

بِسْمِ اللَّهِ الرَّحْمَنِ الرَّحِيمِ



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**Faecal soiling in children:
population based study
(underlying causes & the solution)**



Mohamad EL-hemaly

Magdy Haleem

Hala hamed

Rehab yahia

Rehab fekry

Sekena elshaaer

Encopresis = Faecal Soiling

- Liquid stool leaking around & causing soiling of underwear by a child aged four years or over after successful toilet training.
- 3-8% of young schoolchildren.
- I did see 8 children in GEC clinic weekly
- Boys more than girls 3:1 or 6:1

May be

- Retentive encopresis (80-95%)
- Non-retentive encopresis (5-20%)

Anorectal Laboratory 1995-2016

Total No. 2029 pts

Male : 58.5 %

Female : 41.5%

Control

30 Adult

30 pediatric

Patients

- *Constipation : 790 pts.*
- *Faecal soiling : 535 pts.*
- *True Incontinence : 258 pts.*
- *Research : 244 pts.*
- *Rectal prolapse : 100 pts.*
- *Others : 98 pts.*

Total F. soiling 535/2029 (26.5%)



Biofeedback 2000-2016

Total No. 598 pts

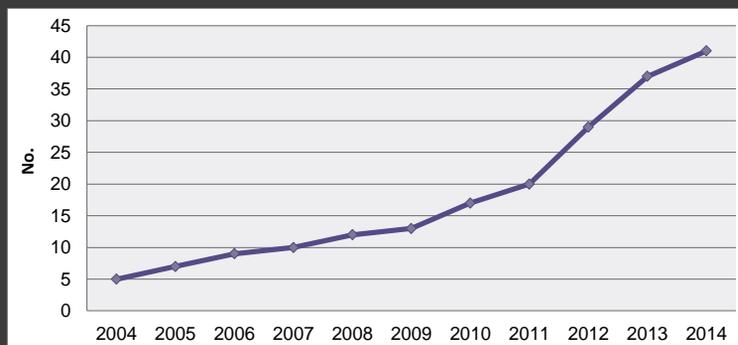
(4784 sessions, 8 sessions/pt)

- Faecal soiling (266 pts.)
- Constipation (158 pts.)
- True Incontinence (110 pts.)
- Pain (8 pts.)
- After anal canal trauma (56 pts.)



Total F. soiling to others 266/598 (44.5%)

Biofeedback for faecal soiling



Is faecal soiling a problem?

A struggle within the family

- Children feel emotionally upset when they soil their clothes with bad odor & hiding their underwear
- Self-esteem & interactions with others can be affected.
- Children avoid going to school, playing with friends.
- Impacted stool cause abdominal pain, loss of appetite
- Scratching the anal area due to irritation by watery stool
- Parents may feel guilt, shame, anger by the problem.



AIM OF THE WORK

- To assess underlying causes, how to approach & the solution

Patients and methods

- ✦ The study was conducted in GEC, Mansoura University, Egypt in the period between 2012 - 2016 after consent taken from parents of children
- ✦ 300 Children (260 boys & 40 girls) with a mean age of (9.3± 2.8) years
- ✦ Children were classified into 2 groups:
 - ✦ *Group I : {250 children} Retentive (faecal retention)*
 - ✦ *Group II: {50 children} Non-retentive (no faecal retention)*

History

- *Age of onset of symptoms .*
- *Failure to pass meconium within ist 2 days of life suggest HD .*
- *Frequency (day or night), consistency ,*
- *Diet & fiber content.*
- *Withholding behavior .*
- *Abd pain , distension , vomiting .*
- *Family history of constipation .*
- *Thyroid disease , or Metabolic diseases*
- *Coeliac disease, HD or cystic fibrosis .*
- *Anorectal surgery.*

Physical Examination

All body systems to exclude any systemic illness complicated by constipation .

- Determine child development for his or her age .
- Brief nutritional assessment .
- Abdominal exam may reveal a colonic mass, distension .
- Neurological exam of spine , lower limbs & saddle area to assess sensation & reflexes
- **Anal examination :**
 - Fissure , impaction, anusitis .
 - Tight anus (= anal stenosis or, HD) .
 - Lax anus(= neurological disease) .

Children with soiling of organic causes were excluded

Plain x-ray of the abdomen:

- *Determines F. Impaction*
- *Child refusing PR*
- *Markedly obese child*



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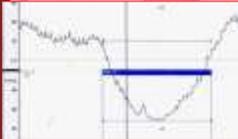
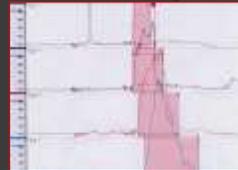
- *Of unprepared colon to demonstrate transition zone in HD & to detect fecal impaction*
- *Detect colonic or rectal stricture*



Anorectal manometry



- Maximal resting pressure (*int. sph.*)
- Maximal squeeze pressure (*ext. sph.*)
- Rectal sensation
 - *Minimum sensory volume*
 - *Urge to defecate*
 - *Maximum tolerant volume*
- Recto-anal inhibitory reflex
- Balloon expulsion test



All Children were treated **conservatively** for 2 months & if no response or partial success, **biofeedback** was tried



Treatment protocol

1-Education

- *Spend time at initial consultation with both child & parents*
- *Explain the pathophysiology of functional constipation, why withholding stool leads to a vicious circle of constipation with or without soiling ,No punishment*

2-Disimpaction

- *Can be performed without anaesthesia*
- *Once fragmentation occurred, softening agents & stimulant laxatives plus enemas are prescribed .*
- *Prompt and gentle cleaning of the perianal area*

3- Maintenance therapy

- *High fiber diet to increase stool bulk and reduce frequency .*
- *Limit fast foods , junk foods ,caffeine drinks*
- *Regular exercise & excess water*
- *May take several months to establish a regular pattern of defecation & laxatives may need to be continued*
- *Weaning is attempted at 3- monthly intervals or stopped if child regain a regular bowel habit .*

4- Back to normal bowel habit

- *Encourage the child to sit on the toilet for up to 5 minutes 3-4 times a day after meals to use the gastrocolic reflex*
- *Toilet training with reward system and diminishing toilet phobia.*
- *Remain calm, try not to show disgust, disappointment or frustration with your child.*

Biofeedback training

Good maturity of the child to cooperate with biofeedback is a must



- ◆ BF done in twice weekly sessions (by a nurse & physical therapist) each lasting for 15-30 minutes for a total of 6-10 sessions

- ◆ Child is encouraged to :
 - *Improve rectal sensation*
 - *Build up connection with higher centers*
 - *Maximal contraction of sphincter muscles*
 - *Synchronize their contractions*
 - *Effective defecation & continence*



Patient characteristics

	Group I (n= 250)	Group II (n=50)
Mean age (years)	9.2	10.1
Boys: Girls	225:25 (9 : 1)	45:5 (9:1)
Faecal retention	250	50
Soling episodes/day		
• Diurnal	4	3
• Nocturnal	1	0
Aware of soiling	15	45
Used laxatives	190	5
Painful defecation	25	2
Abdominal pain	60	4
Positive family history	15	10

Main underlying Causes

Cause	Number
Junk food & low fiber diet	250
Tv& computer addiction	200
Unpleasant toilet facilities	125
Stress in the family	90
Frequent punishment	70
Anal fissure	15
Sexual abuse	5

Manometric variables for both groups before treatment

	GI (n=250) retentive	GI(50)non retentive
Maximal resting pressure	68.3 ± 11.1	65.9 ± 12.3
Maximal squeeze pressure	157 ± 19	160 ± 15.2
RAIR	INTACT	INTACT
Sensory threshold	52.8 ± 19.3	38.2 ± 20.3
Critical volume	156.4 ± 49.7	140 ± 38.9
Balloon defecation	100	40

Outcome after conventional treatment

	Group I	Group II	p-value
Maximal resting pressure			
- Before	68.3± 11.1	65.9 ± 12.3	NS
- After	67.7 ± 10.9	70.5 ± 11.4	
Maximal squeeze pressure			
- Before	157 ± 19	160 ± 15.2	NS
- After	160 ± 17.5	163 ± 12.3	
Sensory threshold			
- Before	52.8 ± 19.3	38.2 ± 20.5	0.001
- After	40.5 ± 11.5	37.5 ± 22.3	
Critical volume			
- Before	156.4 ± 49.7	140 ± 38.9	0.001
- After	135 ± 30.5	138 ± 37.7	
Normal defecation	170/250 68%	10/50 20%	

Outcome after biofeedback treatment

Was done for 80 children with retentive soiling & 40 children with non-retentive soiling

	Group I(80)	Group II(40)	p-value
Maximal resting pressure			
- Before	70 ± 12.3	69.3 ± 13.2	NS
- After	72.3 ± 11.9	71.2 ± 12.9	
Maximal squeeze pressure			
- Before	160.3 ± 19.2	162.1 ± 20.3	NS
- After	165 ± 18.9	165 ± 19.4	
Sensory threshold			
- Before	62.2 ± 20.3	45 ± 18.7	0.001
- After	40 ± 15.2	40.5 ± 15.3	
Critical volume			
- Before	158.2 ± 30.2	160 ± 20.2	0.001
- After	130.5 ± 15.5	140 ± 15.3	
Normal defecation	75/80 94%	30/40 75%	

Overall success rates for both groups

	Group I (n=250)	Group II (n=50)
Conventional treatment		
- Before	250	50
- After	170/250 = (68%)	10/50 = (20%)
Biofeedback training		
- Before	80	40
- After	75/80 = (94%)	30/40 = (75%)



- *Encopresis is a complication of chronic constipation, fecal retention occurs in 95% of constipation.*
- *Encopresis can lead to a struggle within the family.*
- *Treatment of soiling may take several months*
- *Four phases of treatment (education, disimpaction, maintenance & back to normal bowel habit).*
- *Finally children failed to improve on above measures, biofeedback therapy usually gives good results.*

Thank YOU