

# Helping patients live with an Antegrade Continent Enema(ACE)

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# (M)ACE procedure

- Based on Mitrofanoff principle
- Originally in children with spina bifida (Malone, 1995)
- Now adults with
  - Faecal incontinence
  - Constipation
  - Neurogenic bowel



# Procedure

- Laparoscopic/Open
- Appendix reversed and tunnelled
- Conduit
  - Ileum
  - Caecal tube
- Stoma site
  - RIF
  - Umbilical stoma
  - LIF if also Mitrofanoff



# Appendix ACE

Figure 59.3

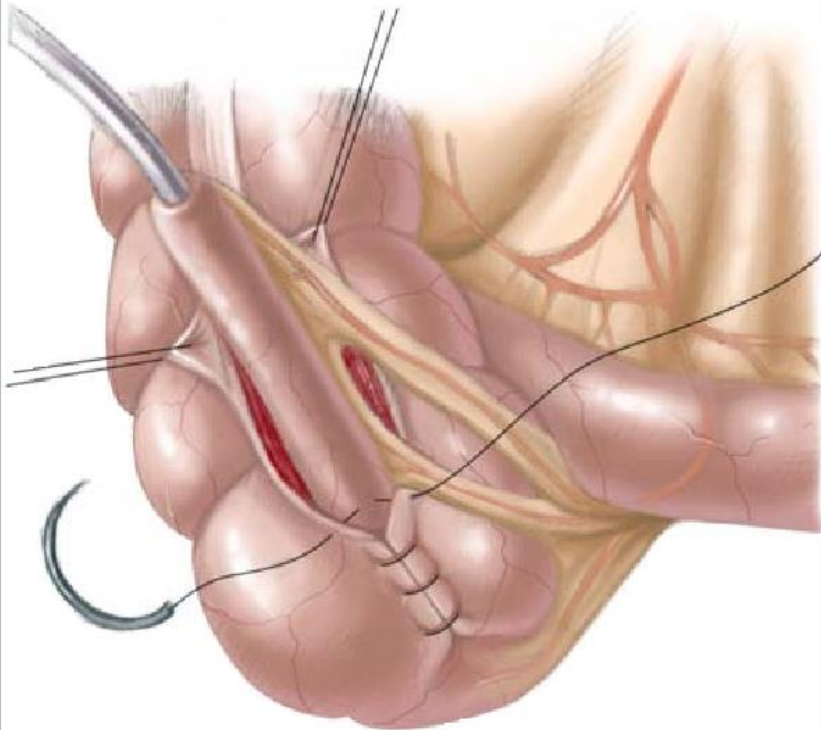
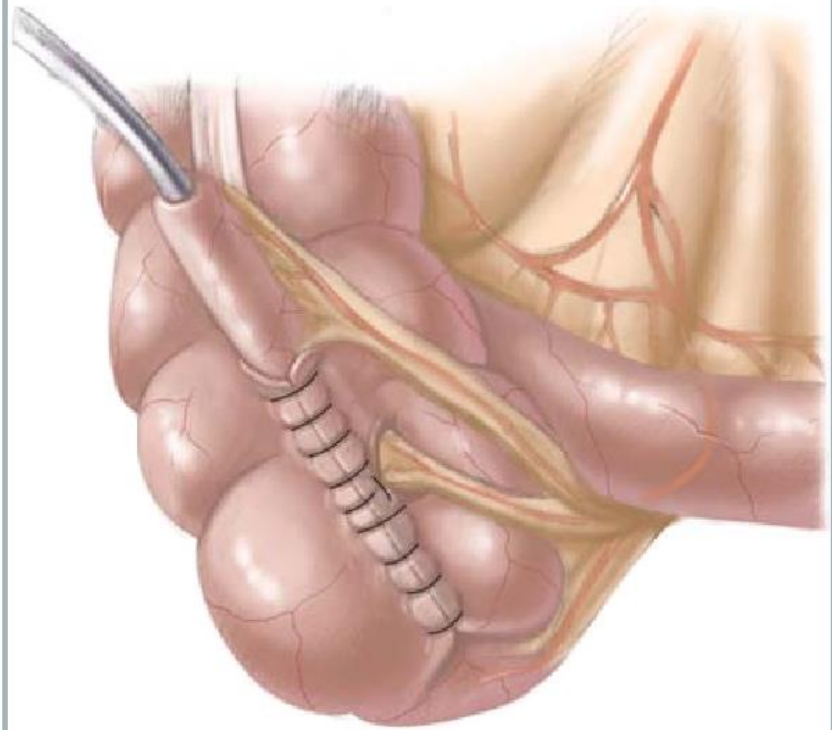
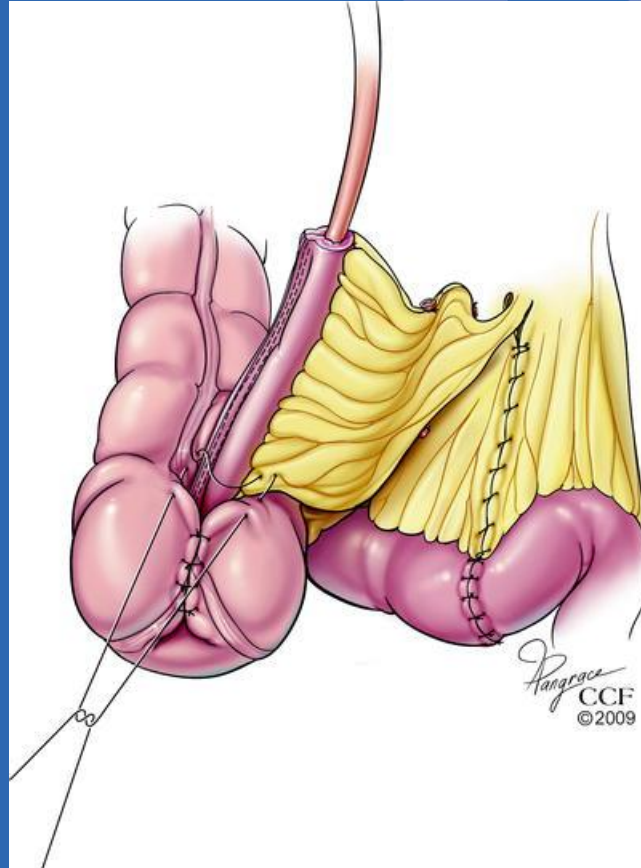
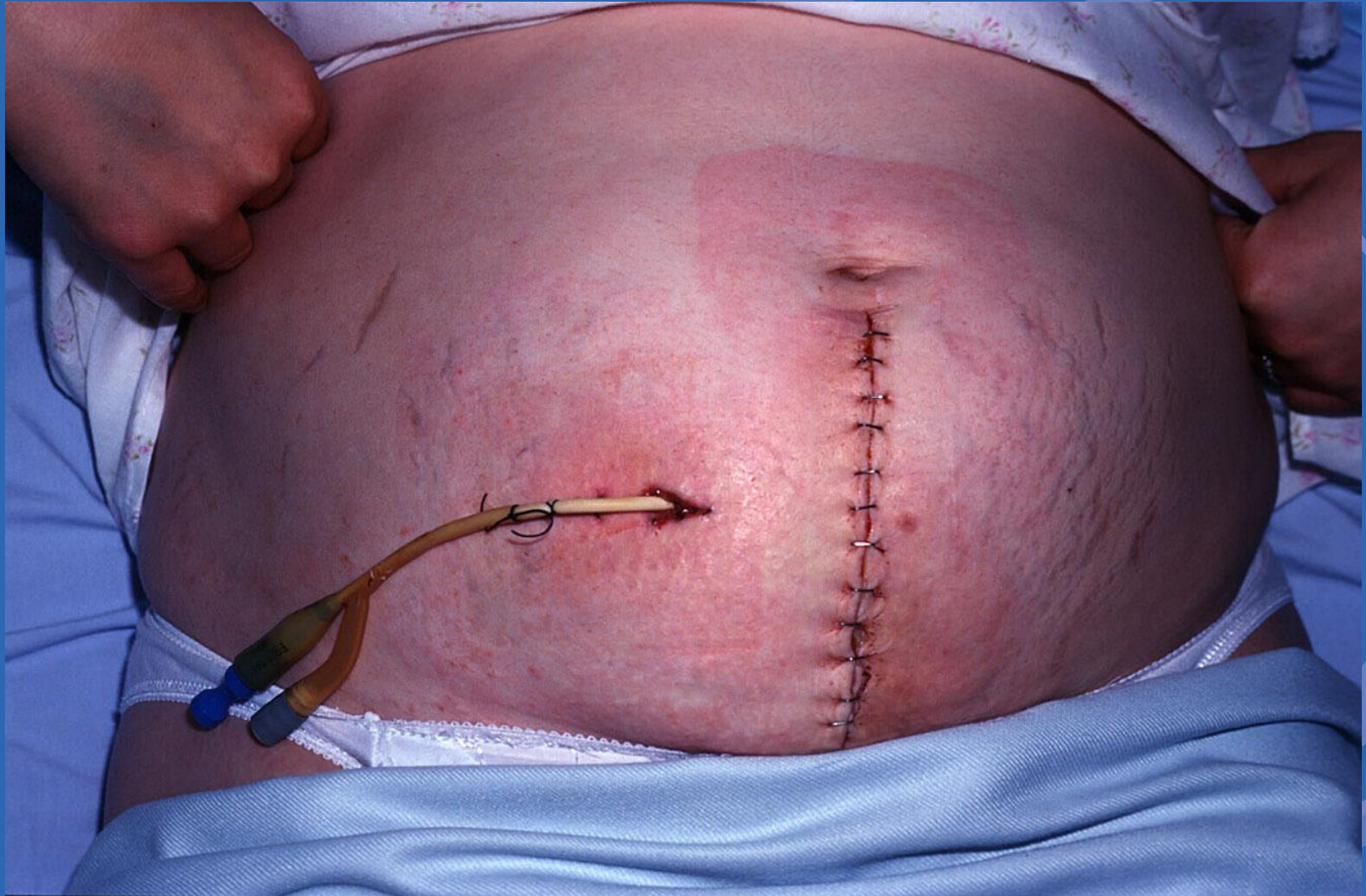


Figure 59.4



# Small Bowel ACE





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## Post -op

- Foley catheter in conduit
- Begin irrigation Day 1
- Slowly increase volumes
- Catheter removed 2-3 weeks
- Teach self catheterisation





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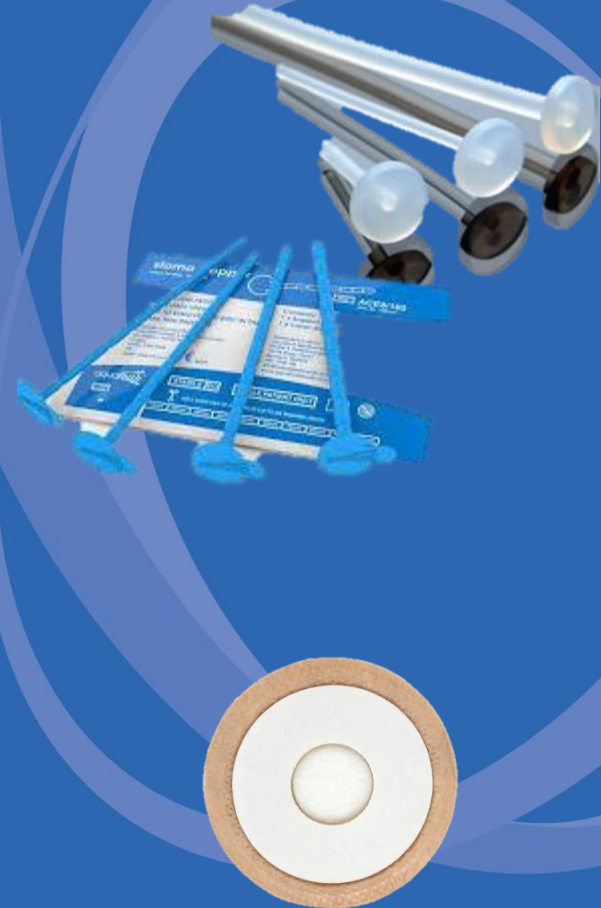
# ACE equipment

- ISC catheter female length
  - Ch 6-14
- Irrigation kit
- Gastrostomy button
  - Ch 8-14
- Chait tube
- Extension set
- Bladder syringe
- Irrigation fluid

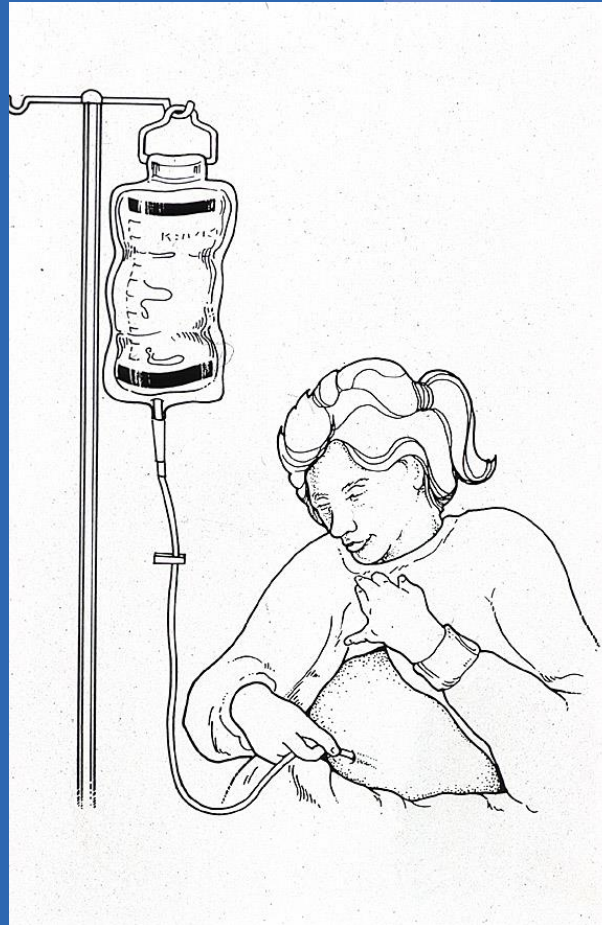


# Equipment

- ACE stopper
  - Aquaflush
    - Individually sized Ch 8-14
    - £14
    - Dressings £27 per pack 30
  - Medicina
  - Flexicare Wystopper
    - Ch 10-16
    - 30 or 60mm
- Stoma caps
  - Oakmed ACE caps
  - Normal stoma cap



# ACE Procedure



# Timing

- AM ideal – gastrocolic reflex
- 30-60 mins after meal
- Convenience
- Relaxed/undisturbed
- Needs at least 30mins
- Abdominal massage
- Average alternate days



# Irrigation Fluid

- Tap water safe even in children (Yerkes et al,2000)
- Softened tap water may have high Na levels
- 20mls per Kg in children
- Average 500mls adults
  - (Range 250 – 1250)
- Body temp
- Stimulants in 40% pts



# Additions to irrigant

- Phosphate enema
- Bisacodyl enema
- PEG solution (Movicol, golytely)
- Liquorice
- Glycerin



# Oral Medication

- Osmotic
  - Movicol, Laxido
- Stimulant
  - Bisacodyl
  - Senna
- Softeners
  - Docusate sodium
- Bulk forming
  - Fybogel



# Irrigation mean times (117 pts)

(Siddiqui et al, 2011)

- Instillation 12 mins
- Sitting time 52 mins
- Frequency Daily 36%
- Alternate days 23%
- >1 per week 10%
- Successful pts – shorter infusion & sitting time





# Complications

- Overall >60% pts
- Stenosis (25%-50%)
- Leakage (10-35%)
- Local infection (25%) more common in PECs
- False passage formation
- Peri-stomal irritation
- Granulation tissue formation
- Prolapse
- Small bowel obstruction (adhesions)
- Surgical revision up to 50%



# Stenosis

- Skin level
- Anastomotic level
- Balloon dilatation
- Tapered catheter
  - Peak medical
  - Flexicare
- Refashioning
- Prevention
  - daily intubation
  - Stopper
  - PEG button



# Solutions to other complications

- Leakage from ACE
  - Better clearance
    - Increase fluid quantity
    - Addition of stimulant
    - ACE stopper
    - Stoma caps
- Granulation
  - Topical steroid cream
  - Silver nitrate



# Irrigation Problems

- Leakage of fluid around catheter while infusing
  - Check Ch size
  - Abdominal cramps
  - Slower instillation
  - Temp of fluid
- Time to instill fluid
  - Larger Ch catheter
  - Irrigation kit



# Irrigation Problems

- Abdominal cramping
  - Speed of infusion
  - Temp of irrigant
  - Stimulants
  - Abdo massage
- Bloating/Flatus
  - As above
  - Charcoal capsules
  - Peppermint



# Elimination Problems

- Time for evacuation
  - NaCl solution?
  - Stimulant
  - Oral medication
- Soiling after procedure
  - ?need longer to evacuate
  - More fluid to complete evacuation
  - Less fluid
  - Addition of stimulant



# Soiling

- Anal plugs
  - Peristeen
  - Renew
- GS's
- Rectal irrigation
  - mini



# Success

- Depends on definition & time from op
- 72% after 5 yrs, 59% after 11 yrs (Yardley et al, 2009)
- No difference in procedure type
- ?better with neurogenic & congenital than functional (Curry et al, 99 & Siddiqui et al, 2014)
- STC 21% failure rate (Chong et al, 2016)
- 50% Hirschsprung's regain function (Chong et al, 2016)
  - ?improves colonic motility (Rodriguez et al, 2012)





# Concordance

- Regular washouts
- **Time**
- Expectations
- Independence
- Significant others
- ?yearly f/up



# Outcome of ACE for FI in adults

(Lefevre et al, 2006)

- 25 pts
- 17 female
- Median age 47
- Conduit
  - 7 appendix
  - 18 ileum
- Cutaneous stenosis 5pts
- 4 pts stopped irrigation
- Remainder clean



# Long Term results in Adults with Constipation

Lees et al, 2004

- N=32
- 26 women
- Mean age 35
- Median F/up 36 mnths
- 28 (88%) further surgery
- 19 (59%) reversal
  - 9 end stoma
- Ileal conduits 1 in 7 stenosis
- Appendiceal conduits 20 in 20 stenosis
- Good function long term 47%



# Long Term Results in Adults

(Worsoe et al, 2008)

- 80 pts
- 64 female
- Mean age 51 yrs
- Indications
  - Neurogenic bowel
  - Anorectal injury
  - FI
  - STC
- Mean F/up 75mnths
- 38% surgical complications
- 62% still irrigating
- 63% side effects
- QoL improvement



# Longterm problems

- Deterioration of original condition
  - Spina bifida
  - MS
- Reduced response to stimulants
- Reduced dexterity
- Reduced mobility
- Failing eyesight



# Further Help

- ASCN guidelines
- [Yvette.Perston@uhb.nhs.uk](mailto:Yvette.Perston@uhb.nhs.uk)



# Thank you for listening

## Any Questions?

