Factors, and Management

Dudding, Thomas C. MRCS; Vaizey, Carolynne J. MD, FRCS, FCS(SA); Kamm, Michael A. MD, FRCP, FRACP

Author Information

Annals of Surgery 247(2):p 224-237, February 2008. | *DOI:* 10.1097/SLA.0b013e318142cdf4

A 2013 meta-analysis did not observe significant differences in the overall rate of perineal pain, dyspareunia, flatus incontinence, and FI between the two repair techniques; the overlap group showed significantly lower relative risk of FI at 12 months compared to the end-to-end group

Cochrane Library

Cochrane Database of Systematic Reviews

Methods of repair for obstetric anal sphincter injury (Review)

Fernando RJ, Sultan AH, Kettle C, Thakar R

Primary repair

- Commonly performed by a gynecologist.
- Usually by end-to-end repair
- Failure to recognize the extent of the trauma and to achieve complete repair can lead to long term sequelae such as FI or RVF.

Primary repair,,,,,,,cont.

- Tissue is often edematous and bleeding post-delivery making identification of muscle and repair difficult.
- Partial damage to the anal sphincter can have as much impact on future continence as complete disruption

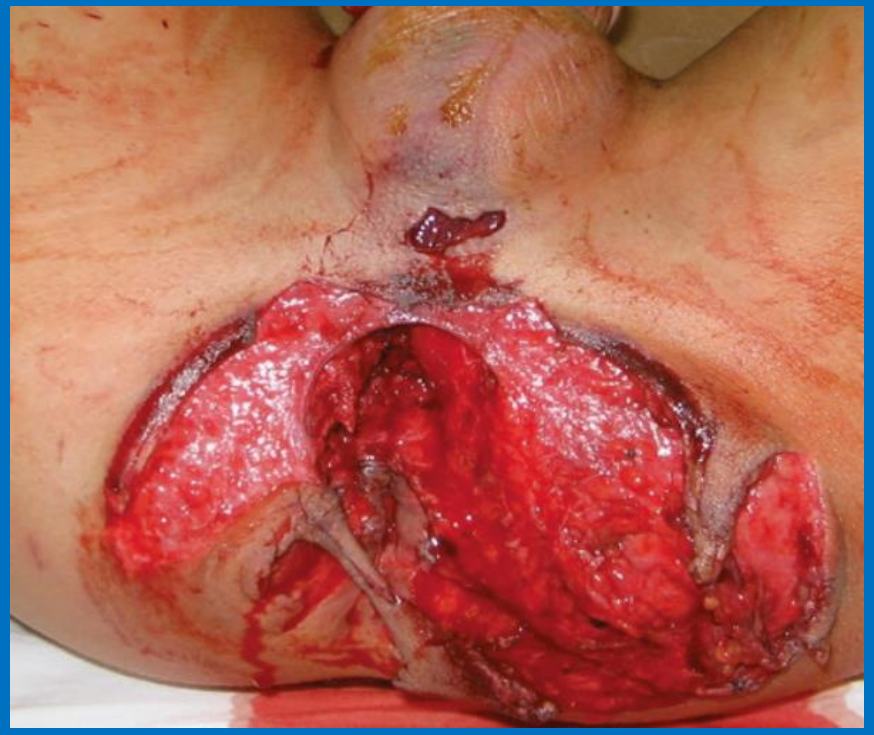
Primary repair,,,,,,,cont.

- The incidence of perineal wound dehiscence after a 3 rd- or 4 th-degree of OASIs has been reported to occur in up to 10% of cases
- Known complications of primary repair include infections with abscess formation and wound breakdown, both primary to RVF and AI.

when the responsible physician feels uncomfortable performing the procedure, it is better to delay the operation until the adequate expertise is in place or up to 12 hours with no adverse effect on anal continence status 1 year after delivery

Polytraumatized patient

- A review of U.S. Military registries from 2003 to 2011, Glasgow et al., advocated that attempts at early anoplasty in polytrauma patients should only be limited to marking of retracted sphincter ends for future identification, as initial anal repairs did not alter the need for colostomy.



Polytraumatized patient,,,,cont.

- In the setting of isolated sphincter defects of the EAS, overlapping sphincteroplasty appears to be the preferred modality of repair

Delayed repair

- Commonly performed by a Colo proctologist.
- Usually by overlapping repair.
- Good short-term results of overlapping sphincteroplasty have been published with complete anal continence reported in 50–90% of patients. However, long-term results demonstrate decreased effectiveness of the repair over time.

Pescatori in a systematic review in 2014 reported that, The short-term results after delayed sphincter repair are good (74% of improved continence at 3 months) but the long-term outcome is not satisfactory, decreasing to 48% at 80 months.

Table 1. Results for overlapping sphincteroplasty: long term (<5 years)

Author	Year	No. of patients	Mean age	Positive outcome (%)
Morren *et al.* [52]	2001	55	39	56
Elton and Stoodley [53]	2002	20	NR	80
Tjandra *et al.* [54]	2003	23	45	74
Pfeifer [55]	2004	41	34	73
Martinez *et al.* [56]	2006	16	NR	87
Barisic *et al.* [38]	2006	65	NR	74

NR = not reported.
(Modified by Pelvic Floor Disorders. Santoro GA, Wieczorek AP, Bartram CI (eds.). Springer 2010)

Table 2. Results for overlapping sphincteroplasty: long term (>5 years)

Author	Year	No. of patients	Mean age	Positive outcome (%)
Karoui *et al.* [57]	2000	86	NR	49
Halverson and Hull [58]	2001	71	38.5	46
Buie *et al.* [59]	2001	191	37	62
Barisic *et al.* [38]	2006	65	NR	48
Maslekar *et al.* [60]	2007	64	NR	80
Soerensen *et al.* [61]	2008	22	31	50

NR = not reported.
(Modified by Pelvic Floor Disorders. Santoro GA, Wieczorek AP, Bartram CI (eds.). Springer 2010)

- **Lamblin et al., concluded that, Overlapping repair is relatively non-invasive and effective, providing excellent short-term results for FI with a 74 % of continence at 4 years.**
- **Long-term liquid and solid fecal continence was 67 % at 5 years and 48 % at 7 years; although, the satisfaction rate was 85 %.**

Int J Colorectal Dis (2014) 29:1377–1383

Table 2 Surgical techniques and postoperative course

Surgical technique	
Overlap + PR	8 (40 %)
Overlap + MR	12 (60 %)
Associated prolapse surgery	5 (25 %)
Postoperative complications	5 (25 %)
Skin hematoma (no drainage)	1 (5 %)
Delayed skin healing	1 (5 %)
Infection	0
Pain	3 (15 %)
Postoperative rehabilitation	8 (40 %)

Data are *n* (%)
PR perineorrhaphy, *MR* myorrhaphy

Int J Colorectal Dis (2014) 29:1377–1383
DOI 10.1007/s00384-014-2005-9

ORIGINAL ARTICLE

Long-term outcome after overlapping anterior anal sphincter repair for fecal incontinence

Gery Lamblin · Paule Bouvier · Henri Damon · Philippe Chabert · Stephanie Moret · Gautier Chene · Georges Mellier

Table 3 Postoperative quality of life

Satisfaction	
Very satisfied	6 (30 %)
Satisfied	11 (55 %)
Not very satisfied	1 (5 %)
Dissatisfied	2 (10 %)
Impact on sexual life	
None	3 (15 %)
Some	7 (35 %)
Severe	10 (50 %)

Data are *n* (%)

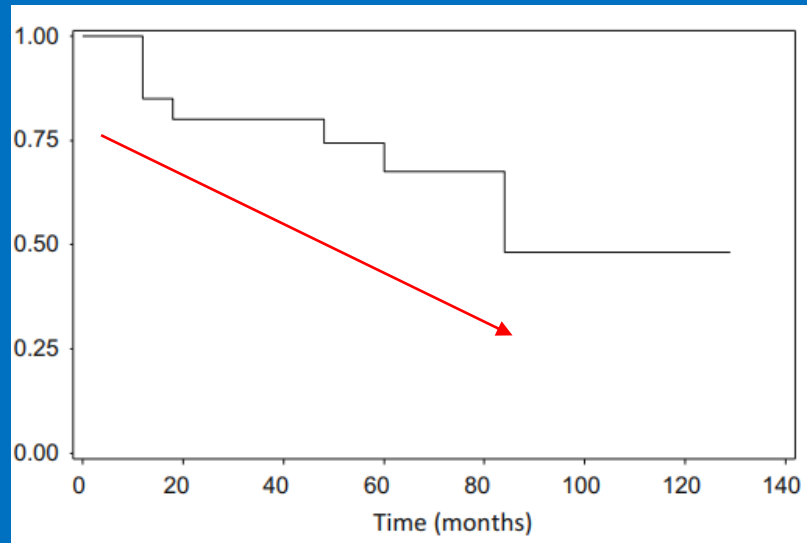
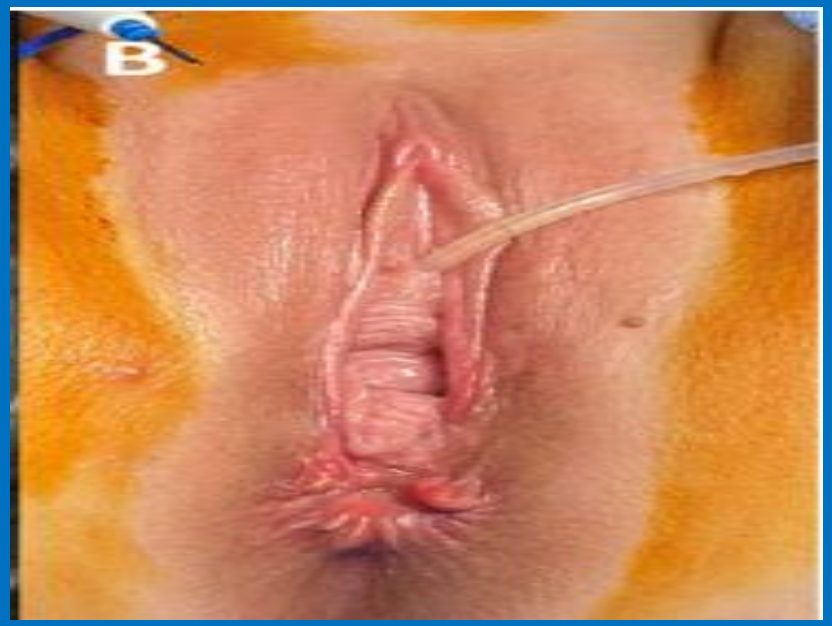


Fig. 2 Degradation of anal continence over time (Kaplan-Meier curve)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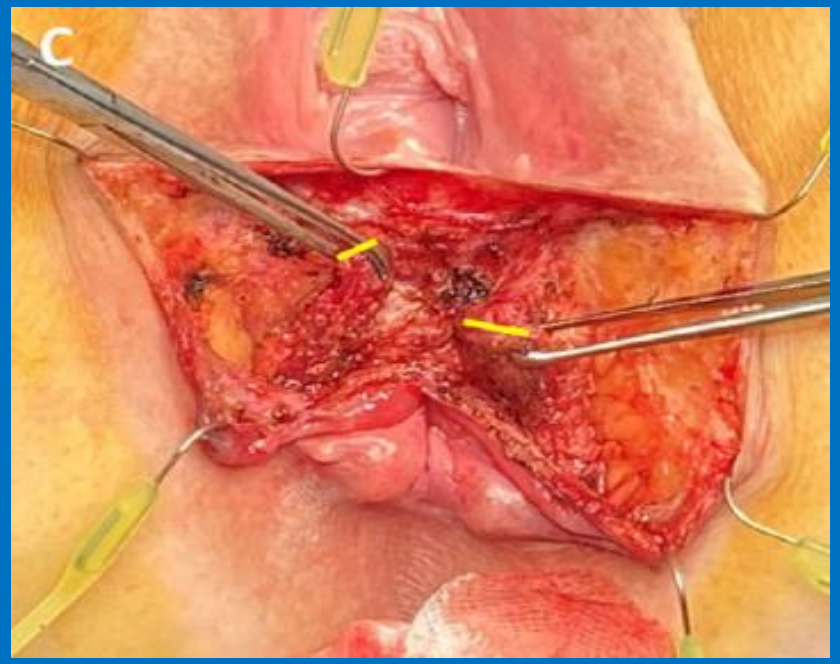
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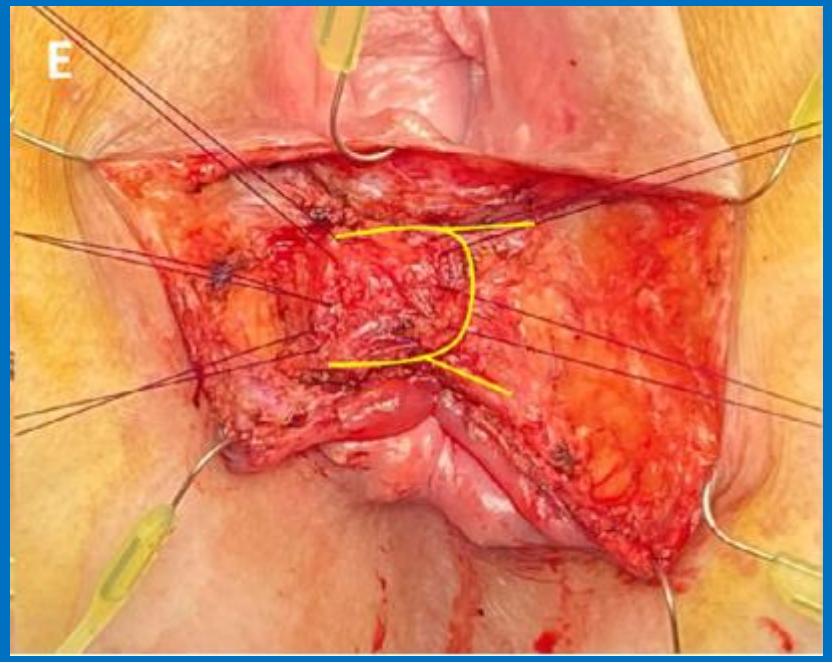
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Anal Sphincter Injury Repair

BY

Dr Radwan Torky

Conclusion

- In massive perineal trauma with pelvic fracture, diverting stoma is highly recommended then delayed repair is indicated.
- In optimal circumstances, primary repair is considered however, in cases of edema, inflammation or even absence of experience, delayed repair is the best.

- Primary repair should be attempted by an expert gynecologist, while delayed repair is better to be done by a colo proctologist after preoperative investigations.
- Patient selection is important to achieve good outcomes, and annual follow-up for the first few years postoperatively is important to ensure patients with suboptimal outcomes to get access to other treatment options.


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Thank you !!