

I'm Constipated!

Can Anyone Help?

Steve Harrell, MD, MSPH

GI Grand Rounds

July 26, 2007

ANMS Clinical Training Program

- 10 Fellows selected each year
- Must have interest in motility
- 5 academic centers participated 2006-2007
 - Iowa
 - Temple
 - Michigan
 - Kansas
 - Cedars-Sinai
 - "Best of the Best" Honor Roll, which comprises the top hospitals ranked highly in the most number of categories – US. News and World Report

Cedars-Sinai

- Location- Los Angeles/Beverly Hills
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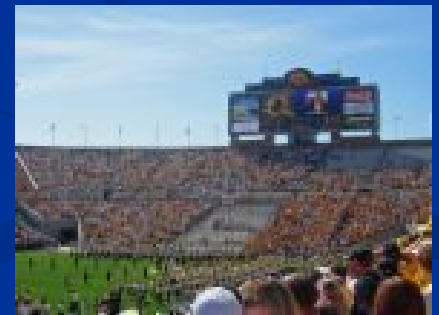


Satish Rao, MD, PhD

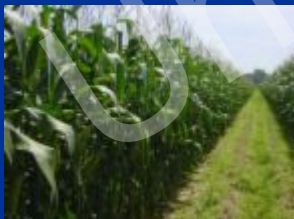
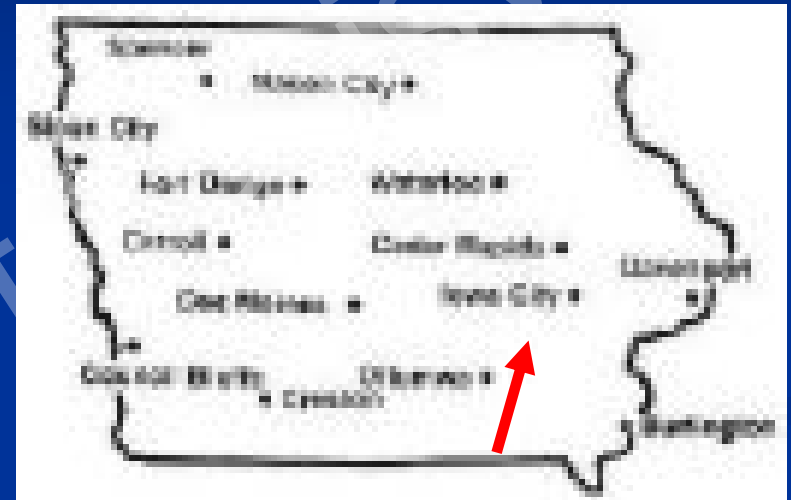


Medline search: 432 Publications

University of Iowa Hospital and Clinics



Iowa City



Iowa City

- As of the 2006 census estimate, the city had a total population of 62,649, making it the sixth-largest city in Iowa.
- Iowa City is tied with Stamford, Connecticut, for the US metropolitan area with the highest percentage of the adult population holding a bachelor's degree or higher; 44 percent of adults hold a degree. (US Dept of Commerce @ www.census.gov)
- For every 100 females age 18 and over, there were 94.3 males.
- Medical school ranked #30 (Harvard, Johns Hopkins, Penn, Wash U, UCSF, UW, Stanford, Duke, Yale, Baylor) -US News

Iowa City

- In 2004, Forbes Magazine named Iowa City the third Best Small Metropolitan Area in the United States.
- Utne Magazine ranked Iowa City eighth in its 1997 survey of "America's 10 Most Enlightened Towns"
- In June 2006, *Kiplinger's* rated Iowa City #10 on its list of the Top 50 Smart Places to Live.
- Iowa City is commonly known as a "university town"
- It is the home of world famous Dr. Satish Rao

I am quite famous in the GI community!



Back to a Case of Constipation



HPI

- 48 WF complains of chronic constipation
- Lifelong
- Moves bowels once per week
- Hard lumpy stool
- Straining
- Occasionally manually disimpacts with finger
- Bloating
- Told by numerous MDs to eat more fiber

Bristol Stool Chart

Type 1  Separate hard lumps, like nuts
(hard to pass)

Type 2  Sausage-shaped but lumpy

Type 3  Like a sausage but with cracks on
its surface

Type 4  Like a sausage or snake, smooth
and soft

Type 5  Soft blobs with clear-cut edges
(passed easily)

Type 6  Fluffy pieces with ragged edges, a
mushy stool

Type 7  Watery, no solid pieces.
Entirely Liquid



HPI

- Symptoms of constipation “much more bothersome than diabetes or MS”.
- Formerly abused laxatives
- Tried fiber, Zelnorm, Miralax, multiple stimulant laxatives, and enemas without relief
- Spent > \$1000 for colonic hydrotherapy sessions



HPI

- Recently referred to private GI physician
- Physician ordered Sitz marker study and placed patient on Amitiza BID and Miralax TID
- Referred to Dr. Rao for further workup
 - **“You definitely need to see Dr. Rao”**
- Since starting above meds, she has daily loose BMs without straining
- However, her “constipation” is still most bothersome problem, since all other previous treatments lost efficacy

PMH

- Overall relatively healthy 48 wf
- DM I since age 16
 - Well controlled
 - No complications
- MS diagnosed 2001
 - L hand and facial numbness
 - MRI and lab work supportive of MS
- ? Raynauds

Family History

- Father died of colon cancer age 78
- Mother died of breast cancer

Social History

- Executive assistant
- Lives 2 hours away in Iowa
- Married
- 24 year old child (9 pounds 5 ounces vaginally delivered without forceps or episiotomy)
- No etoh or smoking
- Exercises daily

Medications

- Lubiprostone 24mcg bid
- Miralax 17g tid
- Senna 4 daily
- Insulin 15-20 NPH and 7 R daily
- Avonex (interferon) 30mcg IM weekly
- Fiber (has never helped)

ROS

- No weight change
- Occasional nausea after taking Amitiza
- Rare urinary incontinence with exercise
- Several episodes of left hand numbness and weakness since 2001. Two total episodes of facial numbness. Last episode of hand weakness one year ago.
- Rest of ROS unremarkable

Physical Exam

- Pleasant, normal BMI
- Abdomen: soft, nt, nd, moderate stool in LLQ, hypoactive bs, no HSM, belly button ring
- Rectal: normal sensation, normal anal wink, small hemorrhoids, small amount of stool in rectal vault, poor resting and squeeze sphincter tone, bearing down revealed perineal descent without relaxation of anal sphincter
- Neuro: sensation, strength, reflexes normal

Diagnostics

Labs

Endoscopy

Imaging

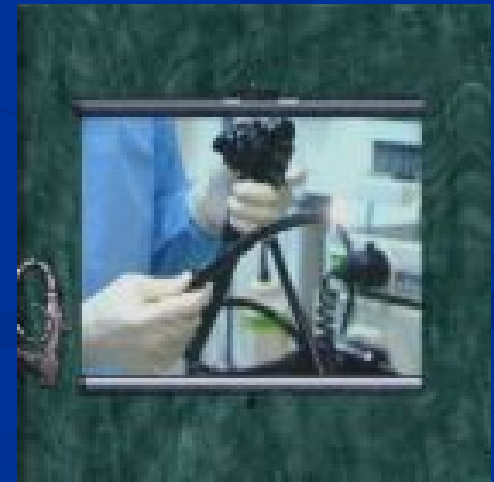
Motility Studies

Labs

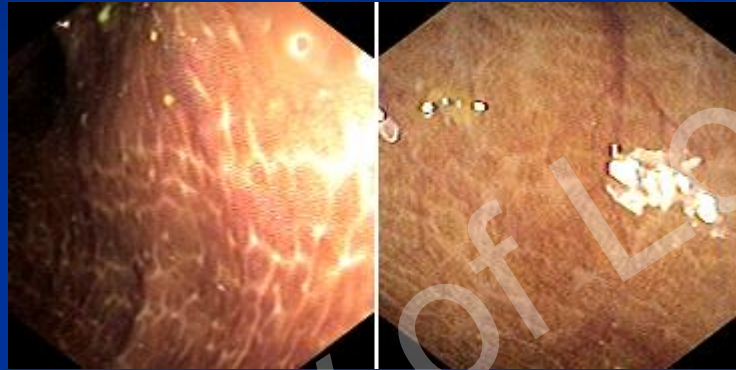
- CBC, CMP, TSH, CRP normal
- Hgb A1C = 6.4

Colonoscopies

- She has had 3 colonoscopies in past 8 years.
- They started at age 40 for strong family history
- Endoscopy report revealed small benign polyps, hemorrhoids, and melanosis coli



Melanosis Coli



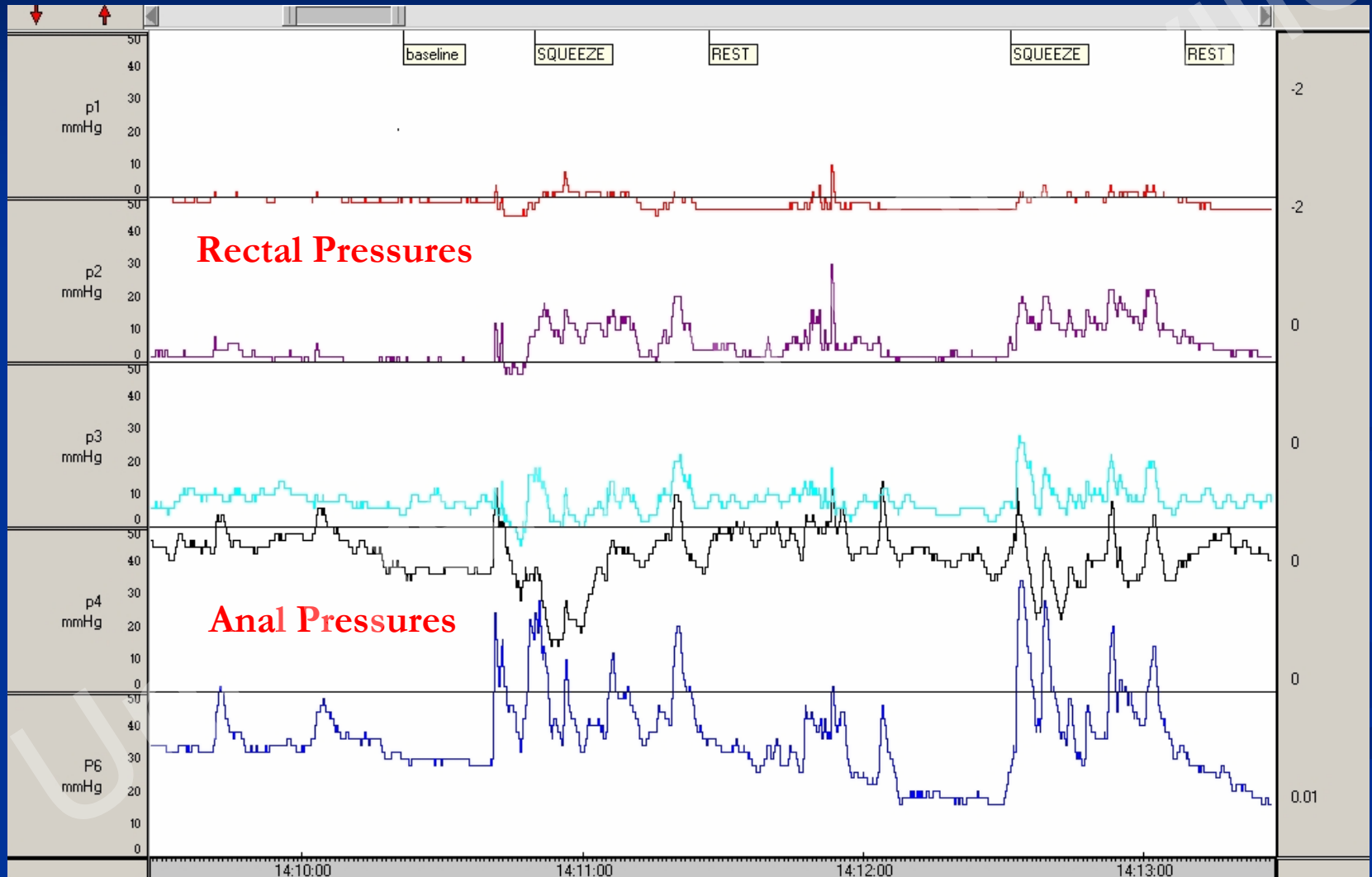
Sitz Markers



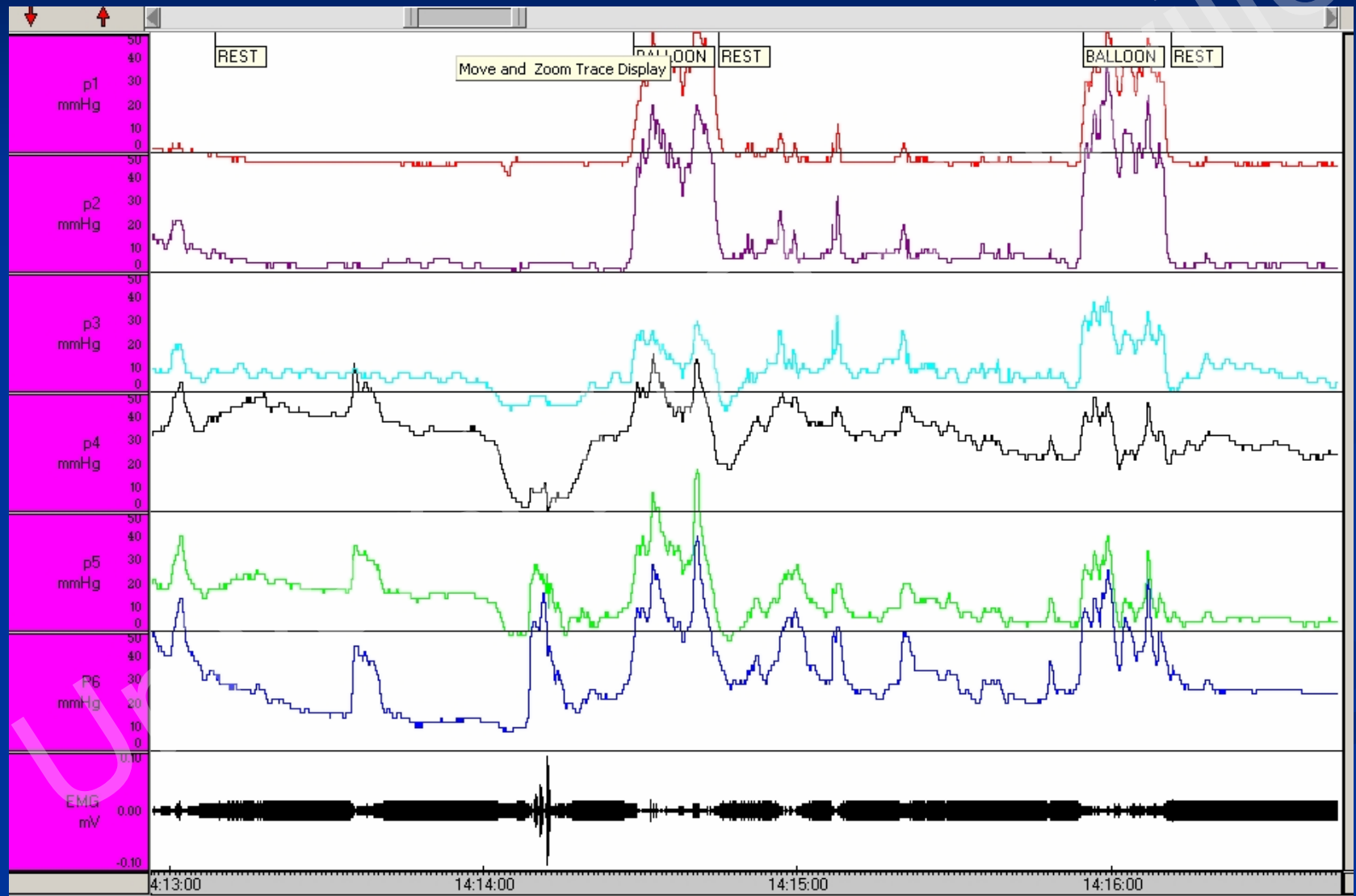
Anorectal Manometry

University of Louisville

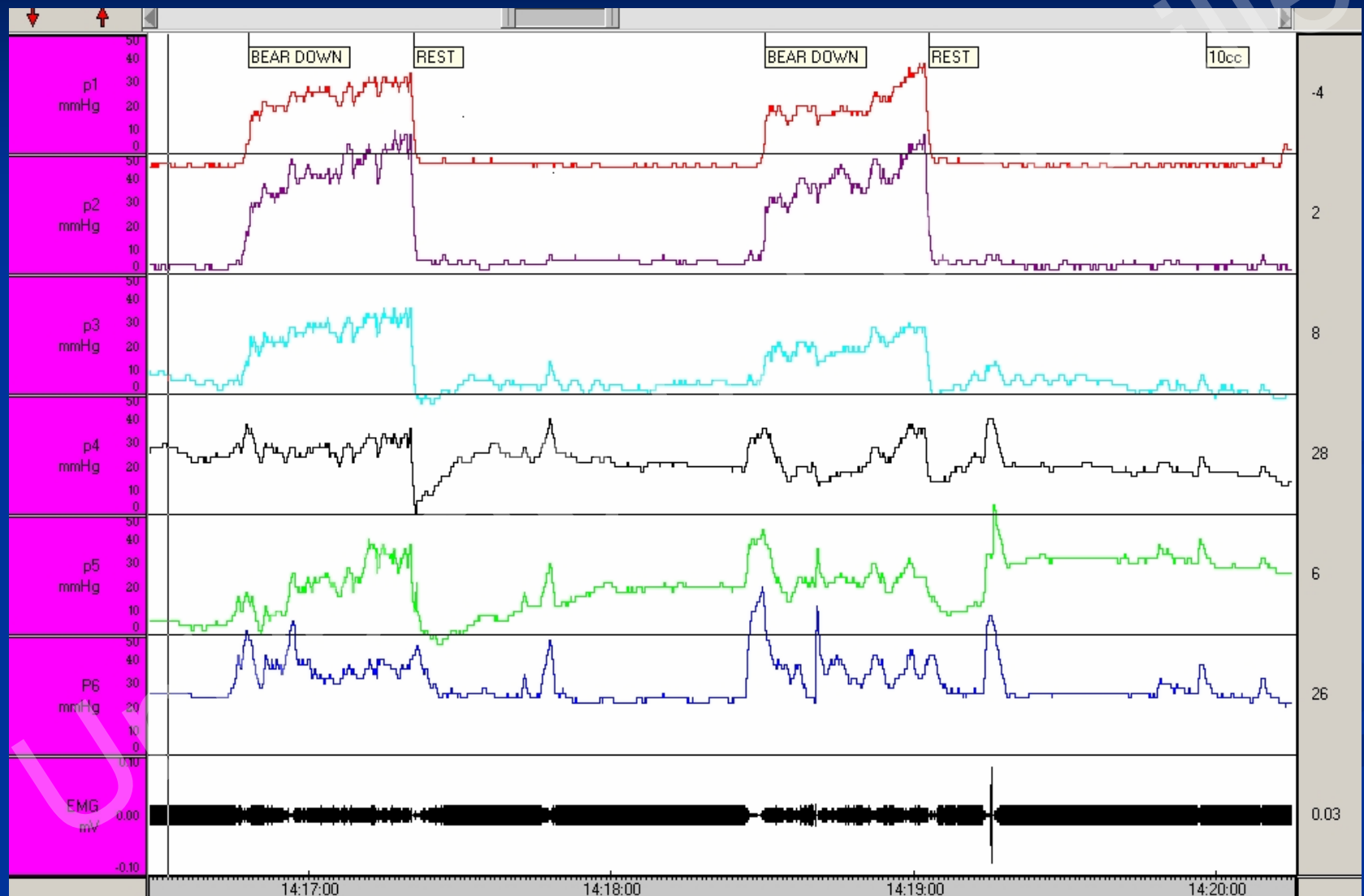
Resting and Squeeze Pressures



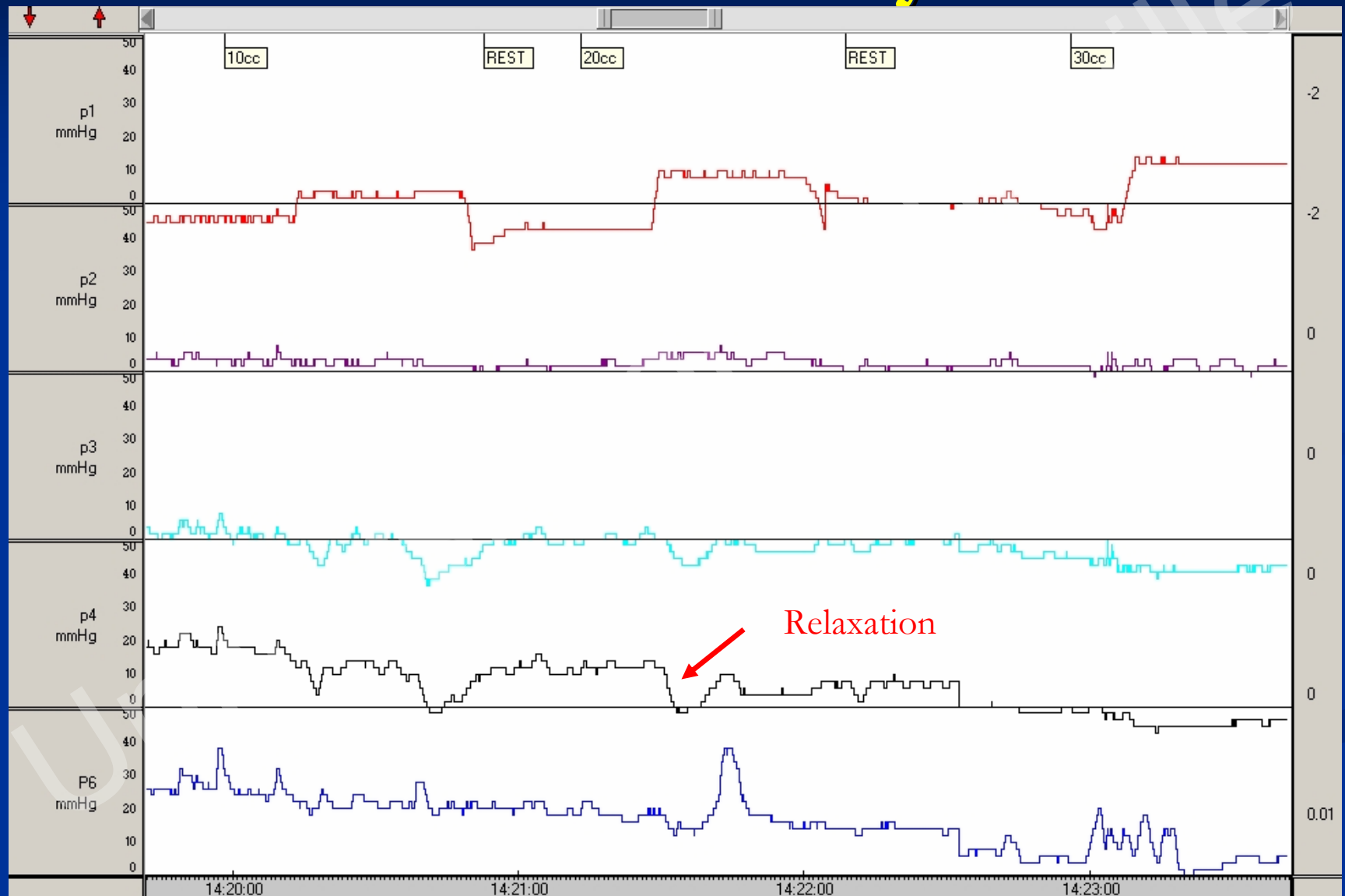
Blow up Party Balloon



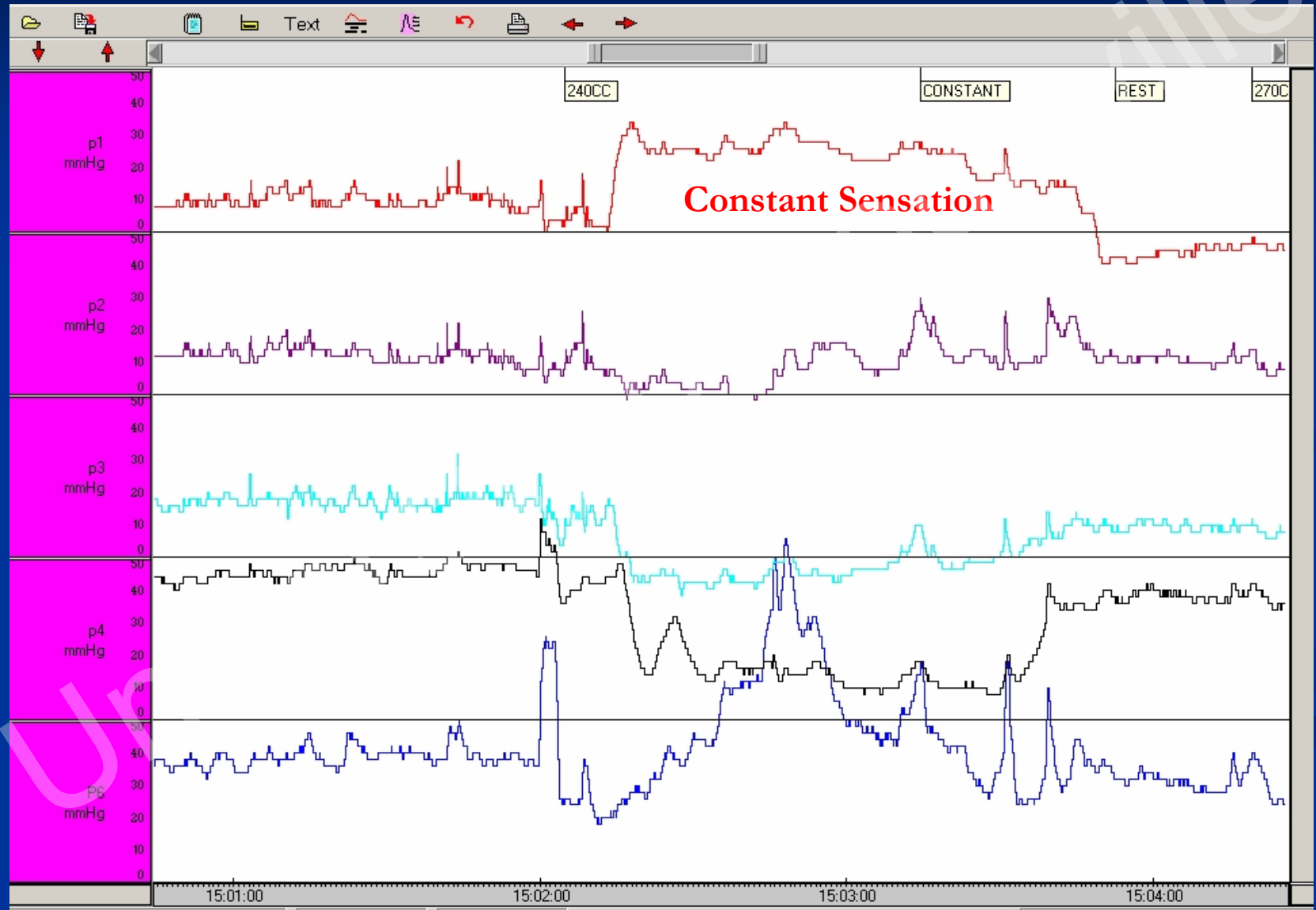
Bear Down



Recto-anal Inhibitory Reflex



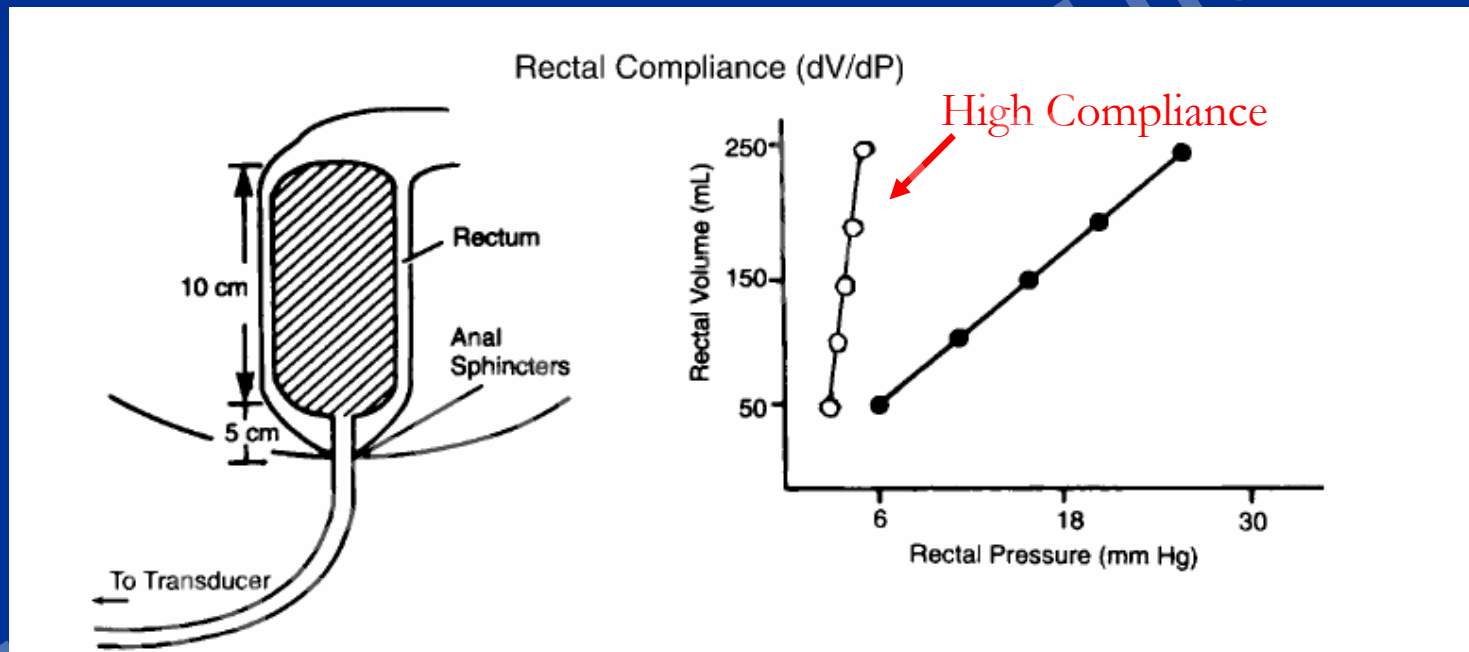
Balloon in Rectum



Rectal Sensation

- First sensation 60cc (usually $< 20\text{cc}$)
- First constant sensation 240cc
- Desire to defecate, urgency, maximum tolerable volume- **NOT REACHED!!**

Rectal Compliance

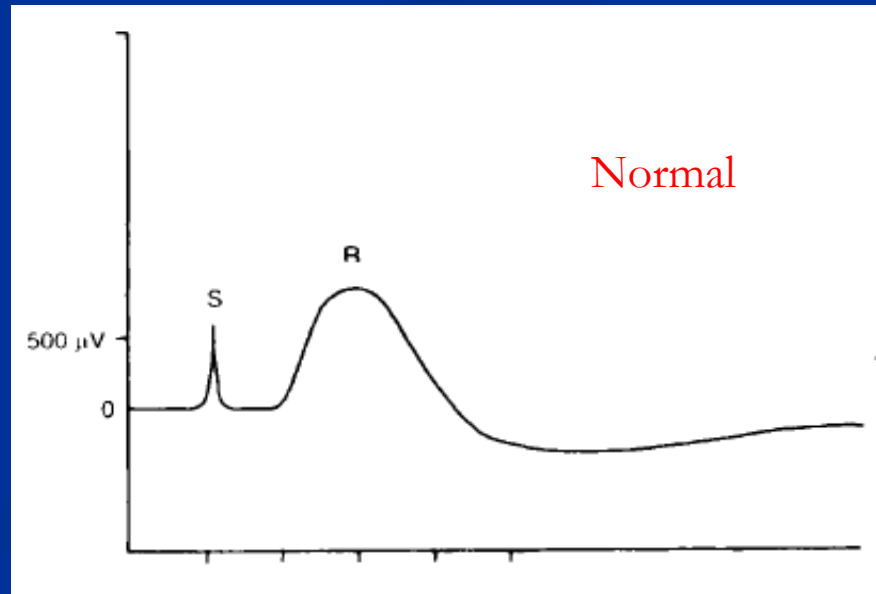
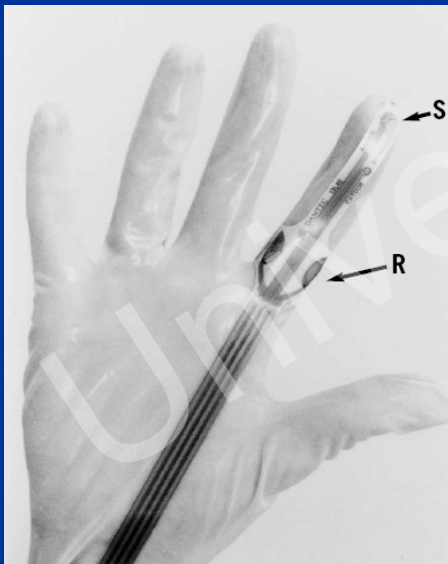


Balloon Expulsion

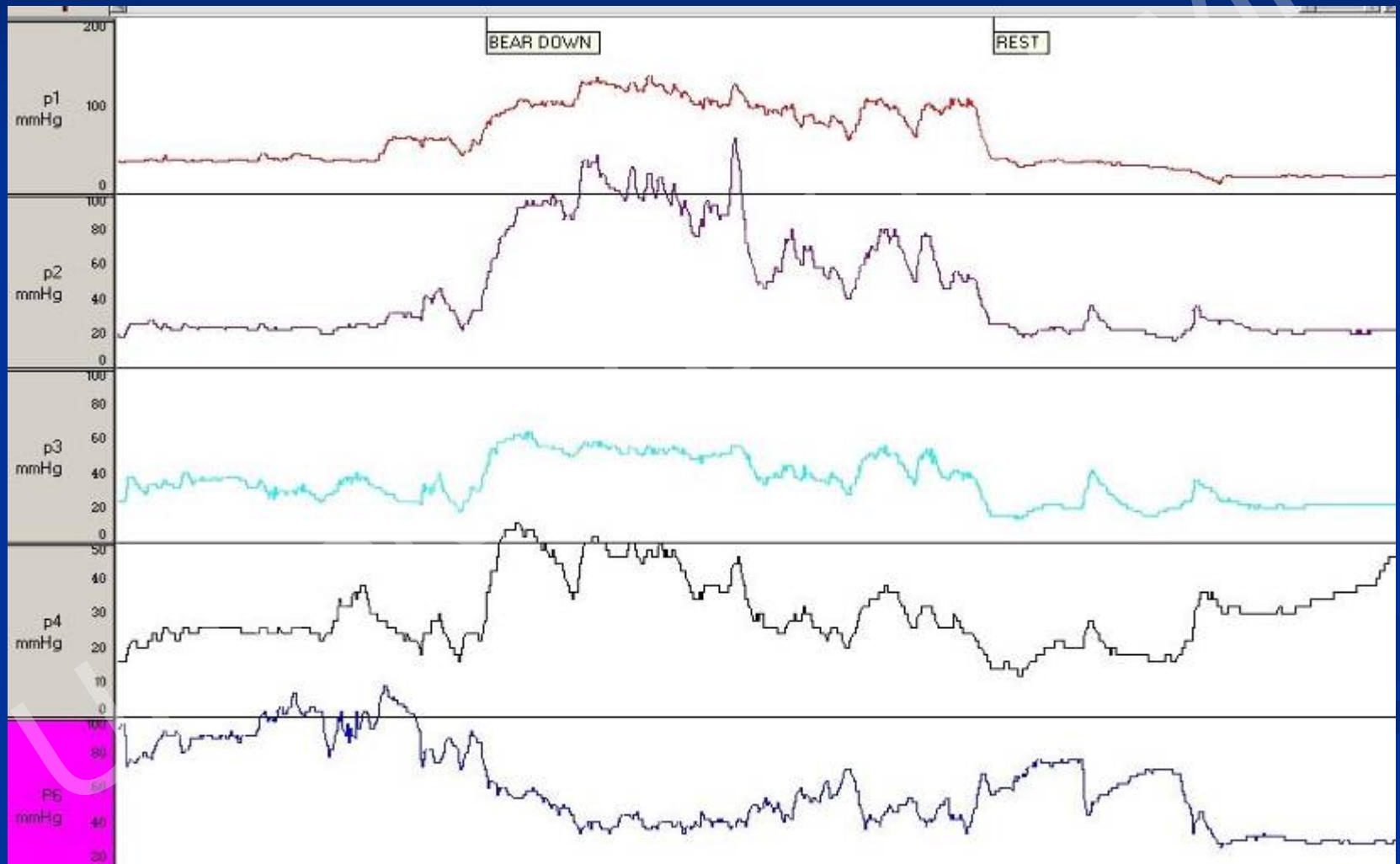
Inflate balloon with 50cc water

Expelled in 24 Seconds

Pudendal Nerve Latency Test



Bear Down on Toilet



Summary of ARM

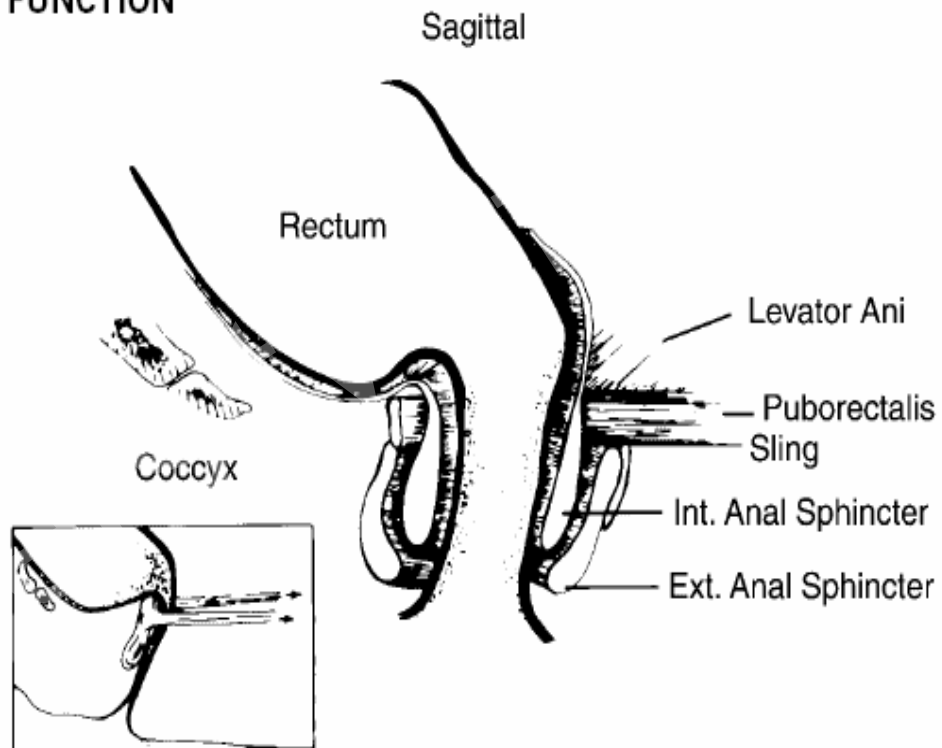
- Weak anal pressures
- Dyssynergic defecation
- Impaired rectal sensation
- High compliance
- Normal RAIR
- Normal balloon defecation
- Normal pudendal nerve latency

Discussion

Difficult Chronic Constipation
Workup

Anatomy

ANATOMY AND FUNCTION



Workup

- H & P
- Physical Exam
 - Rectal Exam!
- Blood Tests
- Imaging
- Endoscopy

Types of Chronic Constipation

- Slow Transit Constipation
- Evacuation Disorders
 - Dyssynergic defecation
 - Sensory dysfunction
 - Rectocele or rectal prolapse
 - Intussusception
 - Excessive perineal descent
- Functional Constipation
 - Normal transit and pelvic floor function

What Next?

For Constipation

Physiologic Testing

- Colon Transit Study
- ARM
 - Resting anorectal sphincter pressure
 - Attempted defecation
 - Recto-anal inhibitory reflex (RAIR)
 - Rectal Sensation
- Balloon expulsion test
- ? Colonic manometry

Sitz Markers



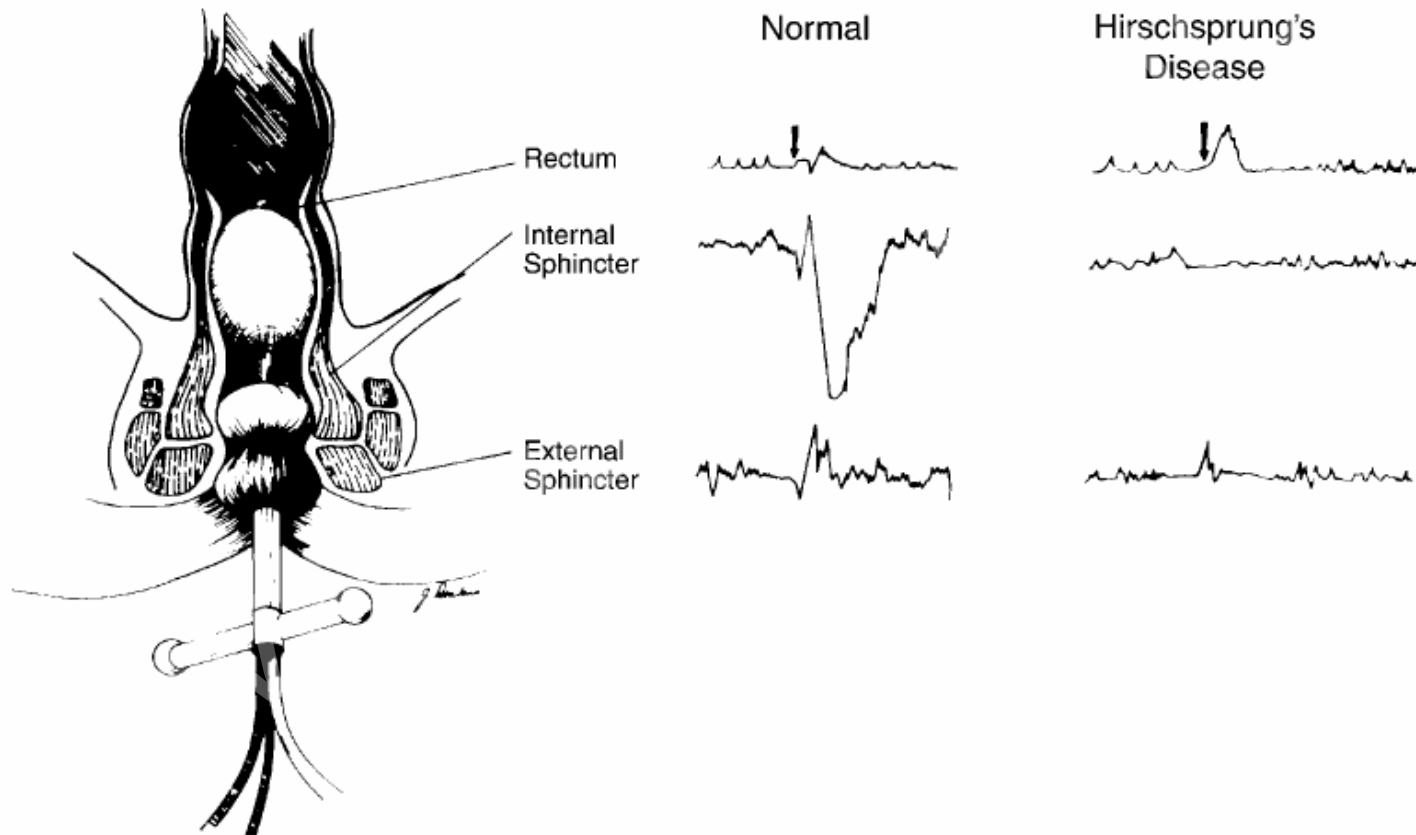
ARM

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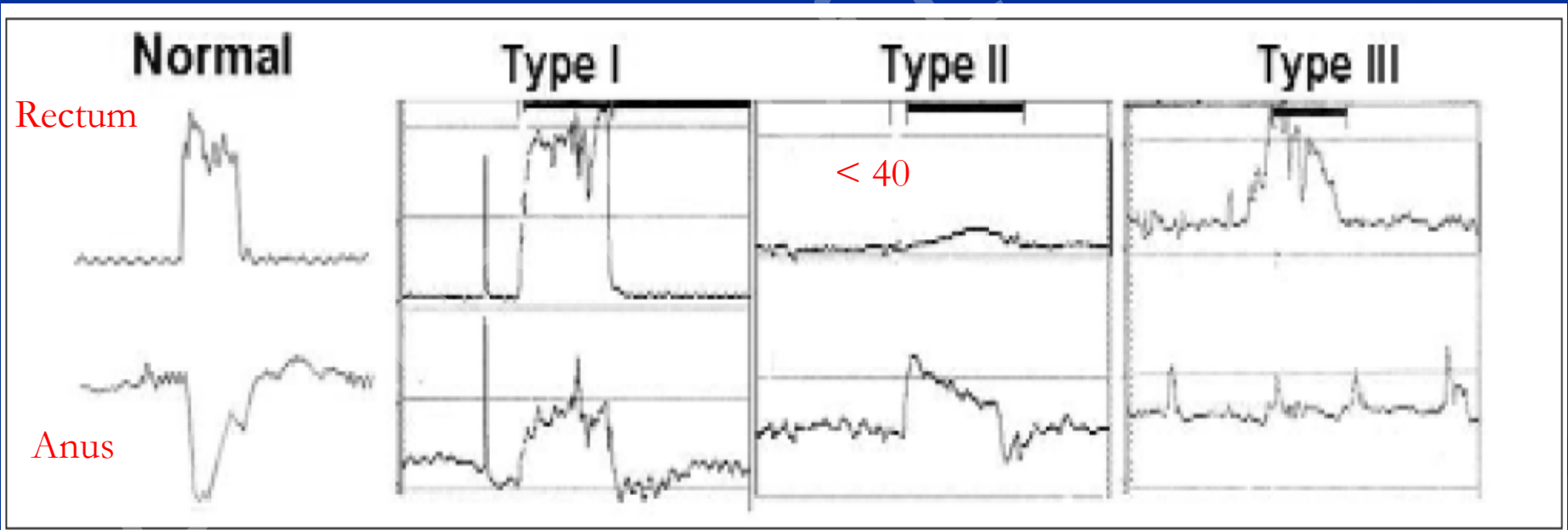
Indications for ARM

- Fecal Incontinence
- Chronic Constipation
- Pre/Post Colonic Pouch Surgery
- Facilitate Biofeedback

Recto-Anal Inhibitory Reflex



Dyssynergic Defecation



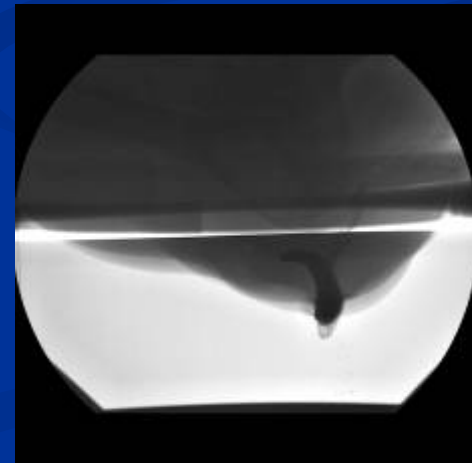
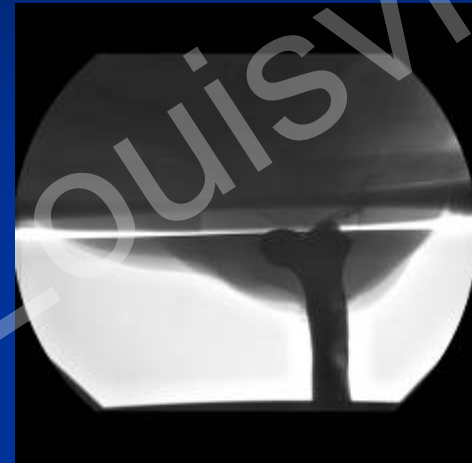
Diagnosis of Patient

- Dyssynergic defecation
- Slow transit constipation (likely caused by above)
- Hyposensitive rectum
- High rectal compliance

Recommendations

- Defacography to rule out:
 - Rectocele
 - Intussusception
 - Excessive perineal descent
- Biofeedback therapy
- Continue Amitiza +/- miralax
- Avoid stimulant laxatives
- Reassess after 6 biofeedback treatments

Defacography



Biofeedback Indications

- Fecal incontinence
- Dyssynergic constipation

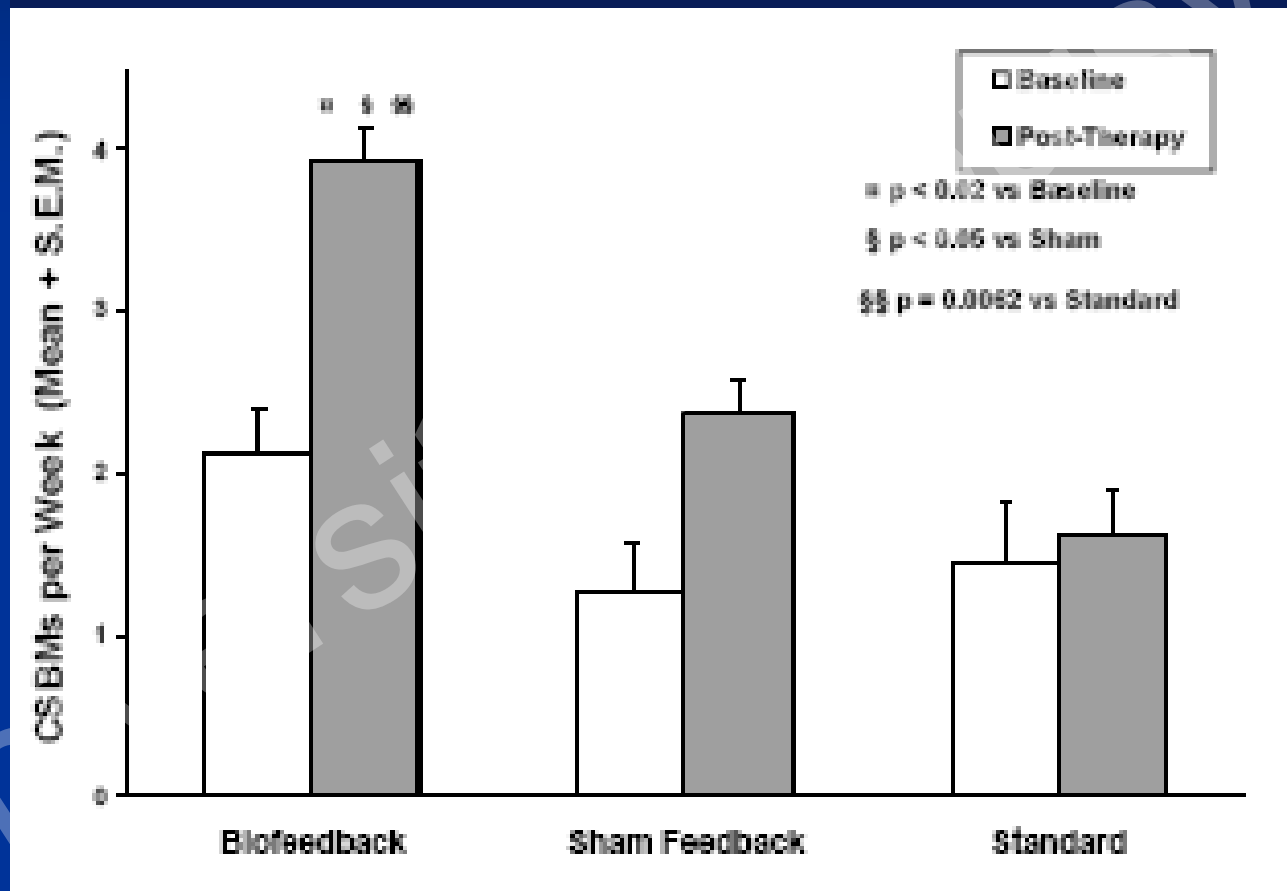


Biofeedback Goals

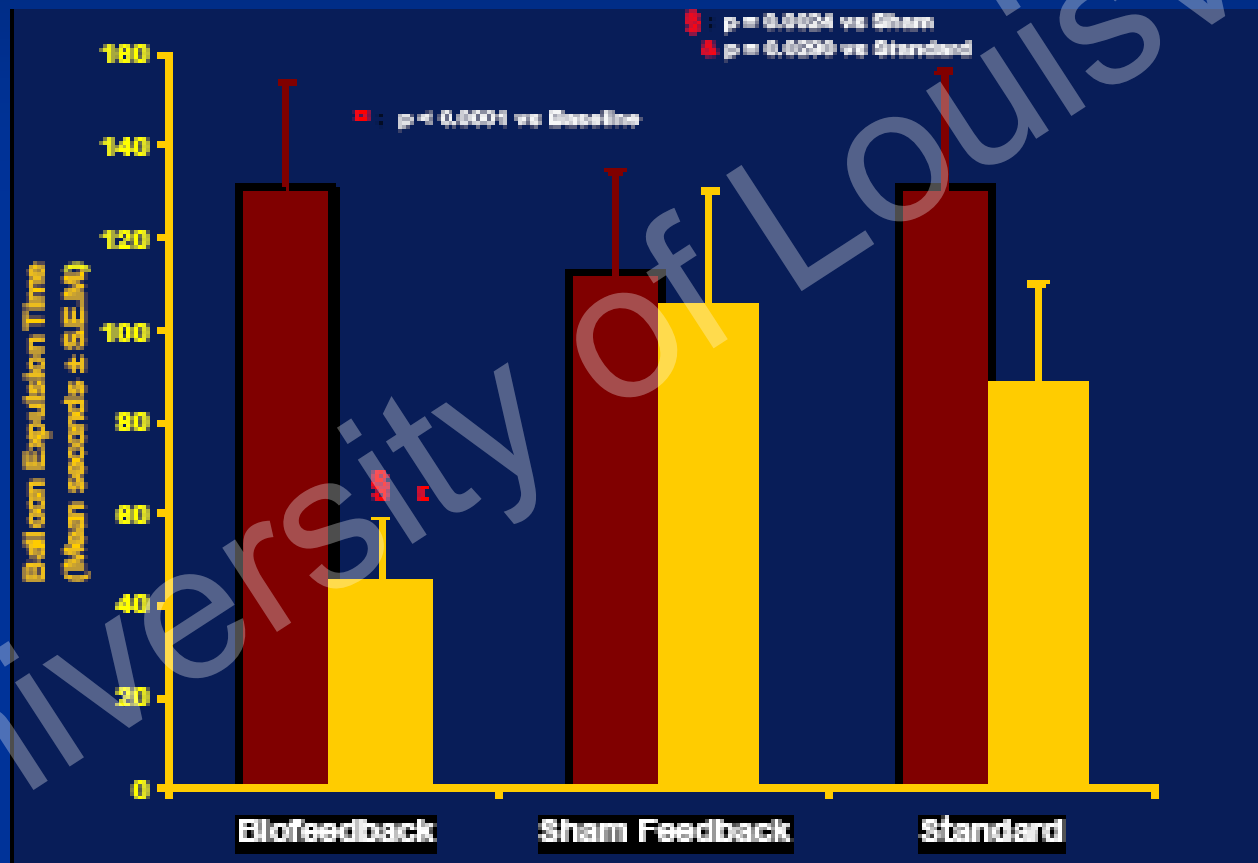
- Teach diaphragmatic breathing
- Teach anal sphincter and pelvic floor relaxation
- Improve rectal sensation
- Eliminate sensory delay
- Improve recto-anal coordination

Courtesy of SS Rao

Biofeedback Results in RCT



Biofeedback Results in RCT



Biofeedback Therapy

- Improves anorectal function in most dyssynergic patients
- Normalizes stool frequency and straining in 75% of patients
- Real change in pathophysiology (not just due to coping strategies)
- Improvement in bowel function is sustained over time

Conclusions

- Treatment of difficult chronic constipation is more than just fiber
- Physiologic testing can frequently lead to a diagnosis and treatment plan



Questions?

University of Louisville