Evolving care in paediatric polyposis - The St Marks Experience

Dr Warren Hyer

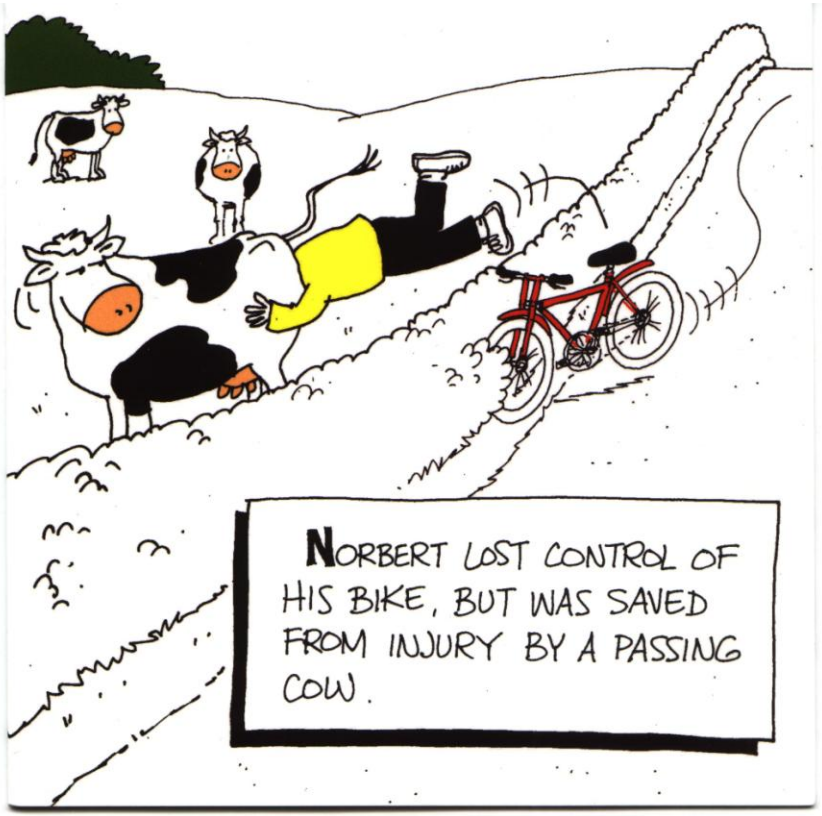
Consultant Paediatric Gastroenterologist

St Mark's Polyposis Registry, UK

Royal Children's Hospital Melbourne

St MARK'S HOSPITAL

A Paediatric gastroenterologist…..



Instead:


ST MARK'S HOSPITAL
FOR FISTULA, &C.


Wolfson Unit for Endoscopy
St Mark's Hospital - United Kingdom
St. Mark's Hospital
Harrow on the Hill
OMED
The Wolfson Unit for Endoscopy is recognised as a
WORLD CENTRE OF EXCELLENCE
by the World Organisation of Digestive Endoscopy

125 history of FAP

9. Sklifasowski NW. Polyadenoma tractus intestinalis. Vrac 1881; 4: 55–7.

X. POLYADENOMA TRACTUS INTESTINALIS.

Проф. Н. В. Склифосовскаго.

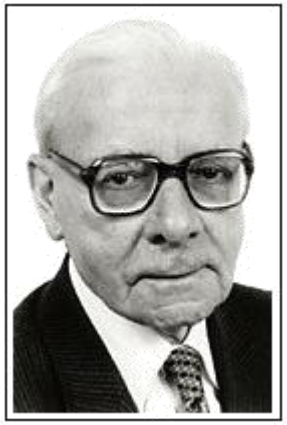
Различные патологическіе процессы въ нижней части кишечника сопровождаются функціональными разстройствами, въ числѣ которыхъ самыя постоянныя—ощущеніе жиленія и колики. При почечуйномъ(гэморройномъ) перерожденіи слизистой оболочки прямой кишки это явленіе представляется обычнымъ; оно ожесточается въ тѣхъ случаяхъ, когда слизистая оболочка поражается катарромъ. А такъ какъ у страдающихъ почечуемъ это повторяется нерѣдко, то подобное припадочное явленіе и принимается за выраженіе катарральнаго состоянія кишекъ вообще; въ дѣйствительности же оно поддерживается мѣстнымъ патологическимъ процессомъ—почечуйнымъ перерожденіемъ слизистой оболочки прямой кишки. Почечуйное перерожденіе слизистой оболочки развивается въ самой нижней части прямой кишки, и рѣдко можно наблюдать расширеніе венъ выше, чѣмъ сантиметра на три надъ жомомъ (sphincter ani). Но воспалительные процессы и новообразованія могутъ распространяться выше по кишеч-

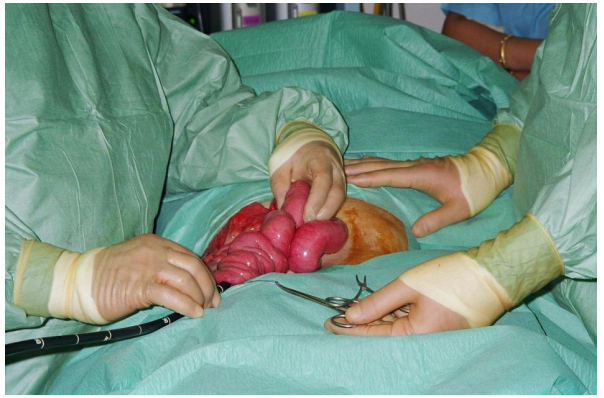
The history of familial adenomatous polyposis

Steffen Bülow[1], Terri Berk[2] and Kay Neale[3]

[1]*The Danish Polyposis Register, Hvidovre University Hospital, Copenhagen, Denmark;* [2]*The Familial Gastrointestinal Cancer Registry, University of Toronto, Canada;* [3]*The Polyposis Registry, St. Mark's Hospital, Northwick Park, Watford, Harrow, UK*

More than a decade of paediatric polyposis…..

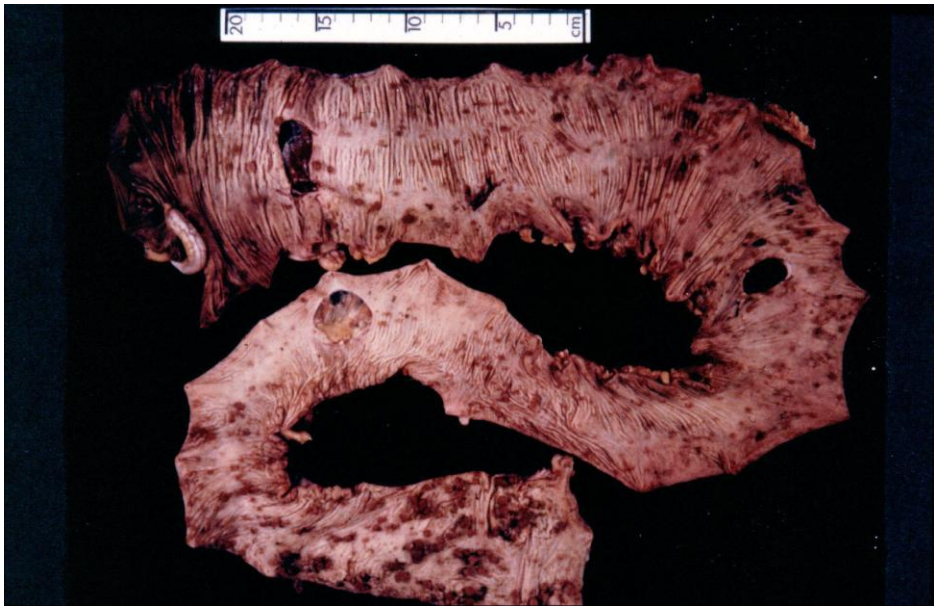




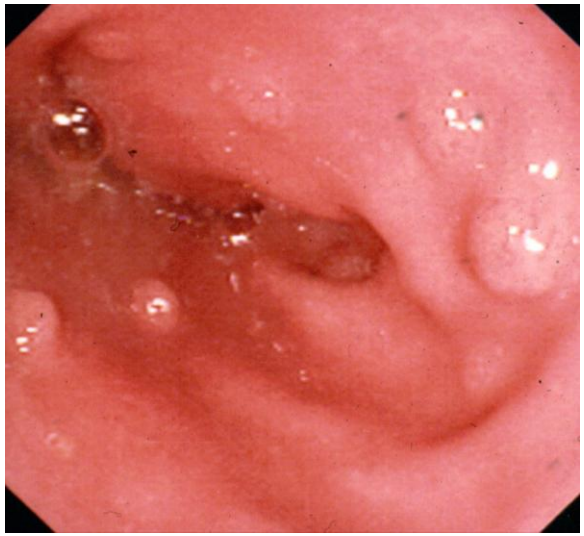
Phenotype suppression

Natural history of paediatric FAP

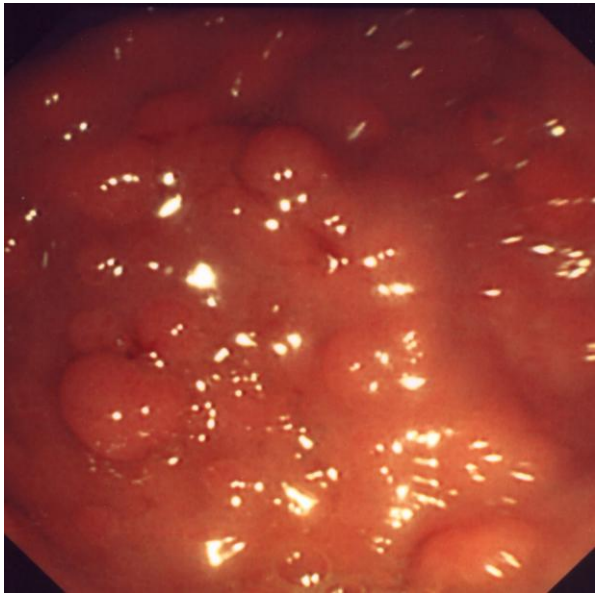
- When to start endoscopy
- Full colon or sigmoidoscopy in adolescents
- Should the gene mutation affect timing
- Age of first cancer.



Natural history of paediatric FAP

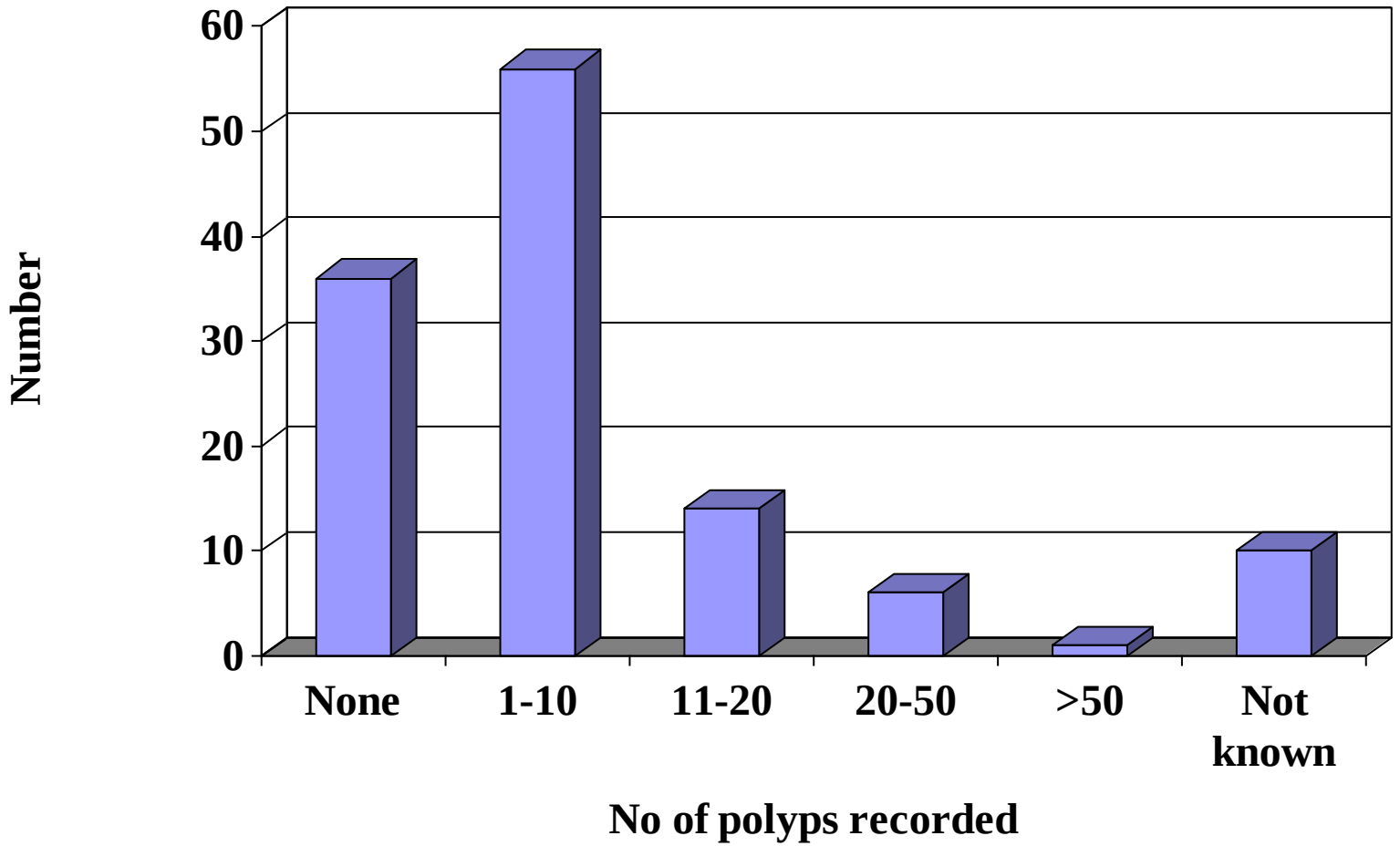


? Too early



Too late?

No. of polyps at sigmoidoscopy
(median age 14yrs). N= 123



Number of malignancies/degree of dysplasia

123 children ultimately diagnosed with FAP

↓

No malignancies identified ≤ 16 years

↓

Histopathology available from 112 colectomy specimens (median age 17 years, range 10-31)

↓

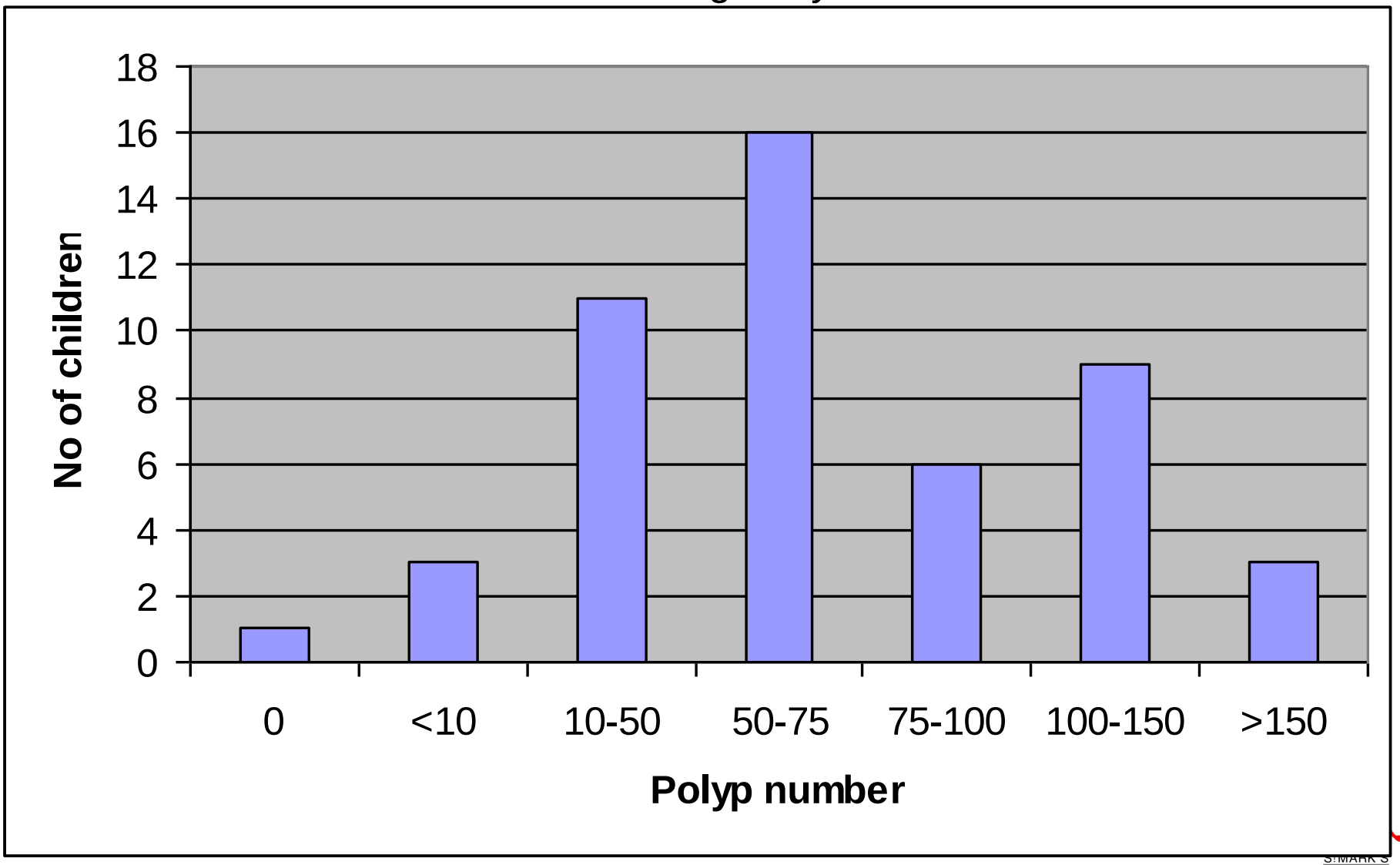
4 children had severe dysplasia

↓

All with significant GI symptoms in adolescence

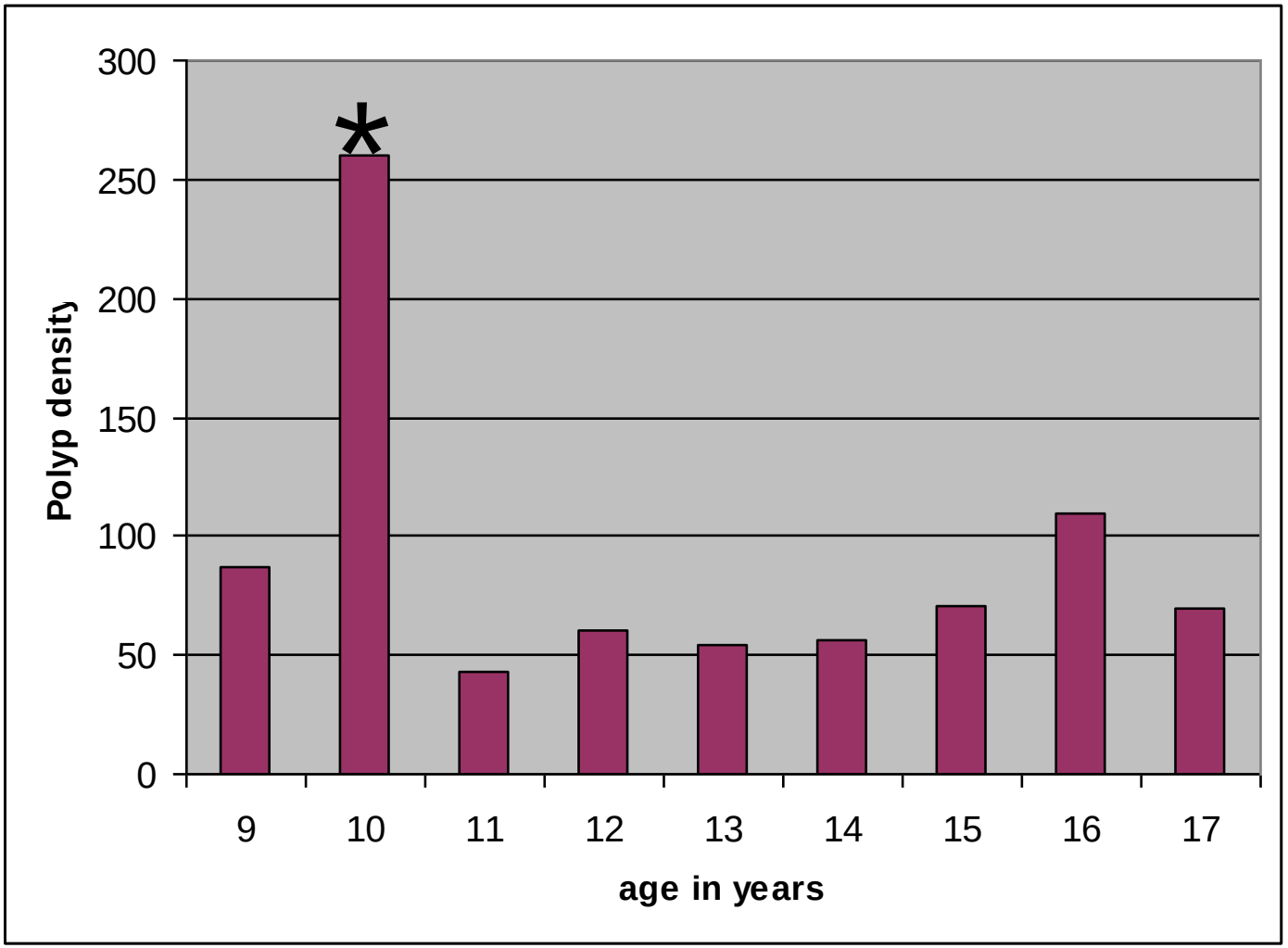
108 mild - moderate dysplasia

Prospective data on polyp density at colonoscopy 2004-08. N=50. Median age 14years

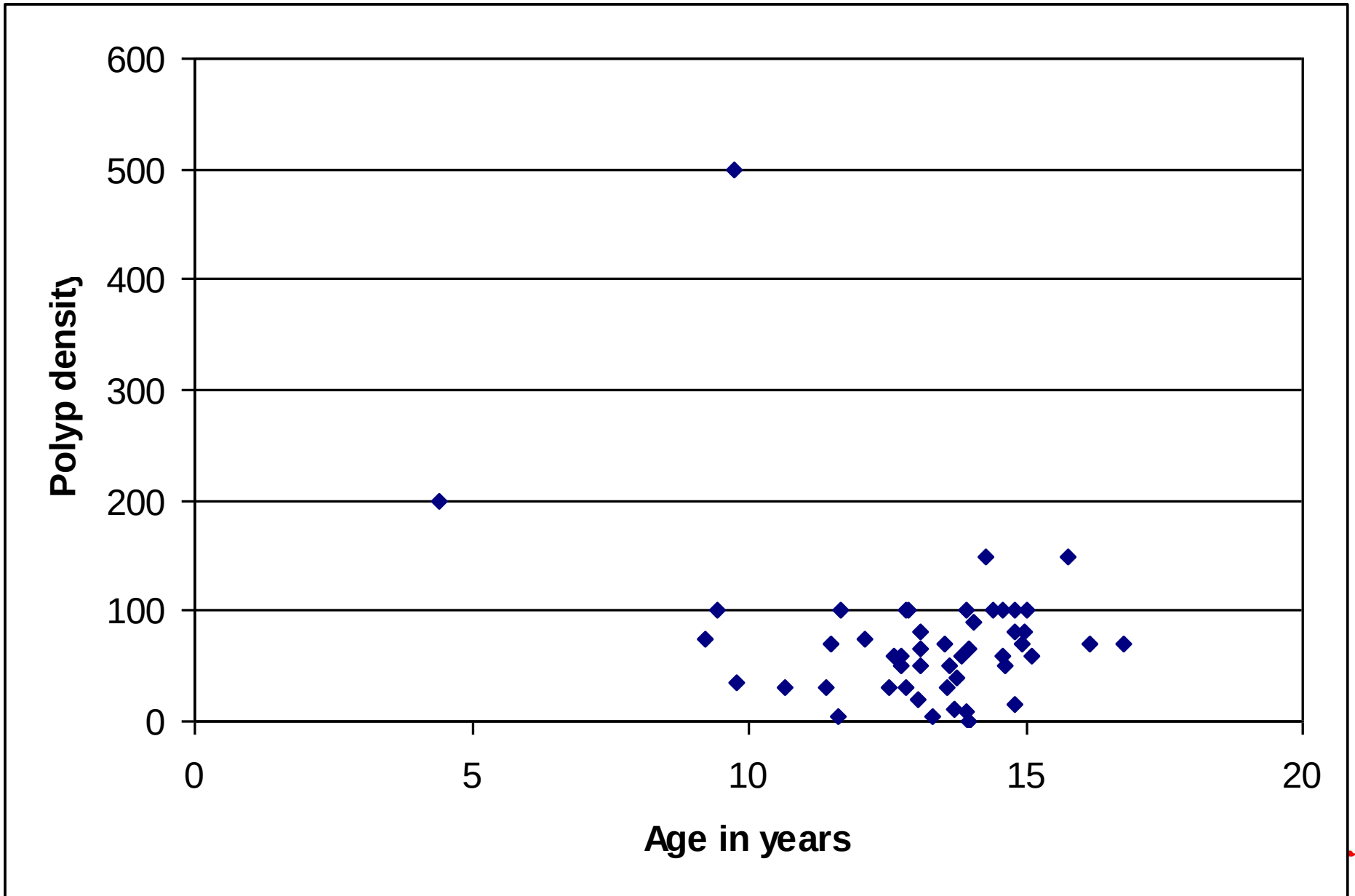


Polyp density according to age. N=50. Prospective data, 2004-2008

* N=2



Which children had high polyp density?



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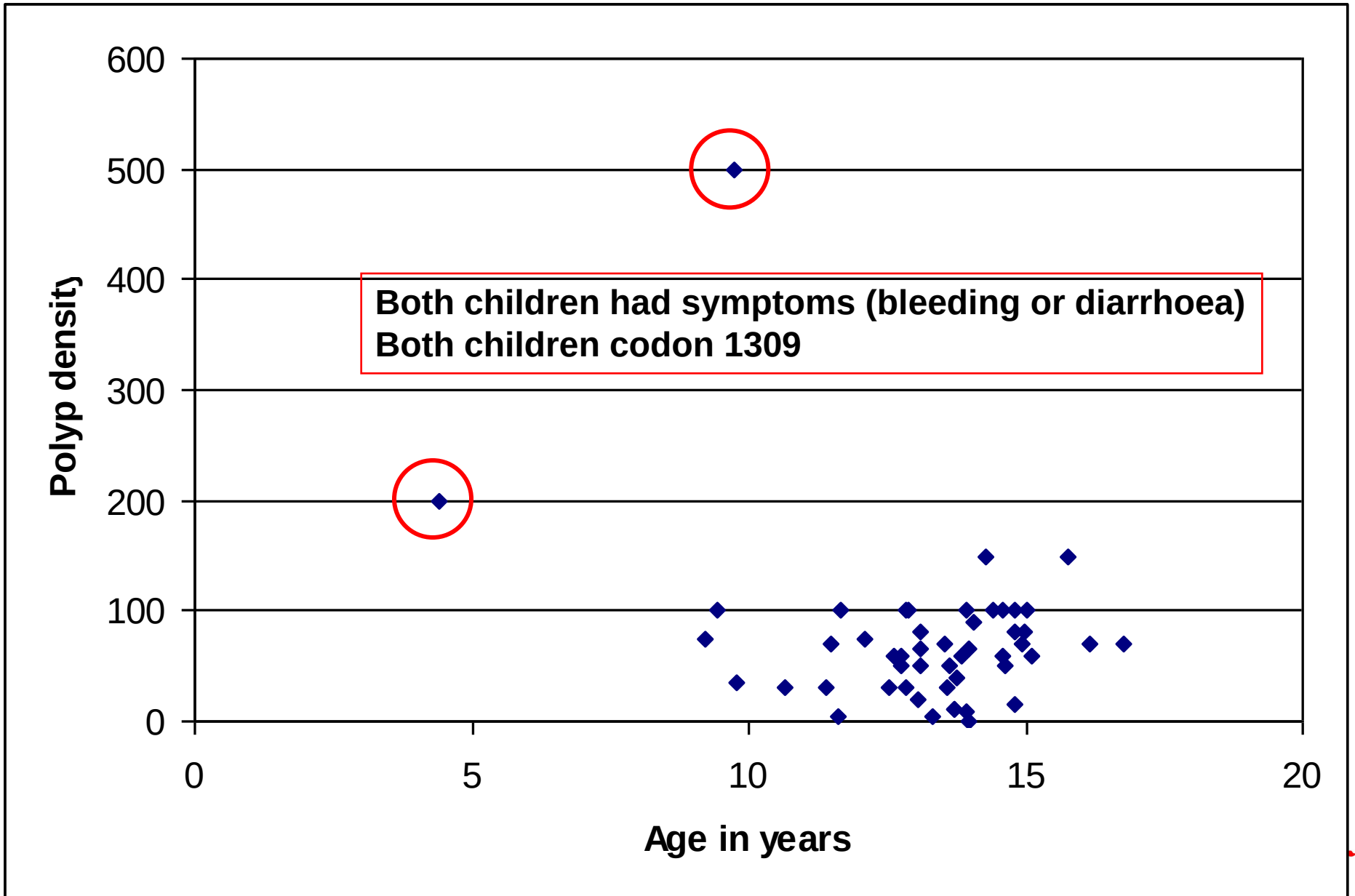


But when will you develop a cancer?

Table 3 Proportion of FAP patients with CRC diagnosed at $\leqslant$20 years of age*

Polyposis registry	Total number of CRCs	Number of CRCs (%) diagnosed		
		0–10 years	11–15 years	16–20 years
The Netherlands	106	0	1	1
Denmark	190	0	0	3
Germany	524	0	1	7
St Mark's	96	0	0	3
Finland	157	0	0	1
Total	1073	0	2 (0.2%)	15 (1.3%)

Guidelines for the clinical management of familial adenomatous polyposis (FAP)

H F A Vasen,[1] G Möslein,[2] A Alonso,[3] S Aretz,[4] I Bernstein,[5] L Bertario,[6] I Blanco,[7] S Bülow,[8] J Burn,[9] G Capella,[10] C Colas,[11] C Engel,[12] I Frayling,[13] W Friedl,[4] F J Hes,[14]

So who is at risk of early cancers?

CASE REPORT

Rapidly progressive adenomatous polyposis in a patient with germline mutations in both the *APC* and *MLH1* genes: the worst of two worlds

R Scheenstra, F E M Rijcken, J J Koornstra, H Hollema, R Fodde, F H Menko, R H Sijmons, C M A Bijleveld, J H Kleibeuker

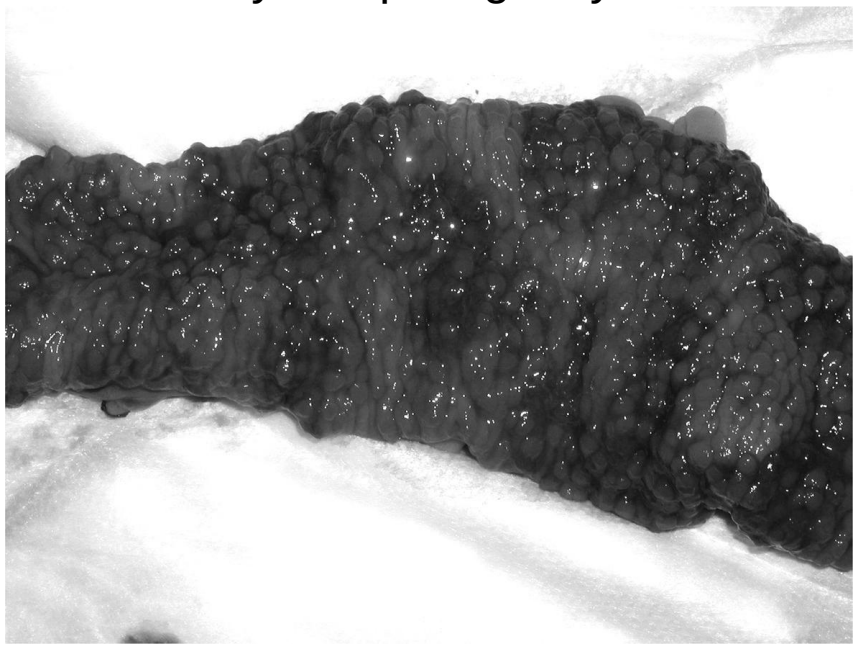
Gut 2003;**52**:898–899

Early childhood presentation of FAP

- No FH
- Presents with rectal bleeding alone
- CHRPE
- Mutation codon 1309

- Youngest symptomatic FAP child

Colectomy sample age 4 years

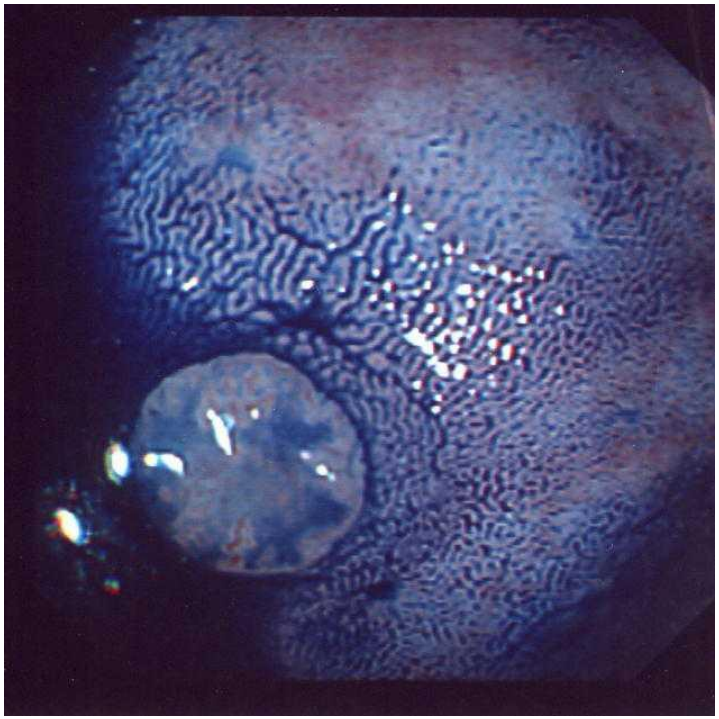


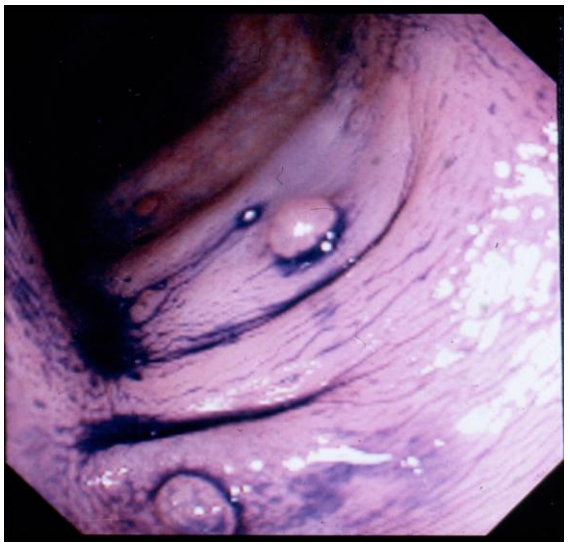
Symptomatic Polyposis in a Four-Year-Old: The Exception Proves the Rule
Will, Phillips, Hyer, Clark.

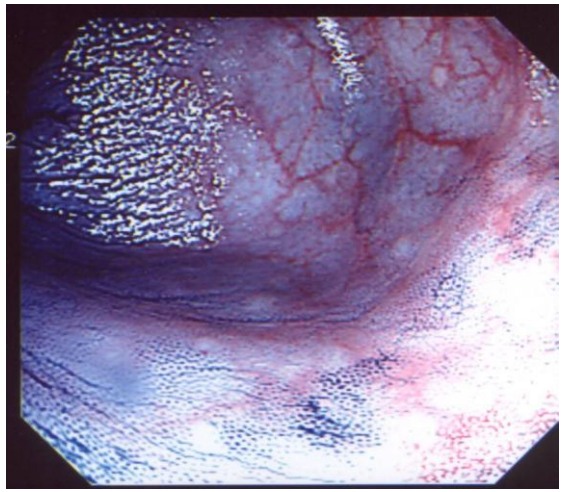
Conclusion -

There were no cases of CRC at or before the age of 10 years, and an incidental case between age 11 and 15 years. Based on these findings, the European group advises starting endoscopic surveillance from the early teens. Since some patients, especially those with a mutation located at codon 1309 in the *APC* gene (see below), may develop severe polyposis of the colorectum before the age of 10, attention must be paid to FAP-related symptoms.[27] These symptoms may include increasing bowel movements, looser stools, mucous discharge, rectal bleeding, abdominal or back pain. In symptomatic patients, endoscopic investigation may be indicated at any age.

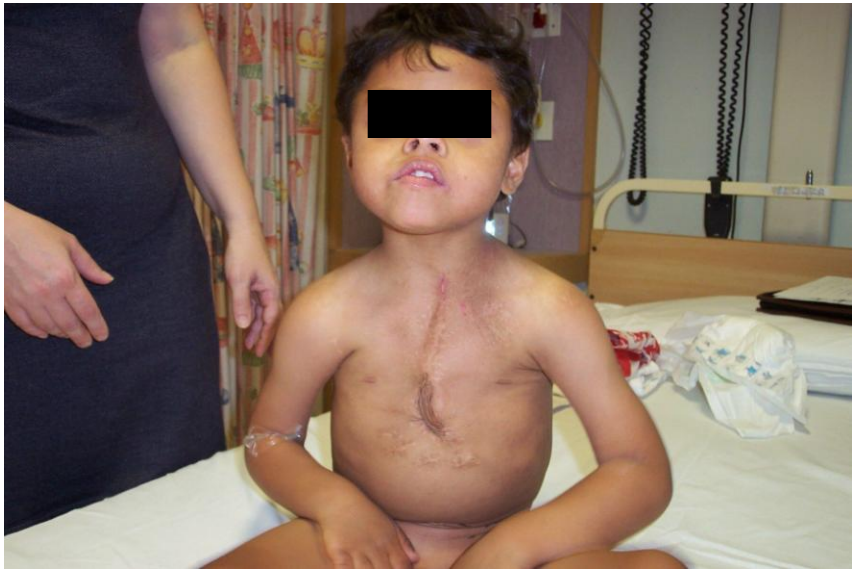
Dye spray in FAP – identifying dysplasia & adenomas

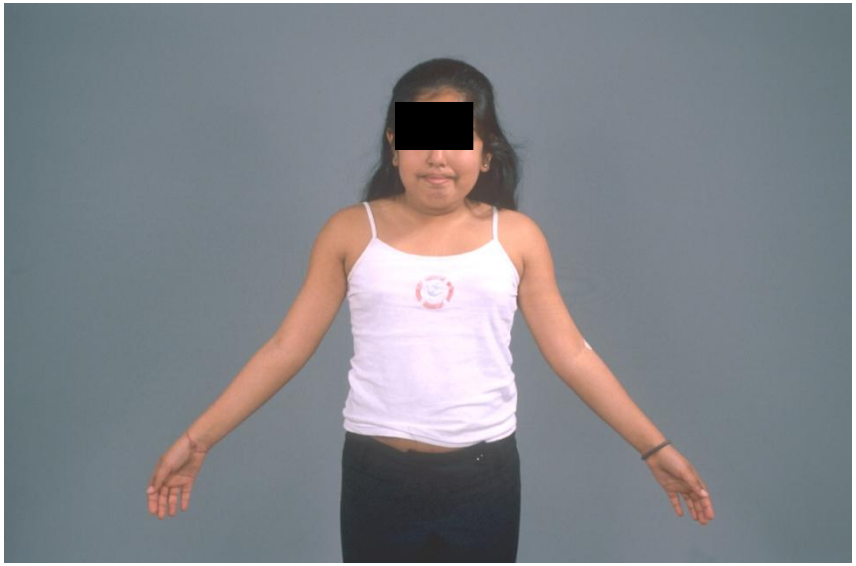


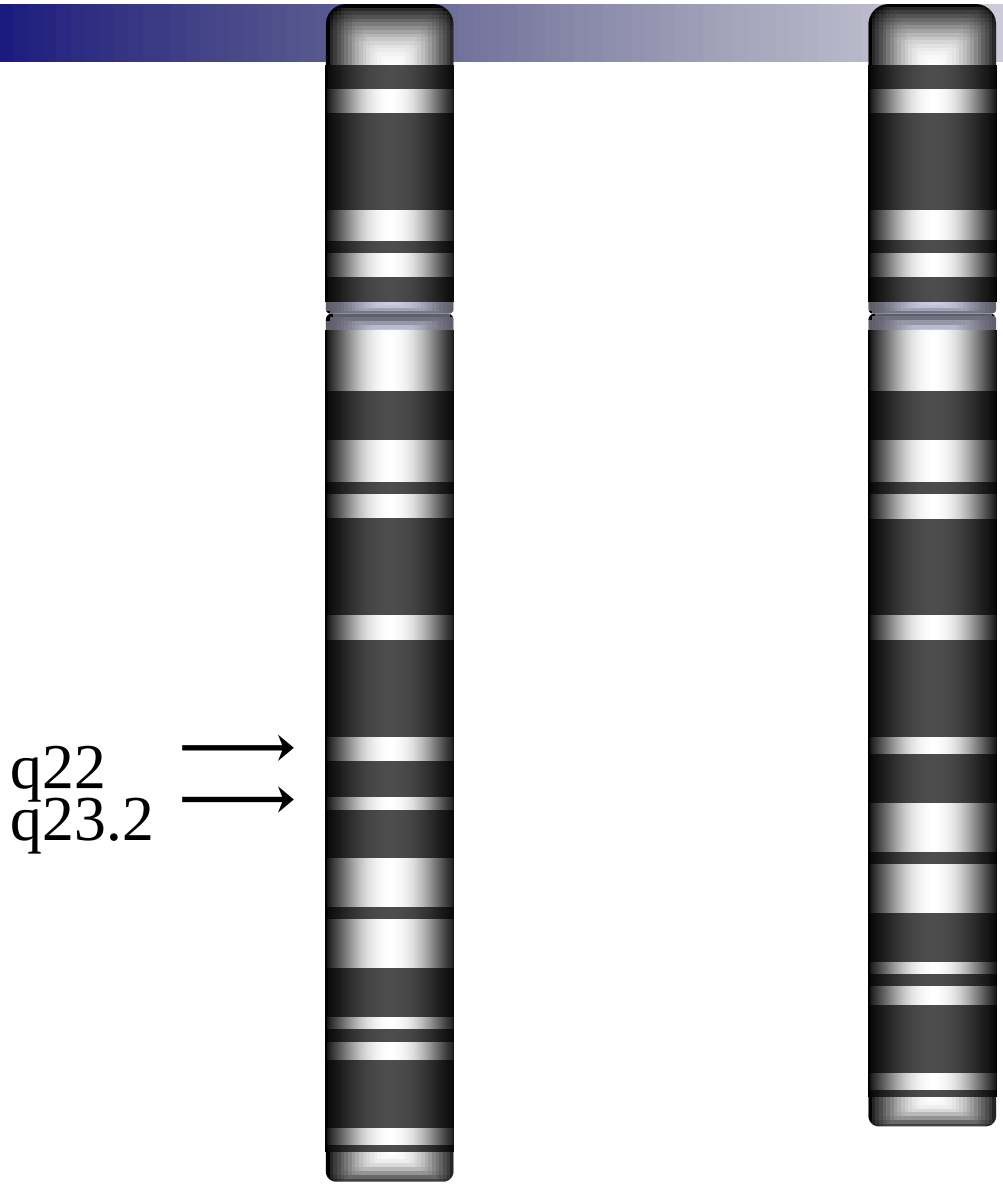




Dysmorphic syndromes and FAP





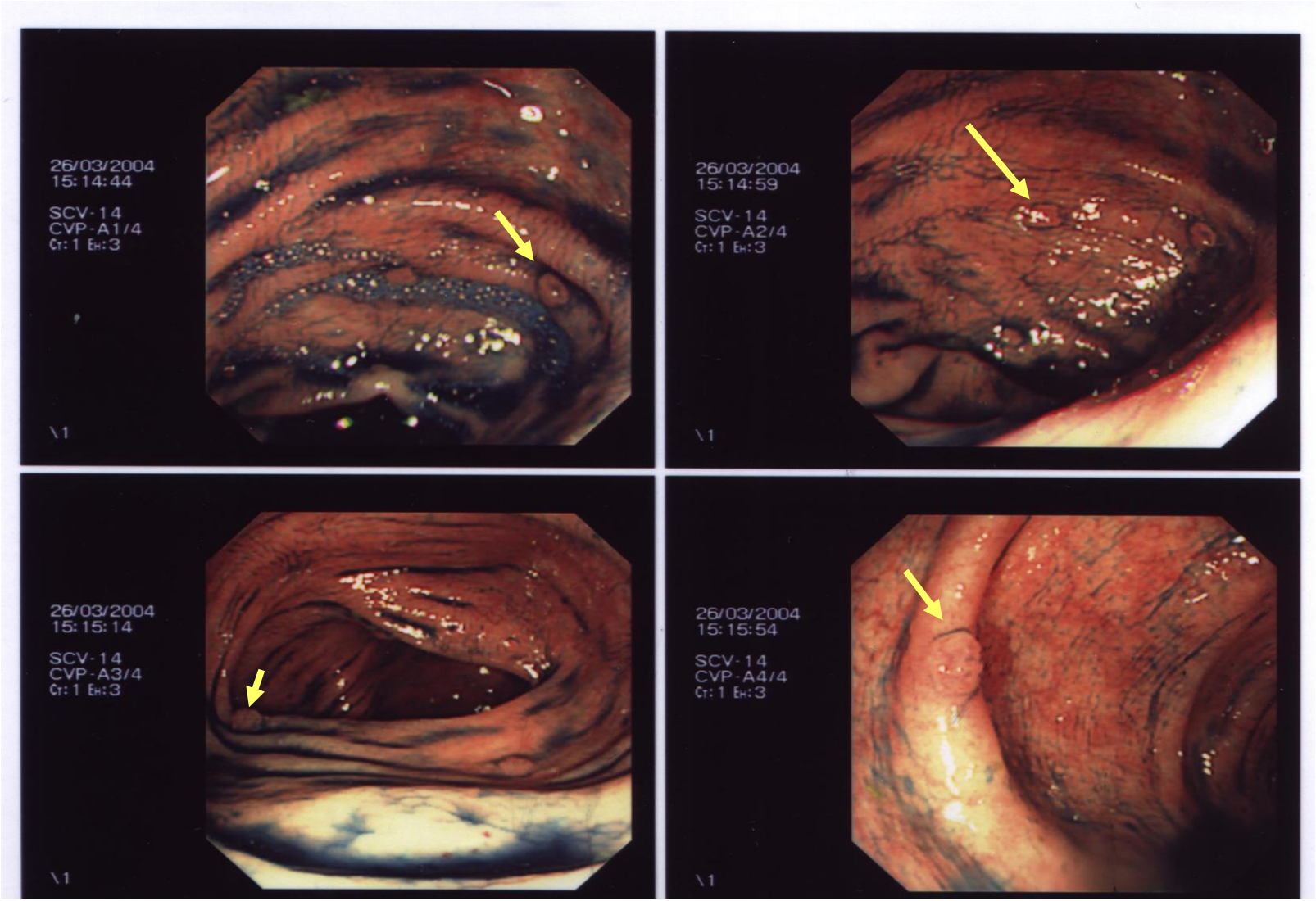


Ideogram showing deletion 5q deletion with Turner

5

del (5) (q22q23.2)

A case of mosaic Turner syndrome and 5q deletion causing Familial Adenomatous Polyposis.
Walker, Frayling, Randhawa, Holder, Hyer



Upper GI surveillance in FAP

Not St Mark's Practice

Table 6 The progression of duodenal polyposis in familial adenomatous polyposis

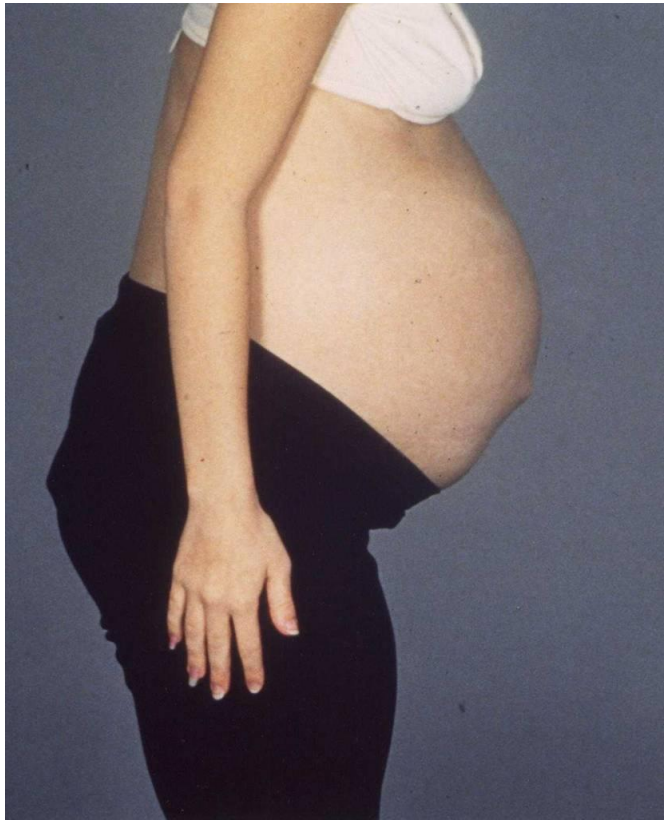
Author	Groves	Saurin	Bulow
Year of publication	2002	2004	2004
Subjects	99	35	368
Mean age (years)	42	37	25
Sex (% male)	55	57	49
Mean follow-up (years)	10	4	7.6
Spigelman stage IV			
at initial examination	9.6%	14%	7%
at last follow-up	14%	35%	15%
Duodenal cancer during follow-up	6*	0	4†

*Spigelman stage at previous endoscopy: II, III, IV, IV, IV, IV.
†Spigelman stage at previous endoscopy: II, III, IV, IV.

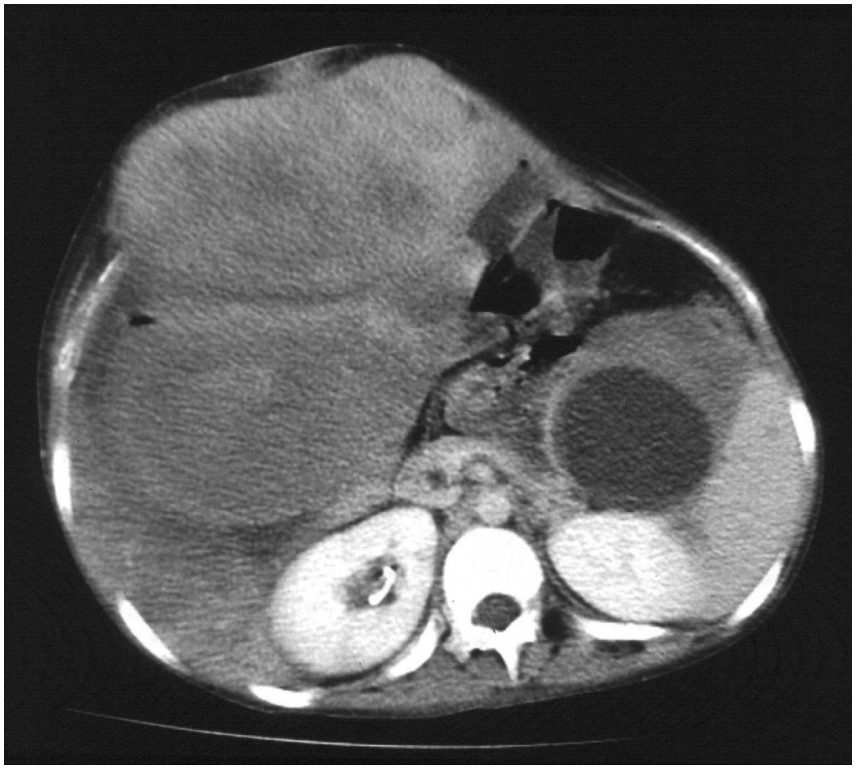
Extraintestinal manifestations

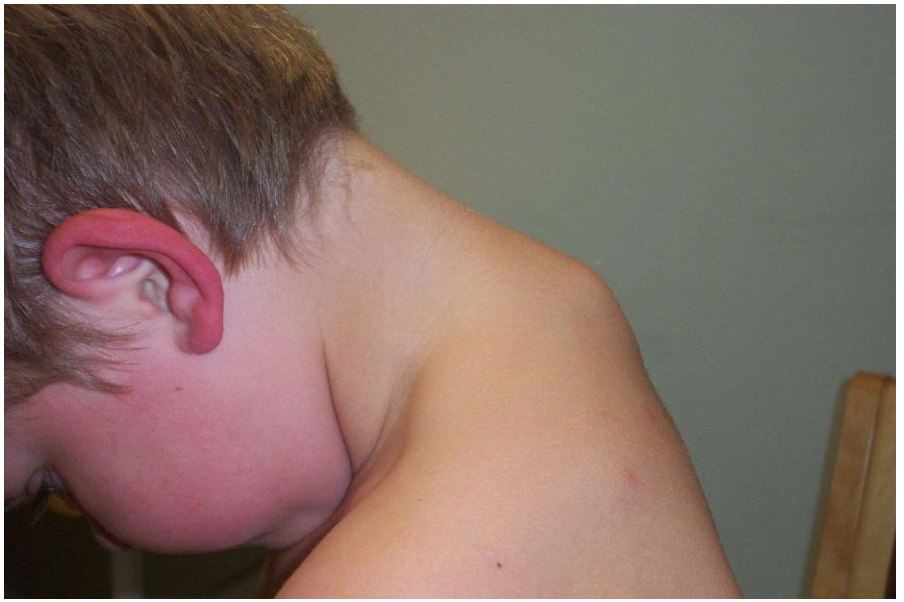
Table 2 Extra-intestinal features in familial adenomatous polyposis

Benign lesions	Malignant lesions
Congenital hypertrophy of the retinal pigmented epithelium (70–80%)	Thyroid cancer (2–3%)
Epidermoid cysts (50%)	Brain tumour (<1%)
Osteoma (50–90%)	Hepatoblastoma (~1%)
Desmoid tumour (10–15%)	
Supernumerary teeth (11–27%)	
Adrenal gland adenomas (7–13%)	

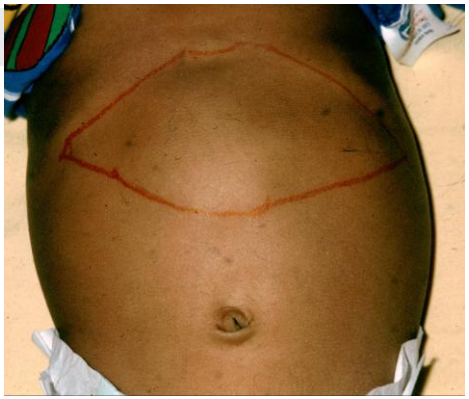


Desmoid and extra intestinal manifestations





Hepatoblastoma and FAP – UK experience

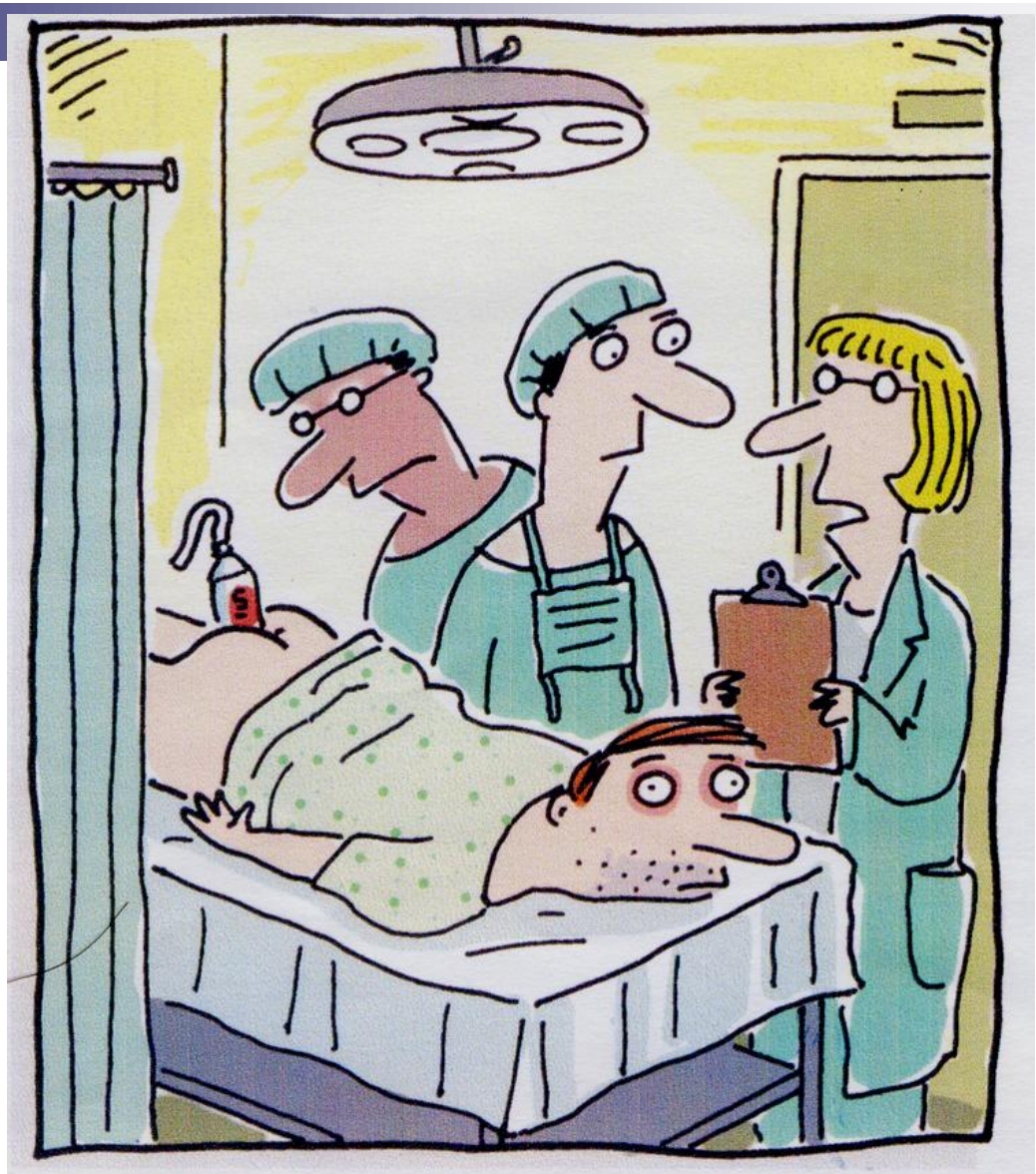


Screening for germline APC mutations in sporadic hepatoblastoma: is it worthwhile?

Harvey, Clark S, Hyer W, Hadzic N, Tomlinson I, Hinds R

18 male/11 female patients median age at HB diagnosis of 22 months. Sequencing of the whole APC gene failed to reveal any of the previously described mutations.

This study does not support the need for routine germline APC mutation screening in sporadic HB.



" That's correct, Doctor. He claims
that the instructions said
to squeeze toothpaste from bottom."

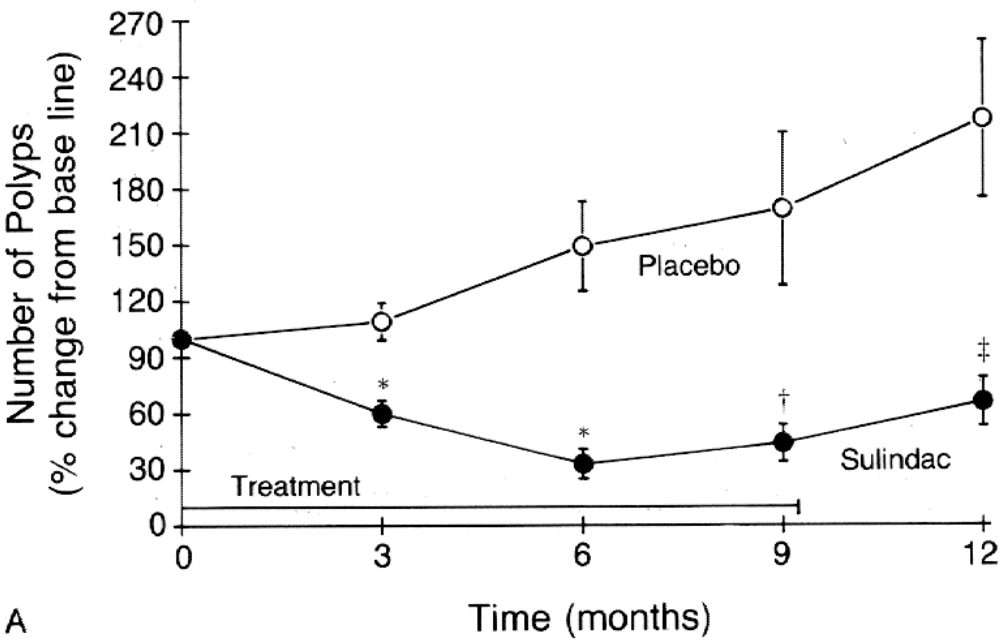
St. Louis, Missouri,
October 18 2000

Drug therapies are replacing a lot of medicines
as we used
to know it

Now the chance for adenoma prevention?

NEJM 328:1313-1316 1993
Treatment of Colonic and Rectal Adenomas with Sulindac in Familial Adenomatous Polyposis

Francis M. Giardiello



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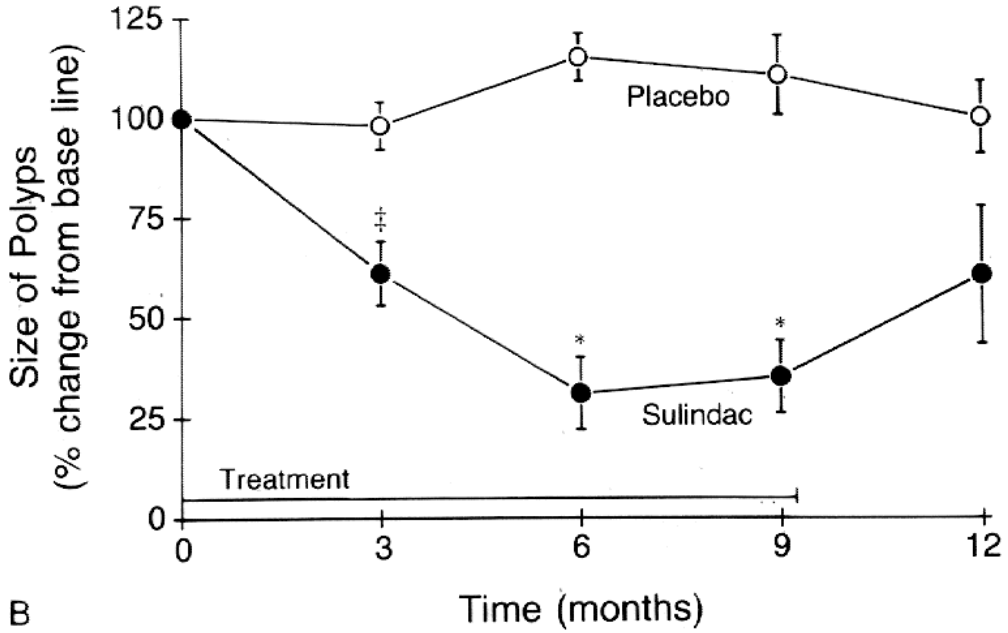
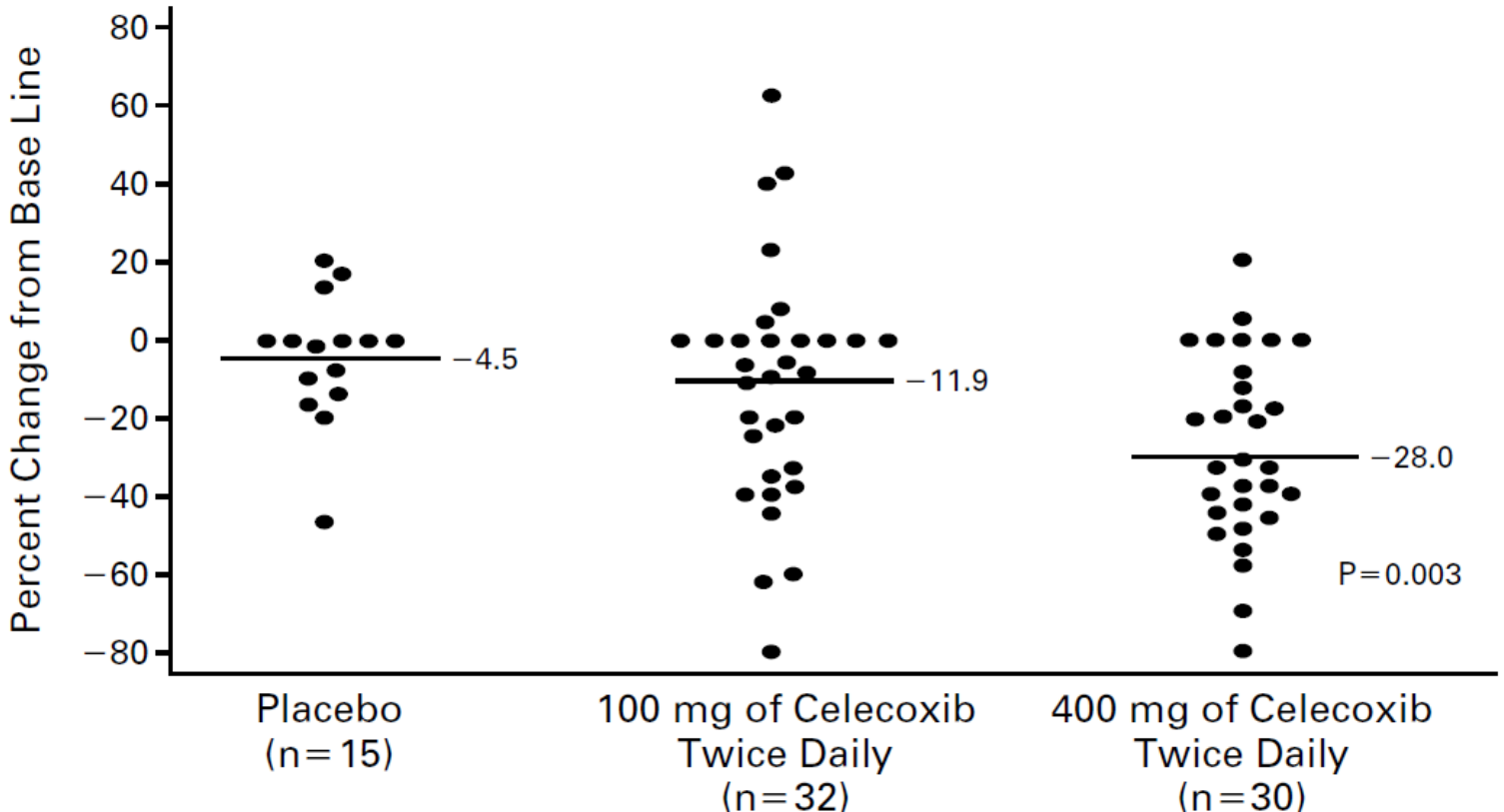


B

The New England Journal of Medicine

THE EFFECT OF CELECOXIB, A CYCLOOXYGENASE-2 INHIBITOR, IN FAMILIAL ADENOMATOUS POLYPOSIS

GIDEON STEINBACH, M.D., PH.D., PATRICK M. LYNCH, M.D., J.D., ROBIN K.S. PHILLIPS, M.B., B.S., MARINA H. WALLACE, M.B., B.S., ERNEST HAWK, M.D., M.P.H., GARY B. GORDON, M.D., PH.D., NAOKI WAKABAYASHI, M.D., PH.D., BRIAN SAUNDERS, M.D., YU SHEN, PH.D., TAKASHI FUJIMURA, M.D., LI-KUO SU, PH.D., AND BERNARD LEVIN, M.D.



Graeme Peterson (centre) leaves court with his wife, Julia, and his lawyer Peter Gordon (right)

Australian court finds Vioxx increased risk of heart attack

Ray Moynihan BYRON BAY, AUSTRALIA

A court in Melbourne has ruled that the anti-arthritis drug rofecoxib (Vioxx) increased the risk of heart attack, while finding that the Australian subsidiary of its manufacturer engaged in negligent and misleading behaviour.

quality" and that, because "Vioxx involved about a doubling of the risk of heart attack, it was not reasonably fit for the purpose of being used for the relief of arthritic pain" (www.austlii.edu.au/au/cases/cth/FCA/2010/180.html).

The class action by at least 600 other Australians is now

in the United Kingdom.

"The activities which the judge found to be negligent and misleading were engaged in by the Merck group in an identical way around the world," said Mr Gordon.

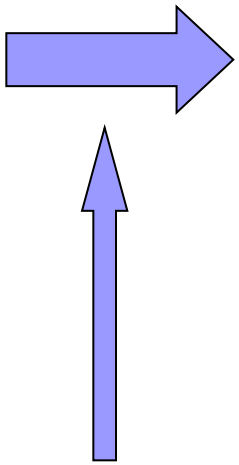
However, a Merck spokesperson told the *BMJ* it was acting responsibly by defending

Mechanism for COX 2 injury to endothelium

Coxibs and Cardiovascular Disease

Garret A. FitzGerald, M.D.

Derived from
COX 2 – not COX 1



taglandin I_2 in healthy volunteers.[2] Prostaglandin I_2 had previously been shown to be the predominant cyclooxygenase product in endothelium, inhibiting platelet aggregation, causing vasodilatation, and preventing the proliferation of vascular smooth-muscle cells in vitro. However, it was as-

Unopposed thomboxane, MI risk

How might Coxibs cause increased MI risk

- Depression of I_2 prostaglandin formation
- Elevate blood pressure
- Accelerate atherogenesis
- Thus exaggerated thrombotic response

"The higher a **patient's intrinsic risk of cardiovascular disease**
The more likely it would be that such a hazard would manifest itself
Rapidly in the form of a clinical event"

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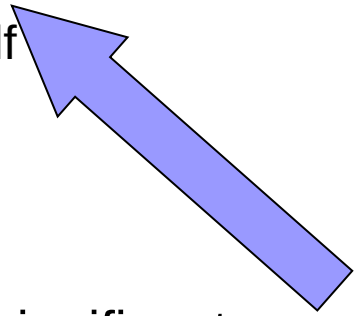


insignificant
in an adolescent

The NEW ENGLAND JOURNAL of MEDICINE

ORIGINAL ARTICLE

Celecoxib for the Prevention of Colorectal Adenomatous Polyps

Nadir Arber, M.D., Craig J. Eagle, M.D., Julius Spicak, M.D., István Rácz, M.D.,

The NEW ENGLAND JOURNAL of MEDICINE

ESTABLISHED IN 1812 AUGUST 31, 2006 VOL. 355 NO. 9

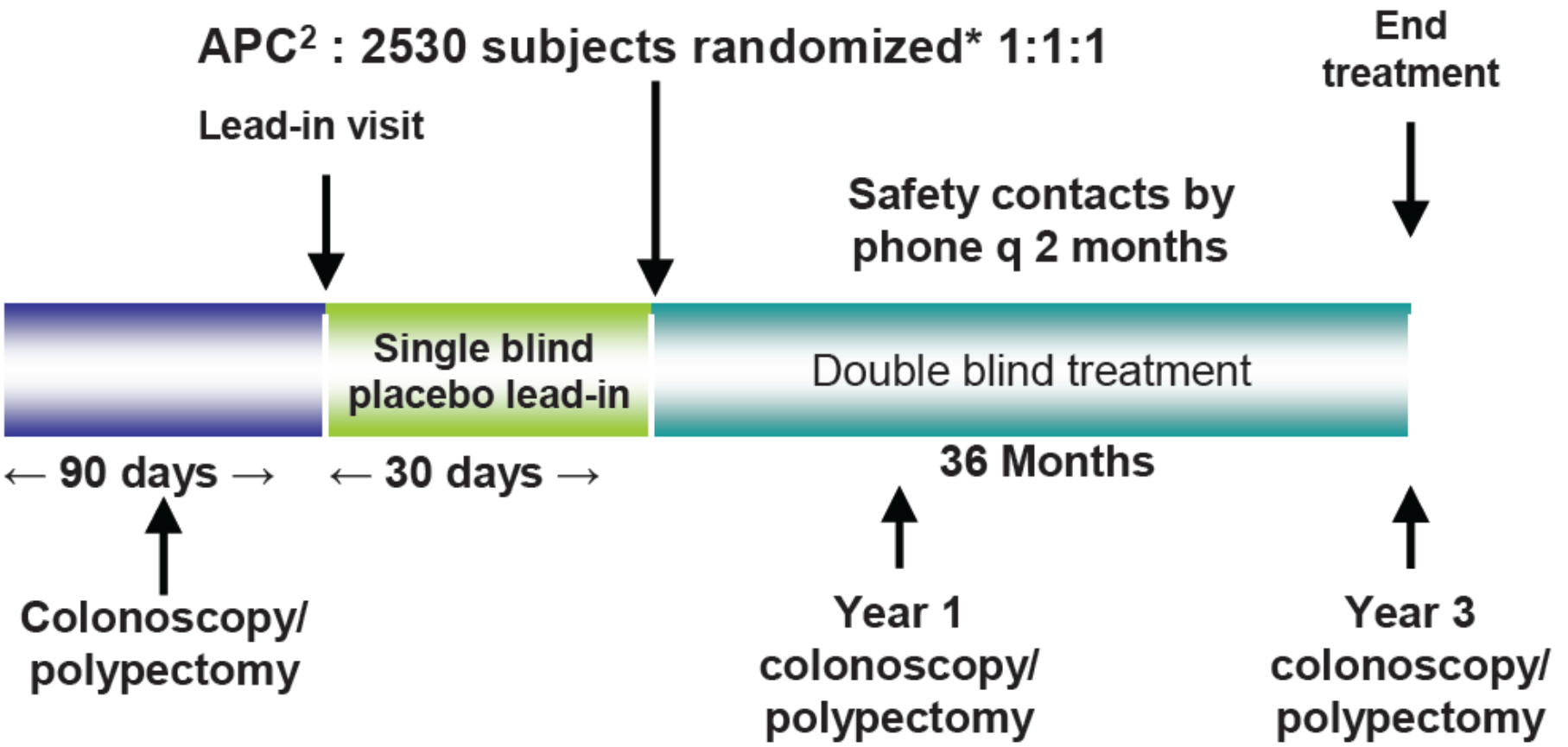
Celecoxib for the Prevention of Sporadic Colorectal Adenomas

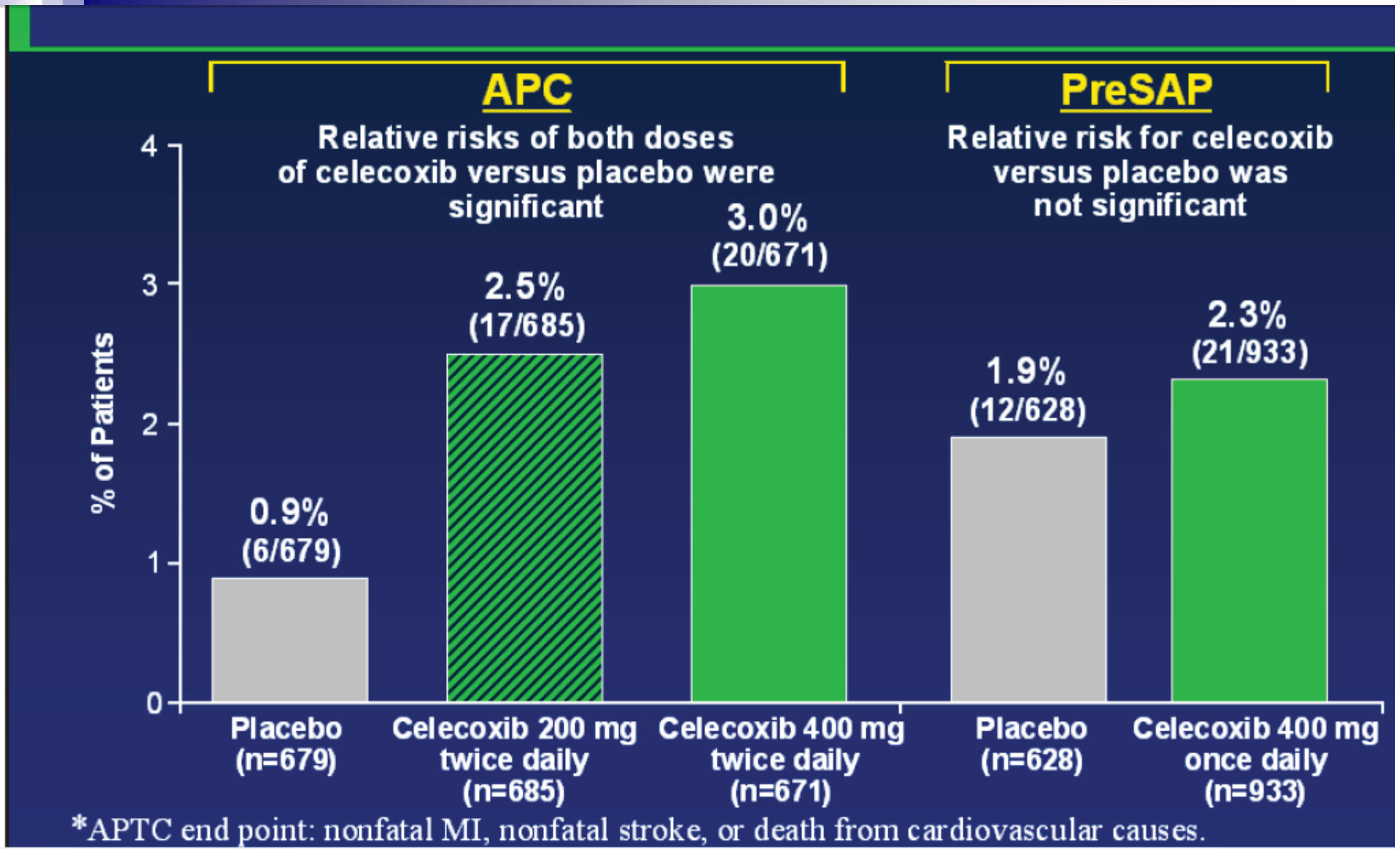
Monica M. Bertagnolli, M.D., Craig J. Eagle, M.D., Ann G. Zauber, Ph.D., Mark Redston, M.D.,

Study Design

PreSAP[1]: 1561 subjects randomized* 3:2

APC[2] : 2530 subjects randomized* 1:1:1





*APTC end point: nonfatal MI, nonfatal stroke, or death from cardiovascular causes.

CVS risks of COX -2 inhibitors outweigh the potential chemopreventive benefits with sporadic colorectal adenomas – this is not so for FAP

- But the FAP cohort are significantly younger than the PreSaP cohort.
- Do they confer the same CVS risk?
- What paediatric data exists with COX2 inhibitors?

Mechanism for COX 2 injury to endothelium

Coxibs and Cardiovascular Disease

Garret A. FitzGerald, M.D.

taglandin I_2 in healthy volunteers.[2] Prostaglandin I_2 had previously been shown to be the predominant cyclooxygenase product in endothelium, inhibiting platelet aggregation, causing vasodilatation, and preventing the proliferation of vascular smooth-muscle cells in vitro. However, it was as-

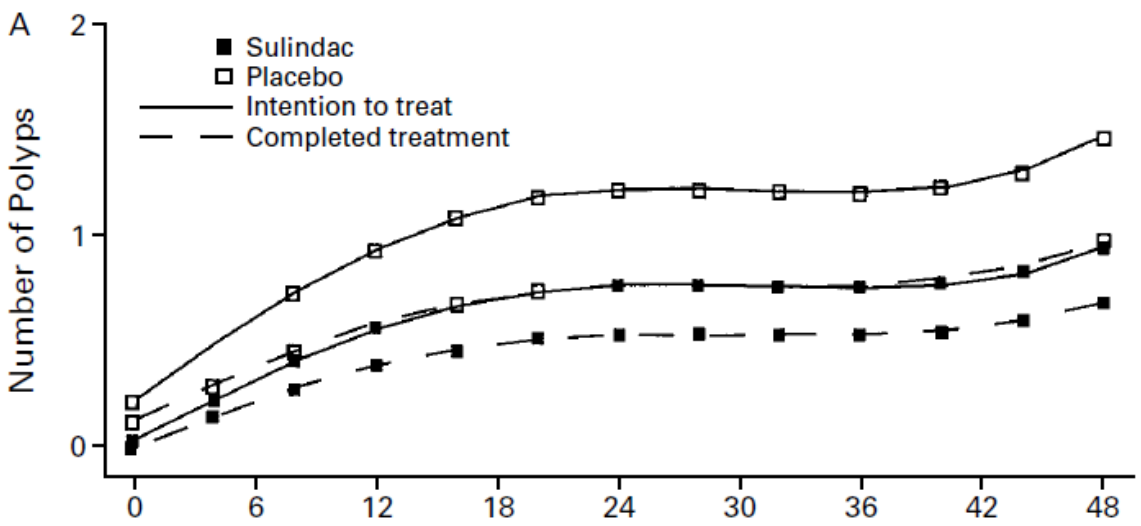
Adenoma prevention with sulindac

The New England Journal of Medicine

PRIMARY CHEMOPREVENTION OF FAMILIAL ADENOMATOUS POLYPOSIS WITH SULINDAC

FRANCIS M. GIARDIELLO, M.D., VINCENT W. YANG, M.D., PH.D., LINDA M. HYLIND, B.S., R.N., ANNE J. KRUSH, M.S., GLORIA M. PETERSEN, PH.D., JILL D. TRIMBATH, M.S., STEVEN PIANTADOSI, M.D., PH.D., ELIZABETH GARRETT, PH.D., DEBORAH E. GEIMAN, M.S., WALTER HUBBARD, PH.D., G. JOHAN A. OFFERHAUS, M.D., M.P.H., PH.D., AND STANLEY R. HAMILTON, M.D.

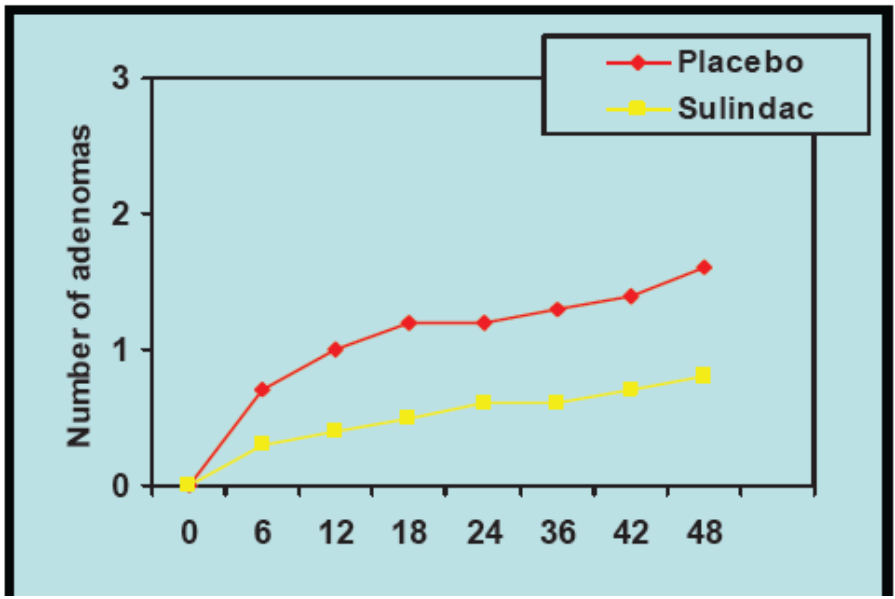
Sulindac did not slow the development of adenomas



Effect of Sulindac on Rectal Polyps in Pediatric APC Carriers

N = 41
Age = 8-25 yrs
Placebo, sulindac 75 mg or 150 mg BID
Flexible sigmoidoscopy q 4 months

End of study Effect on Adenomas	Sulindac N=21 (%)	Placebo N =20 (%)
0	12 (57)	9 (45)
1-10	3 (14)	6 (30)
Adenoma ≥ 2.5 mm	4 (19)	7 (35)
Tubular Adenoma	9 (43)	11 (55)



What about safety at a higher dose e.g.. in patients with FAP?

The Safety and Efficacy of Celecoxib in Children With Familial Adenomatous Polyposis

Patrick M. Lynch, MD, JD[1], Gregory D. Ayers, MS[2], Ernie Hawk, MD, MPH[3], Ellen Richmond, RN, MSN[3], Craig Eagle, MD[4], Mabel Woloj, PhD[4], James Church, MD[5], Hennie Hasson, RN[6], Sherri Patterson, RN[7], Elizabeth Half, MD[8] and Carol A. Burke, MD[8]

Table 1. Celecoxib dose assignments by body weight and cohort

	Cohort 1, *n*=6 (2:1 drug: placebo)	Cohort 2, *n*=6 (2:1 drug: placebo)	Cohort 3, *n*=6 (2:1 drug: placebo)
Body weight	Celecoxib dose 4 mg/kg	Celecoxib dose 8 mg/kg	Celecoxib dose 16 mg/kg
25.0–37.5 kg	50 mg BID	100 mg BID	200 mg BID
37.6–50.0 kg	100 mg BID	150 mg BID	300 mg BID
>50.0 kg	100 mg BID	200 mg BID	400 mg BID

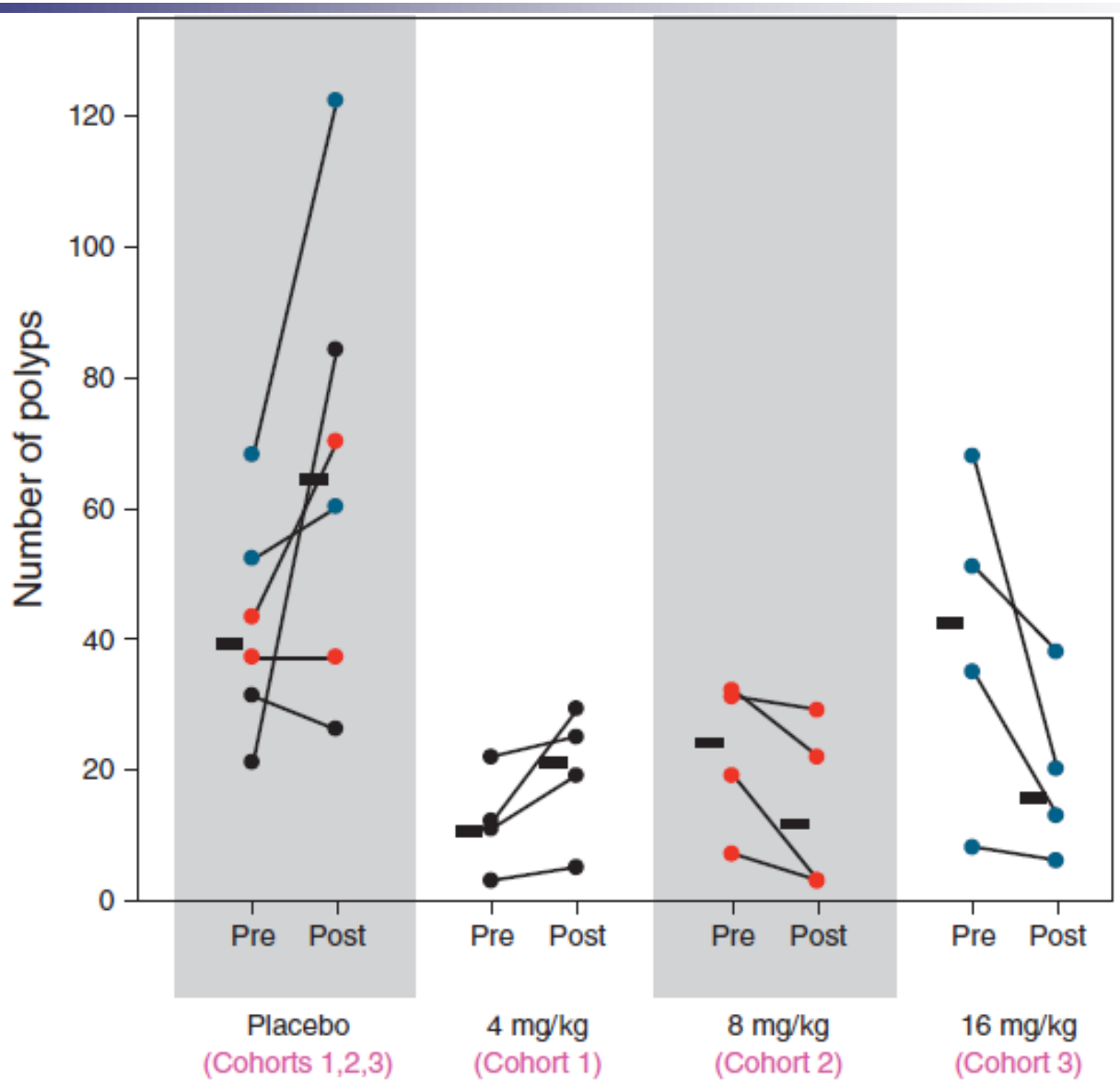


Figure 2. Celecoxib dose–response relationship among pediatric patients with familial adenomatous polyposis. The number of polyps at baseline

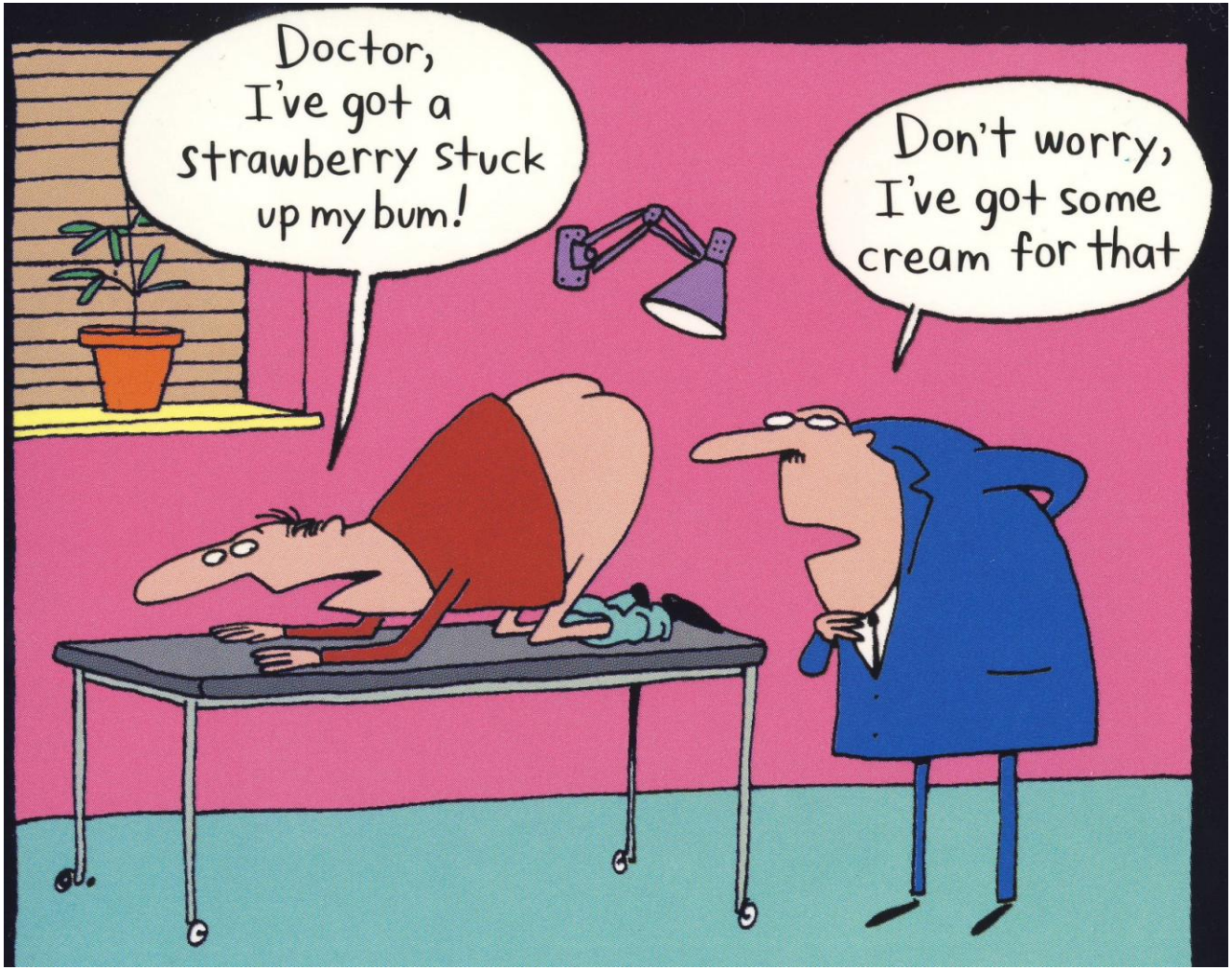
Phase I Pediatric Celecoxib Trial Adverse Events

Rx Group	Grade I	Grade II
Placebo	24	0
4 mg/kg/d	22	2 (N&V, diarrhea, < 3 d)
8 mg/kg/d	5	2 (nausea, HA, < 1 d)
16 mg/kg/d	21	0

- Sue Clark & Professor Phillips
- Warren Hyer, Jo Rawlings, Chris Fraser
- Polyposis Registry, St Mark's Hospital

Why bother doing the study?

- Celecoxib could be used as an adjunct to regular surveillance
- Information about the safety and pharmacokinetics of COX 2 inhibitors in children



THE EFFECT OF CELECOXIB, A CYCLOOXYGENASE-2 INHIBITOR, IN FAMILIAL ADENOMATOUS POLYPOSIS

GIDEON STEINBACH, M.D., PH.D., PATRICK M. LYNCH, M.D., J.D., ROBIN K.S. PHILLIPS, M.B., B.S., MARINA H. WALLACE, M.B., B.S., ERNEST HAWK, M.D., M.P.H., GARY B. GORDON, M.D., PH.D., NAOKI WAKABAYASHI, M.D., PH.D., BRIAN SAUNDERS, M.D., YU SHEN, PH.D., TAKASHI FUJIMURA, M.D., LI-KUO SU, PH.D., AND BERNARD LEVIN, M.D.

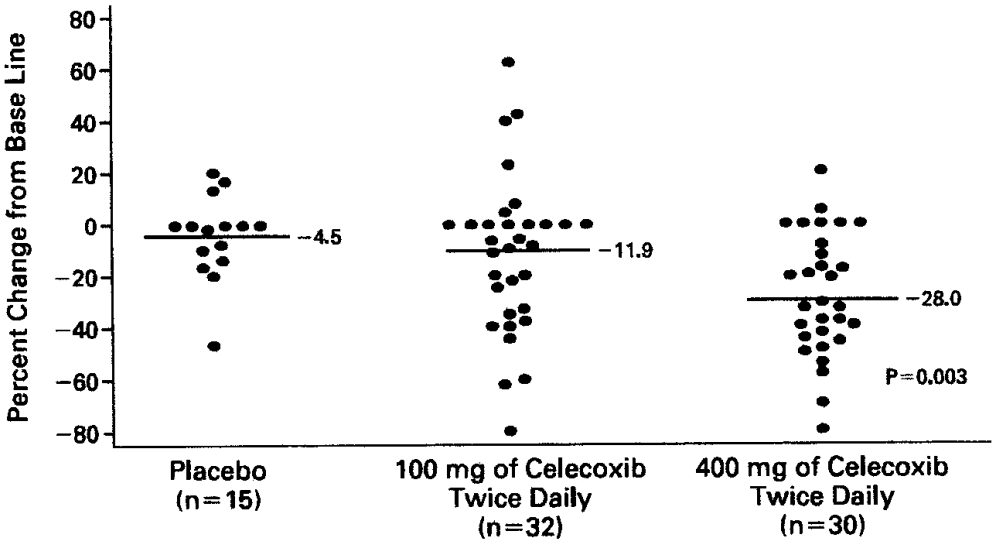


Figure 1. Percent Change from Base Line in the Number of Colorectal Polyps in 77 Patients with Familial Adenomatous Polyposis Who Were Treated with Placebo or Celecoxib (100 mg Twice a Day or 400 mg Twice a Day) for Six Months.

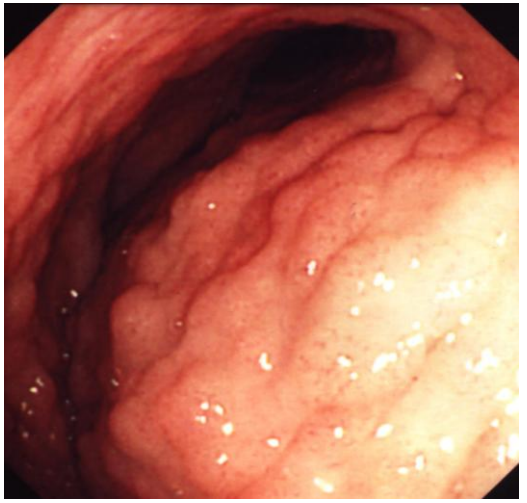
A decrease from base line represents disease regression, and an increase represents disease progression. The horizontal lines show the mean changes. The P value is for the comparison with the placebo group.

Safety data on COX 2 inhibitors in children

Safety and Efficacy of celecoxib in children with FAP

Attard, young, Tajuori, Lynch 2005

"Well tolerated, no systemic side effects"



Reserve for dense rectal polyposis – But should these patients have been Referred for IPPA?

ADVICE ON THE USE OF CELECOXIB AND OTHER SELECTIVE COX-2 INHIBITORS IN LIGHT OF CONCERNS ABOUT CARDIOVASCULAR SAFETY

Dear Colleague

Familial Cancer (2006) 5:237–240
DOI 10.1007/s10689-005-5661-7

In which patients do I perform IRA, and why?

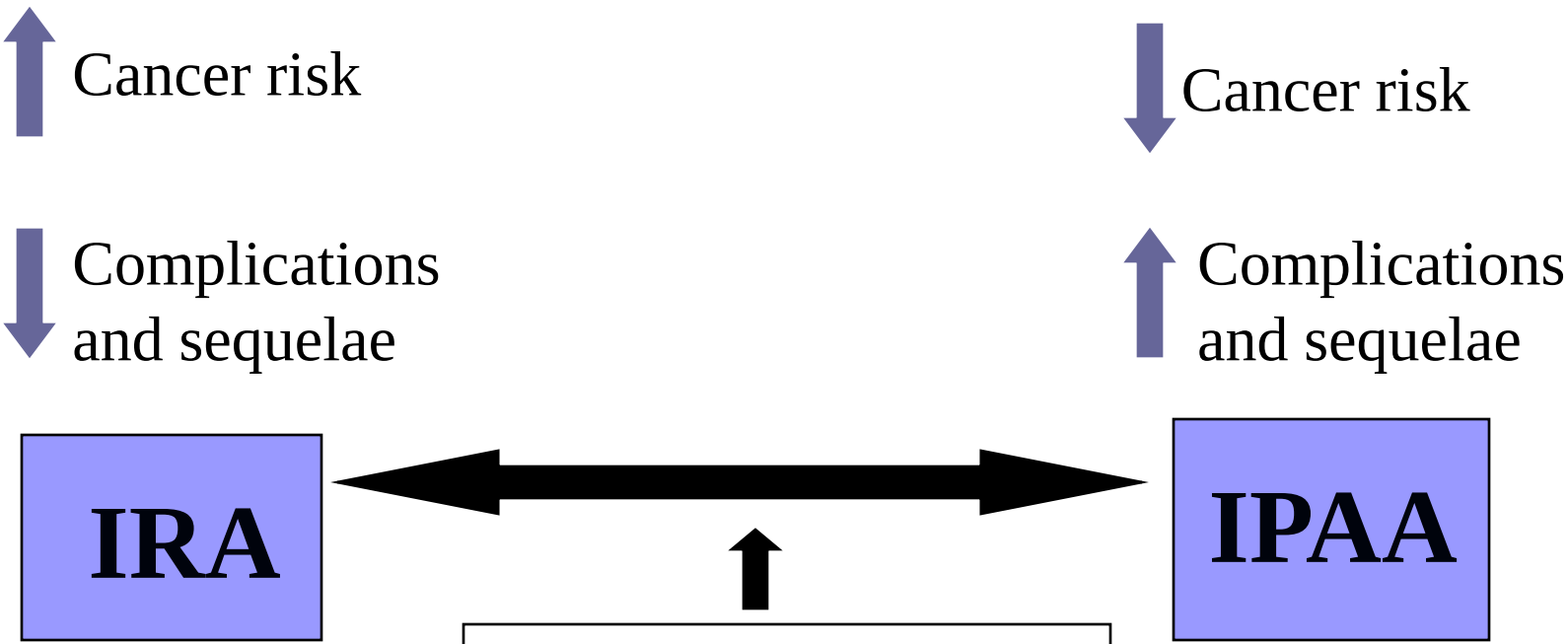
James Church
Department of Colorectal Surgery, Desk A-30, Cleveland Clinic, 9500 Euclid Ave, Cleveland, OH 44195, USA

Table 1. Summary of indications and contraindication, advantages and disadvantages of surgical options for patients with FAP.

Operation	Indications	Contraindications	Advantages	Disadvantages
IRA	<1000 colonic adenomas <20 rectal adenomas	>1000 colonic adenomas >20 rectal adenomas Colon or rectal cancer	Easy operation Can be done laparoscopically Good function	Leaves rectum with inherent cancer risk
IPAA	>1000 colonic adenomas >20 rectal adenomas Colon or rectal cancer	Poor anal sphincters Advanced rectal cancer mandating APR	Minimal risk of rectal cancer Avoids permanent ileostomy	Still needs adenoma surveillance in pouch Decreased fecundity Bowel function unpredictable Complex procedure

IRA if < 20 rectal adenomas
IPAA if mutation 1309, +/- > 20 rectal adenomas

Colectomy in adolescents- IRA or IPAA? St Mark's approach



Genetics – implication for choice of surgery

Mutation	Rectum Preserved	Rectum Removed
157	7	0
540	2	0
1060	6	2
1068	15	1
1309	2	16
1328	0	3
1464	0	1*
1528	3	0
Total	35	23

* Patient choice, mild phenotype.

APC Genotype, Polyp Number, and Surgical Options in Familial Adenomatous Polyposis
The Cleveland Clinic Foundation, Cleveland, Ohio
Annals of Surgery. 227:57-62, 1998.

Guidelines for the clinical management of familial adenomatous polyposis (FAP)

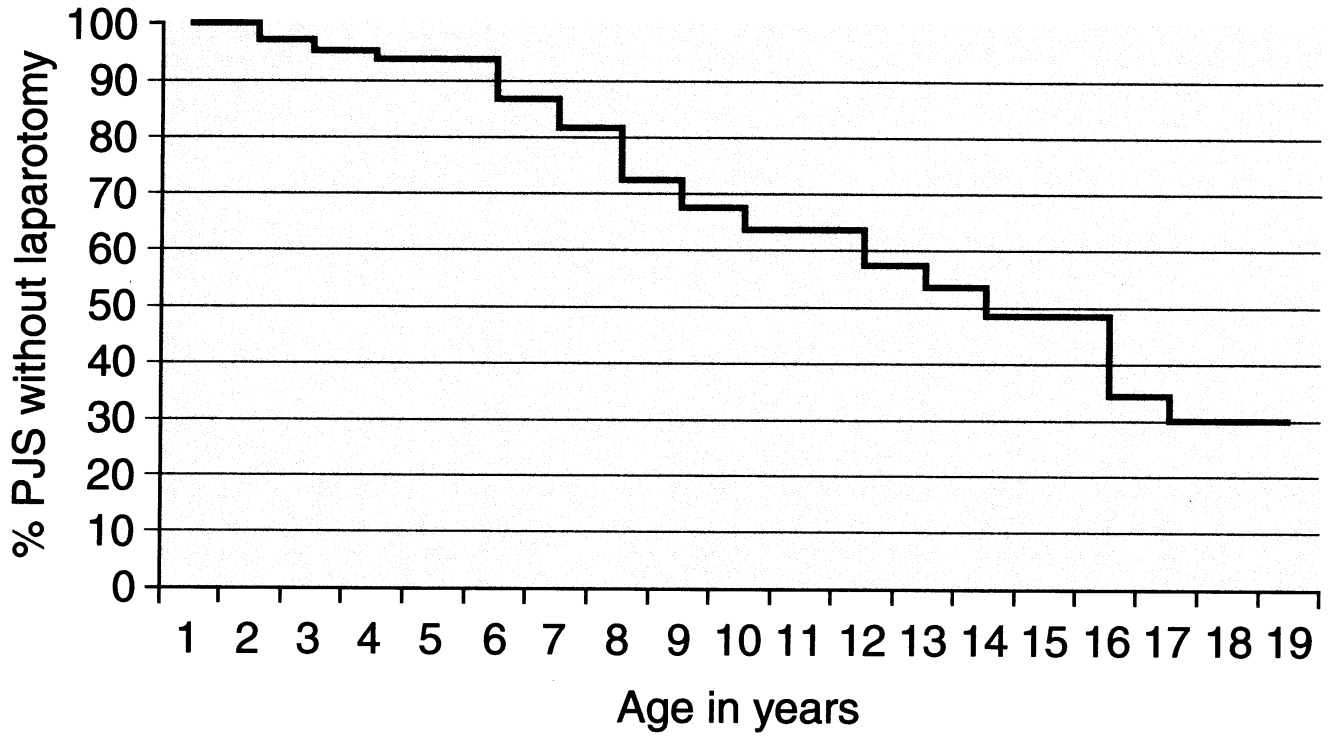
H F A Vasen, G Möslein, A Alonso, S Aretz, I Bernstein, L Bertario, I Blanco, S Bülow, J Burn, G Capella, C Colas, C Engel, I Frayling, W Friedl, F J Hes, S

have their individual merits and weaknesses. The decision on the type of colorectal surgery in patients with FAP depends on many factors including the age of the patient, the severity of rectal (and colonic) polyposis, the wish to have children, the risk of developing desmoids and possibly the site of the mutation in the APC gene. The final decision lies with the patient after being fully informed about the natural history of the disease and the pros and cons of the available surgical options. The group advises that IPAA should preferably be performed in expert centres.

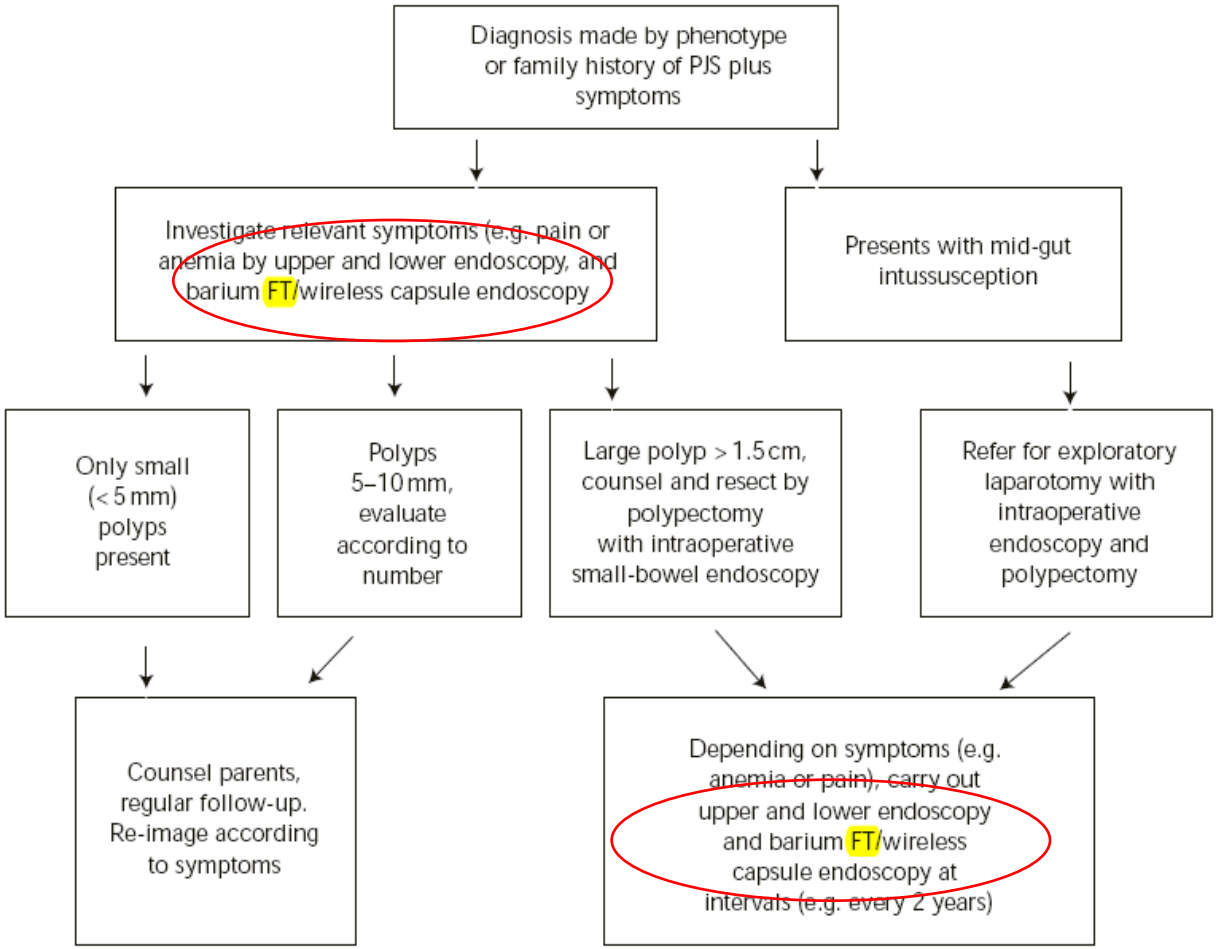
Complications of Childhood Peutz-Jeghers Syndrome: Implications for Pediatric Screening

*R. Hinds, †C. Philp, †W. Hyer, and *J. M. Fell

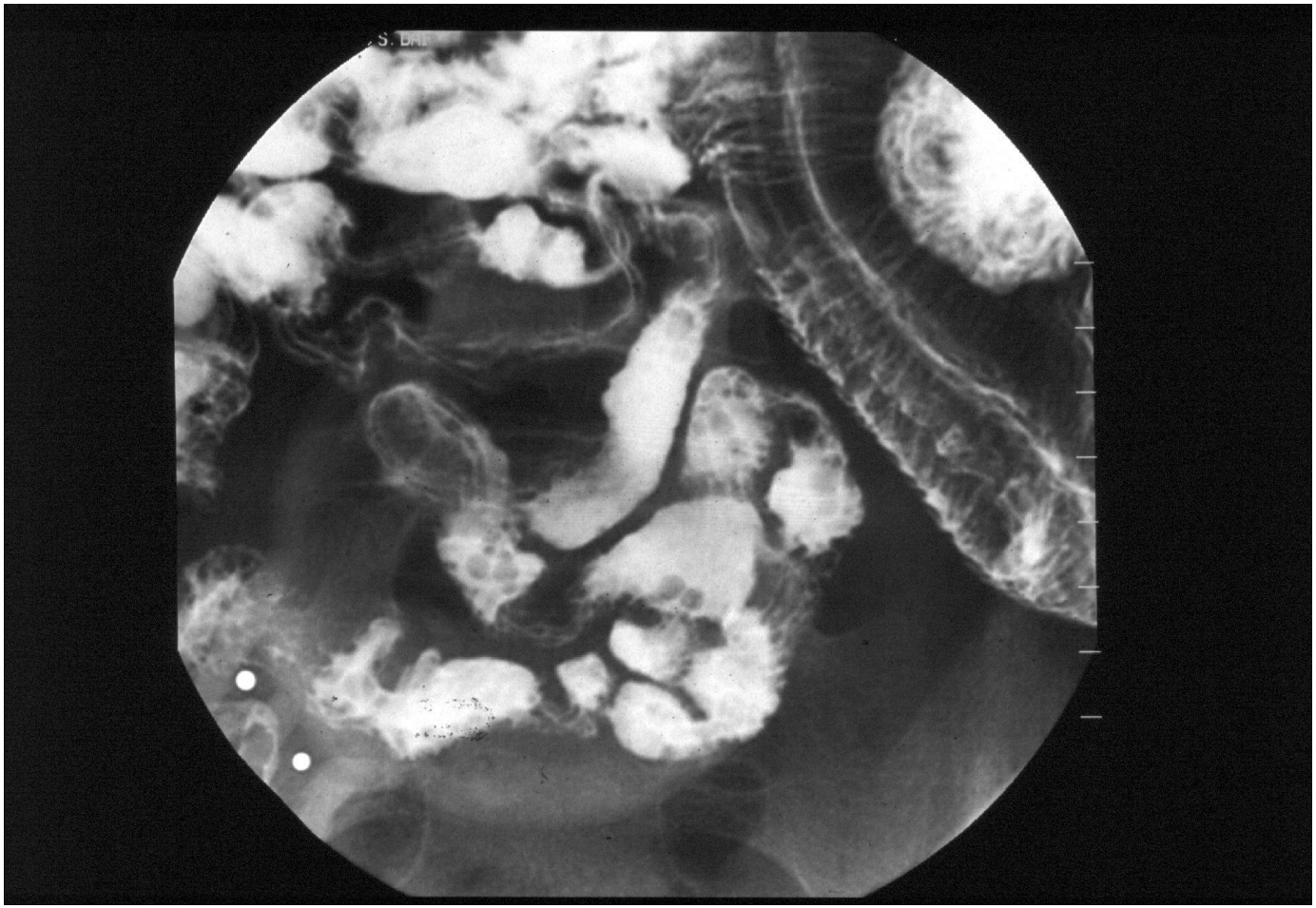
**Department of Paediatric Gastroenterology, Chelsea and Westminster Hospital, London; and the †The Polyposis Registry, St. Mark's Hospital, London, England*



Imaging and protocols for PJS – time to change – perhaps the end of the barium contrast study



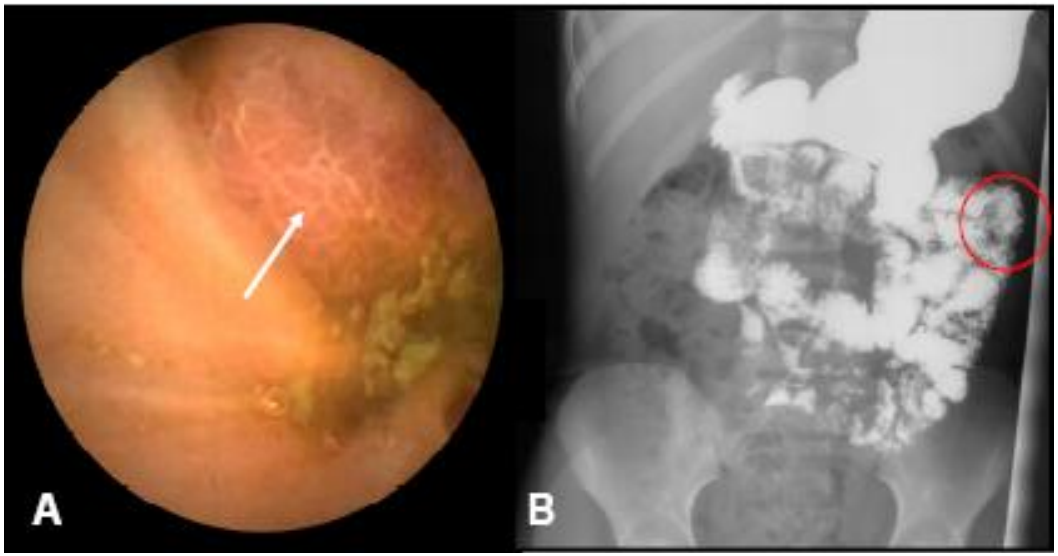
Is this the end of the barium contrast study in PJS?



The end of the barium in PJS…..VCE is not perfect enough….

ABSTRACT

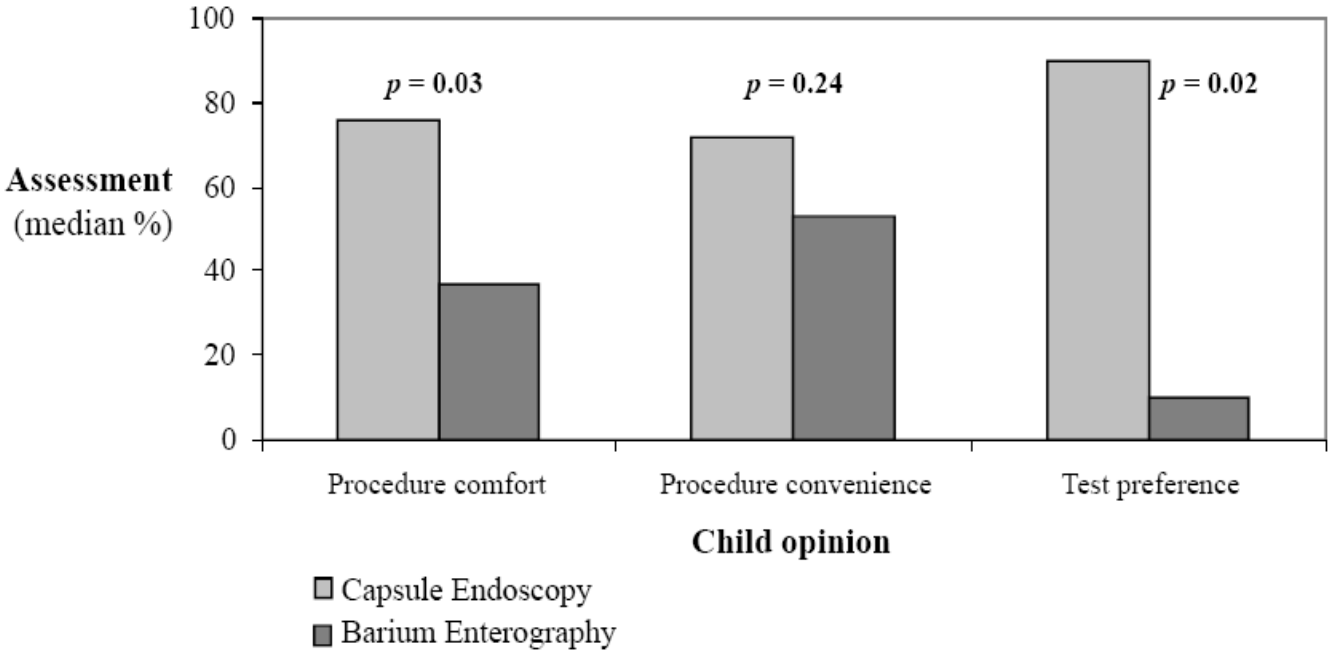
Video Capsule Endoscopy in the management of children with Peutz-Jeghers Syndrome: a blinded comparison with Barium Enterography for the detection of small bowel polyps.



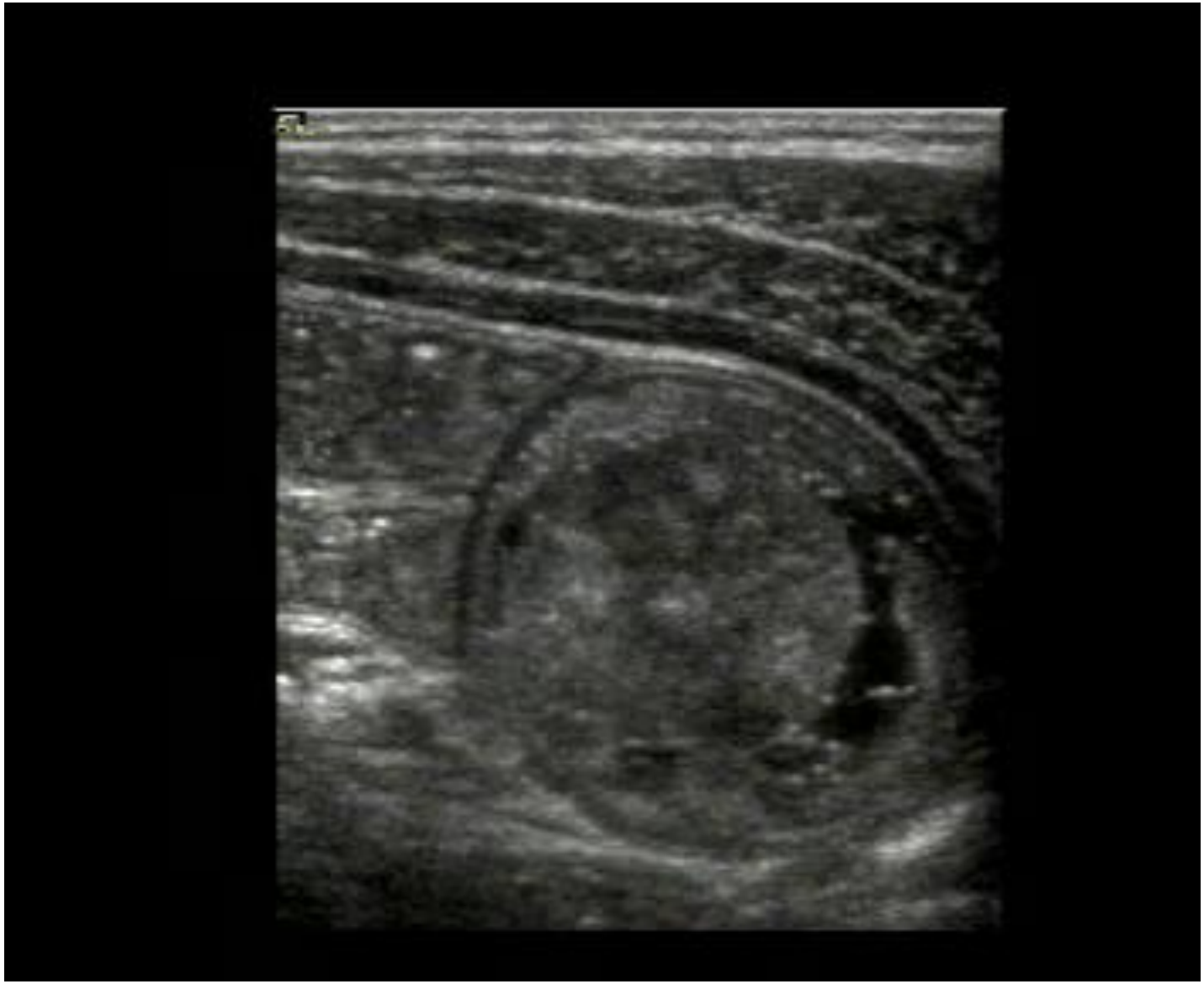
Postgate A, Hyer W, Phillips R, Brown G, Schofield G, Burling D, Gupta A, Marshall M, Bartram C, Taylor S, Latchford A, Bassett P, Fitzpatrick A, **Fraser C**

Preferred by patient:

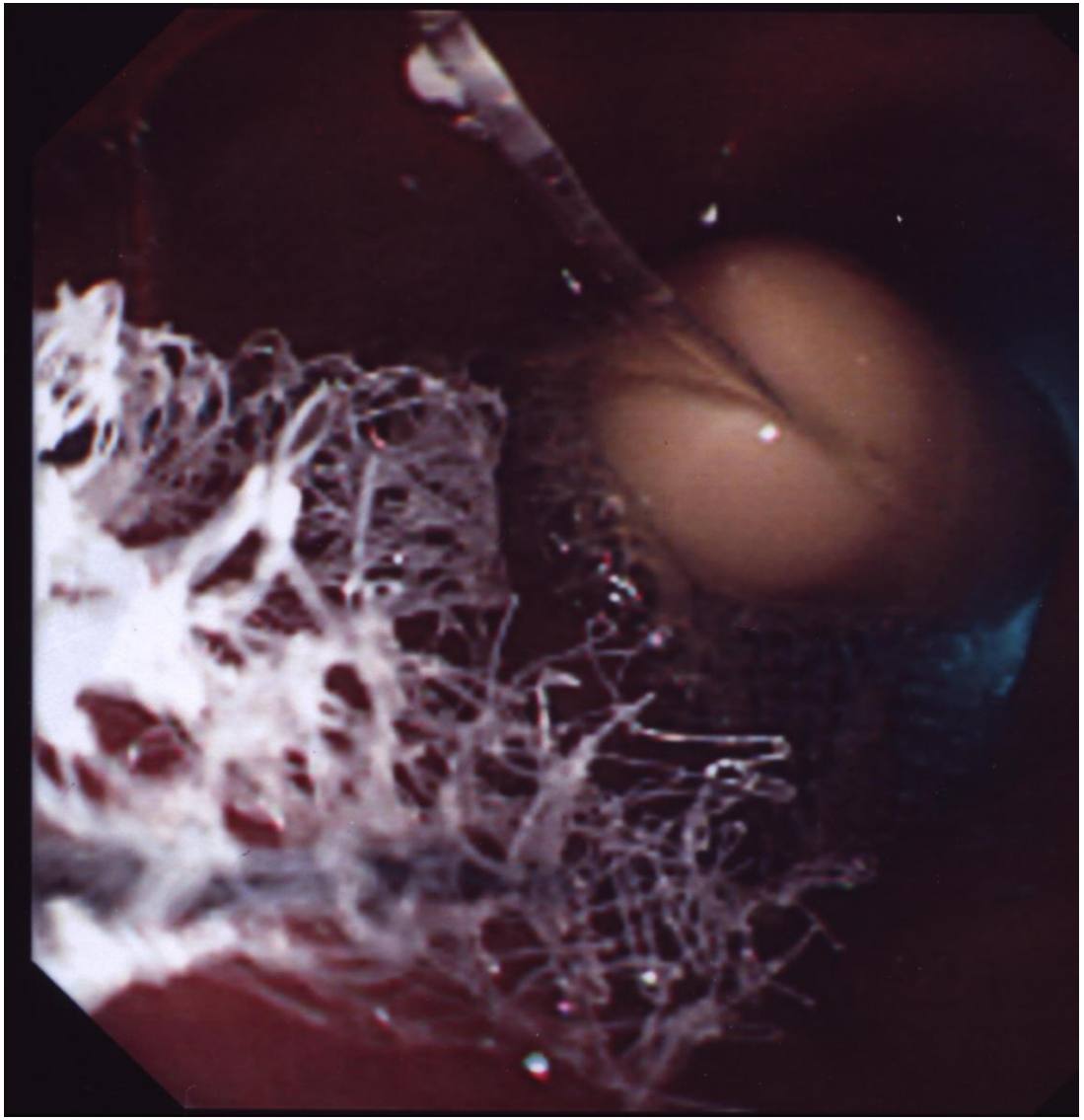
Fig. 2. Child opinion of test modalities

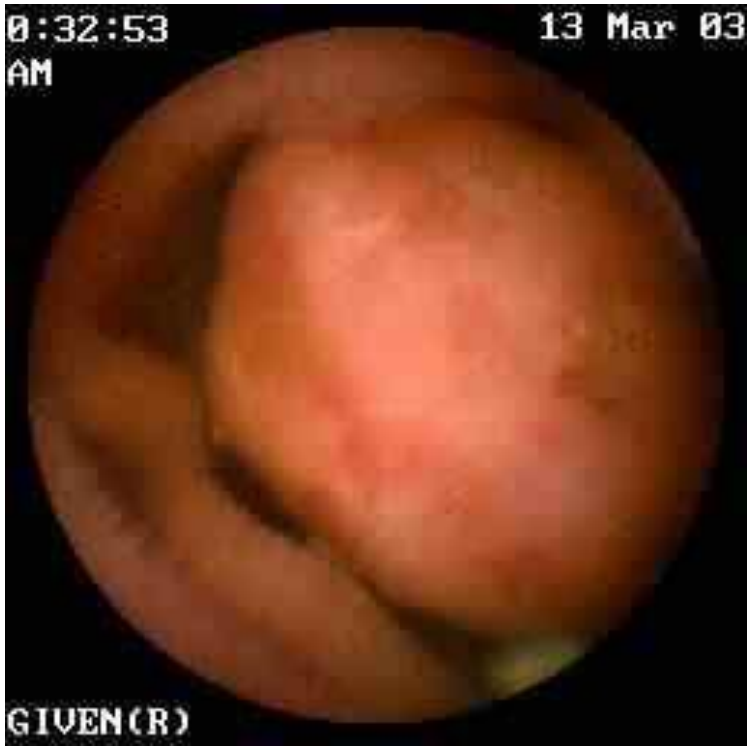


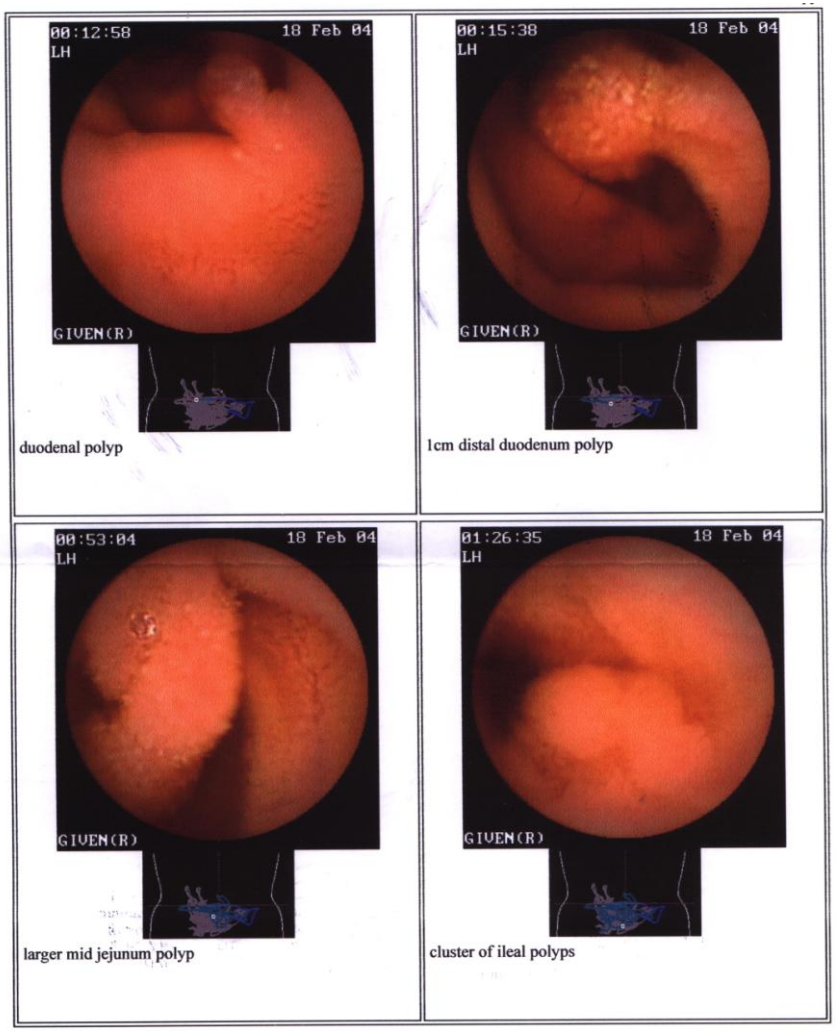
But 1 big polyp >10mm was missed .

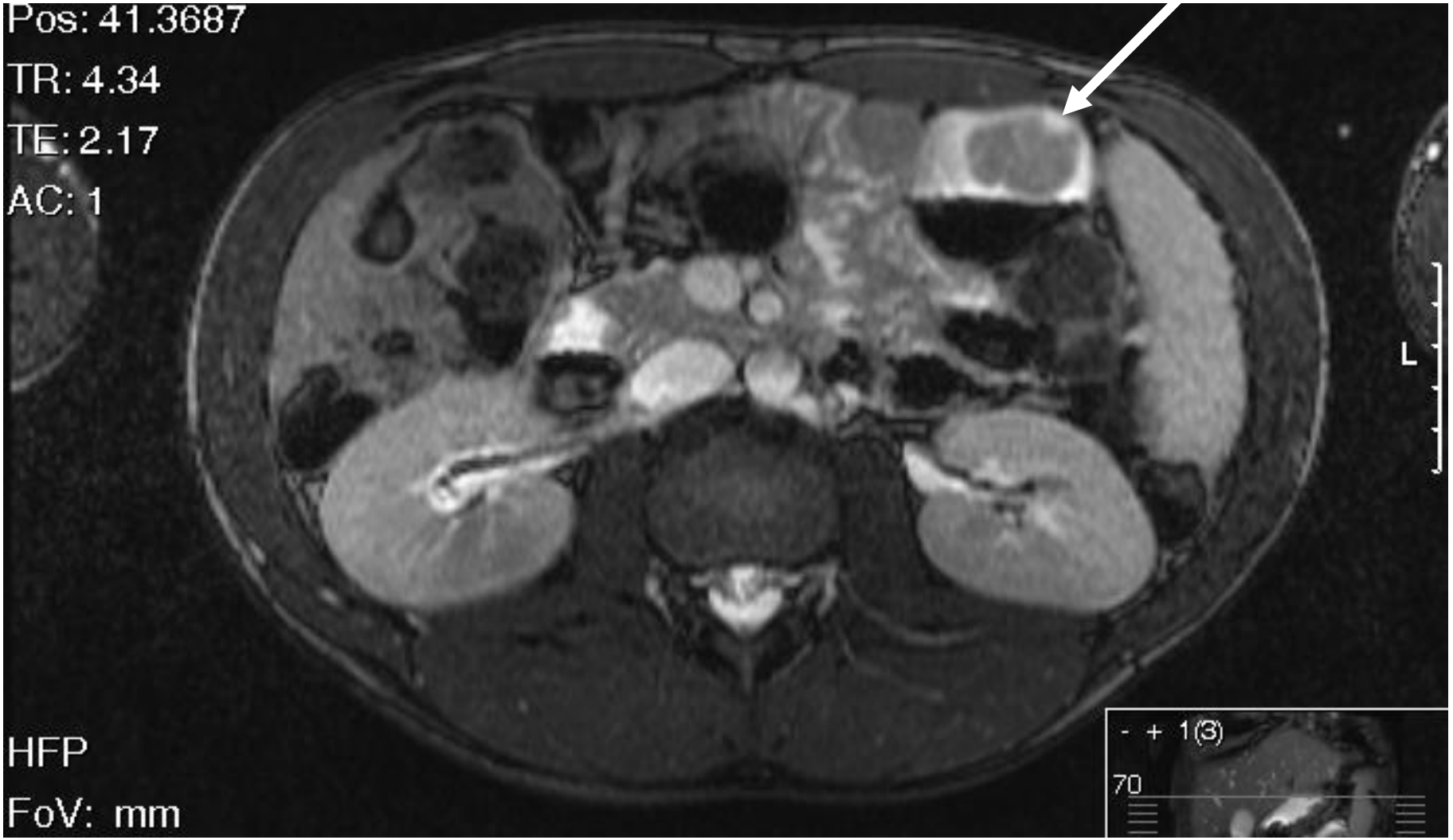


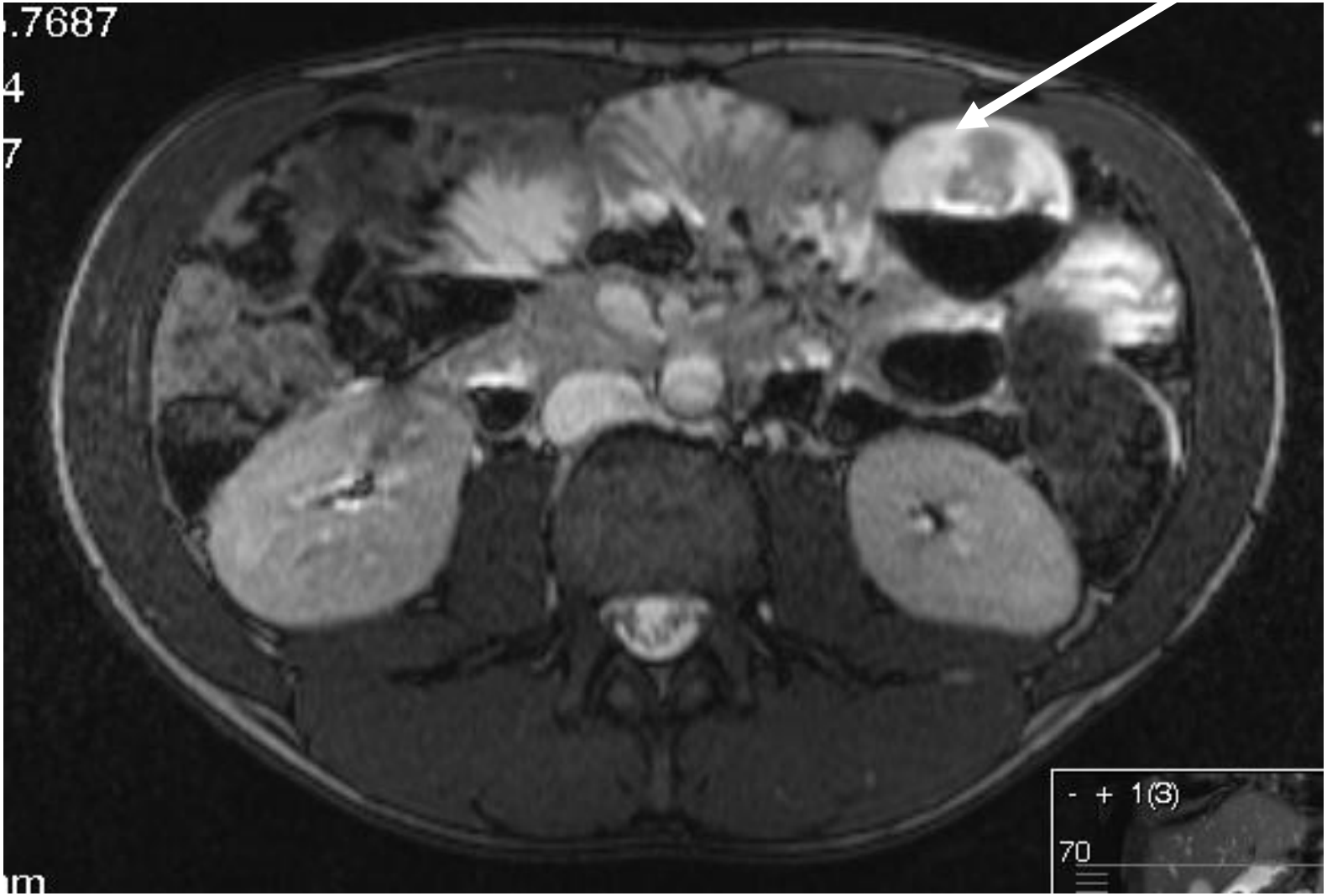
Capsule endoscopy








Pos: 41.3687
TR: 4.34
TE: 2.17
AC: 1
L
HFP
FoV: mm
- + 1(3)
70



Close correlation between MRI and capsule endoscopy in adults (and children) with PJS. Gut 2009 Postgate A et al (n=9)

Double balloon enteroscopy in children

Adult case series/reports:

Small-Intestinal Peutz-Jeghers Polyps Resected by Endoscopic Polypectomy with Double-Balloon Enteroscopy and Removal Confirmed by Ultrasonography

Y. Matsumoto · N. Manabe · S. Tanaka · A. Fukumoto · T. Yamaguchi · M. Shimamoto · M. Nakao · Y. Mitsuoka · K. Chayama

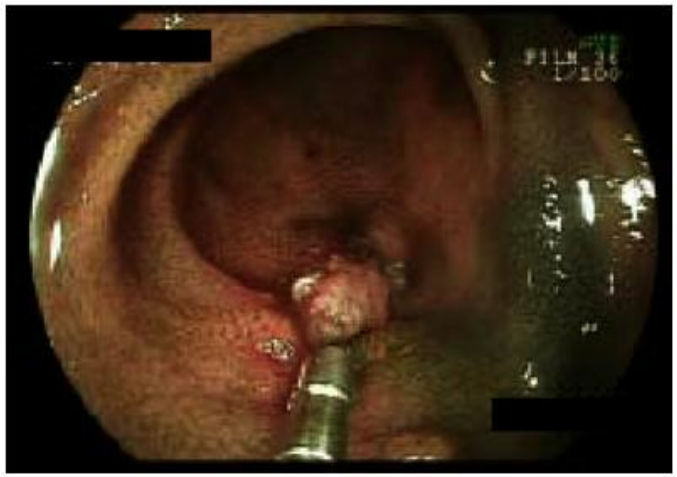
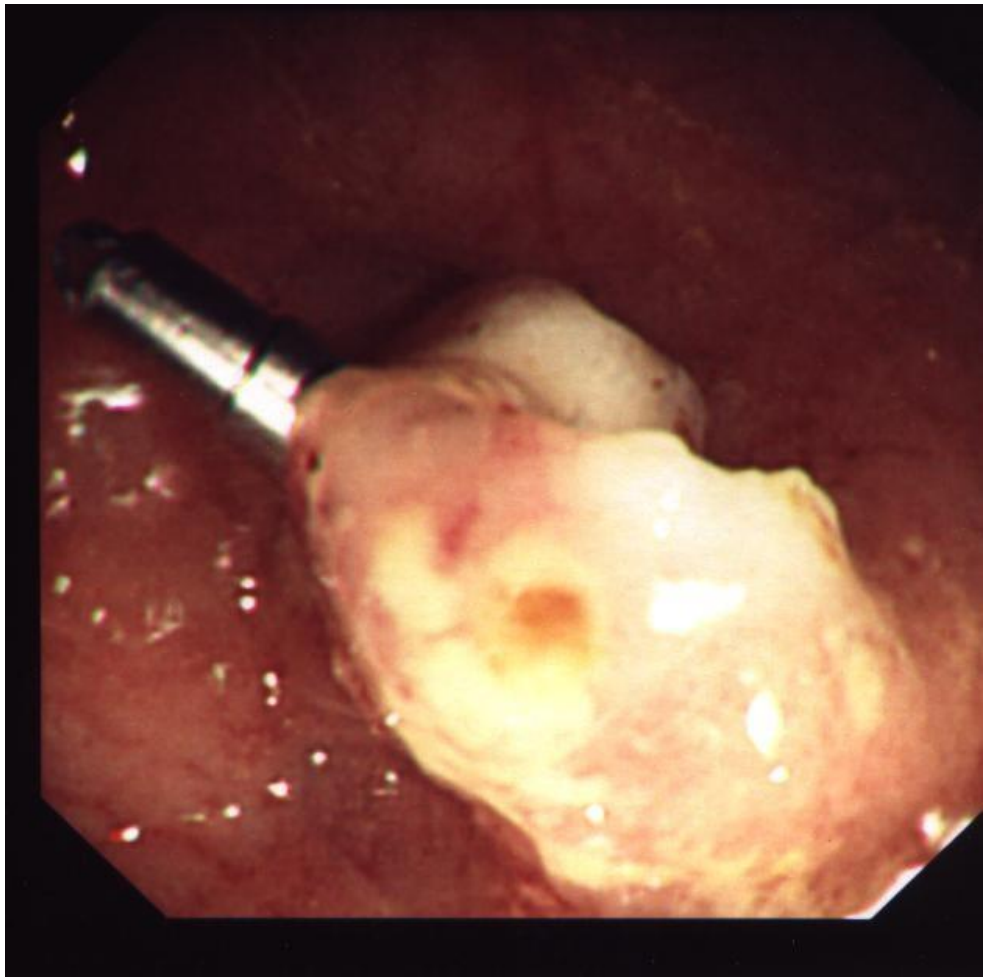


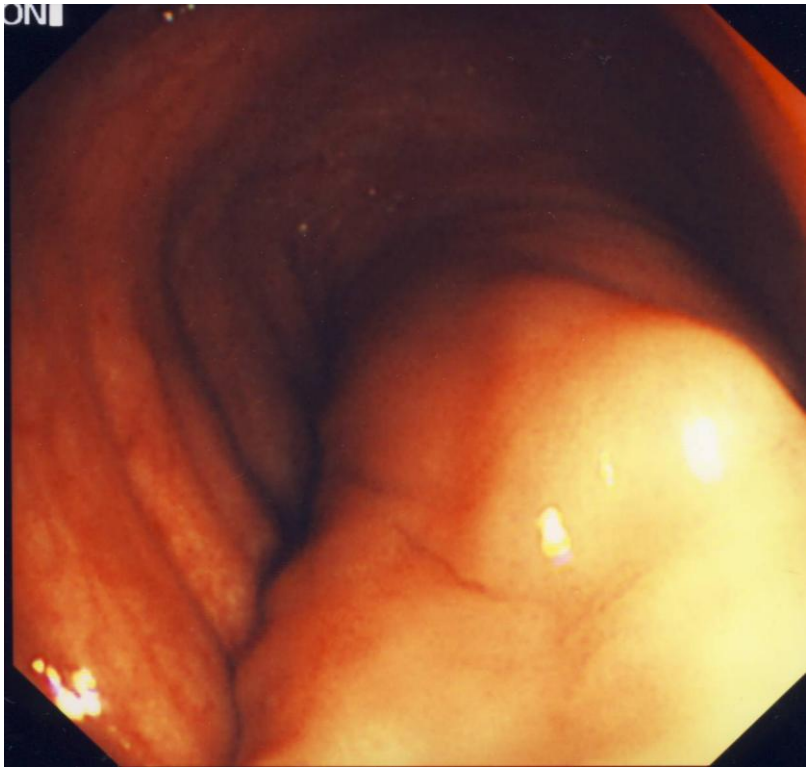
Fig. 5 DBE image showed that the polyp was resected, and the ulcer was clipped

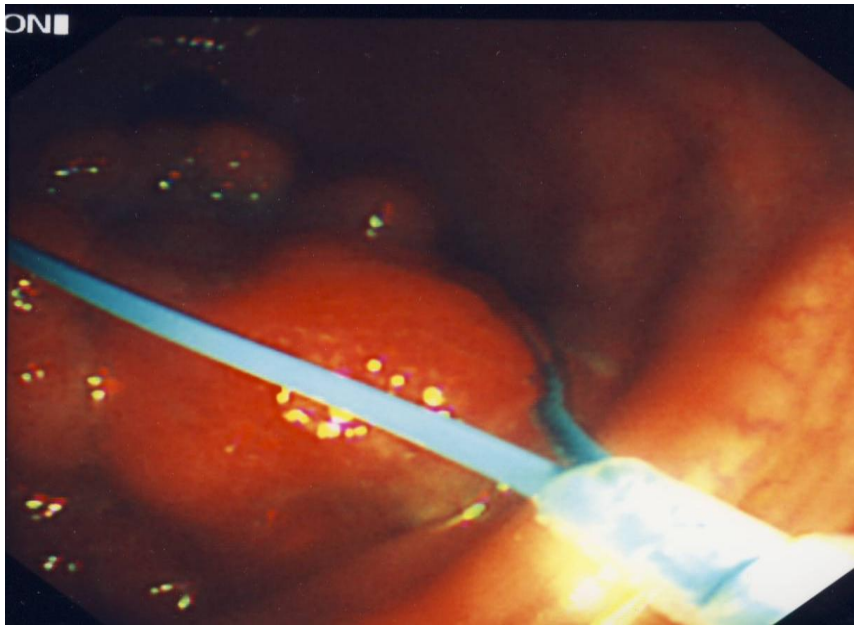
- But how big a polyp can we resect without injury to the submucosa?
- Lacking evidence and experience with DBE, and polypectomy in PJS in children

Preventing perforation at polypectomy

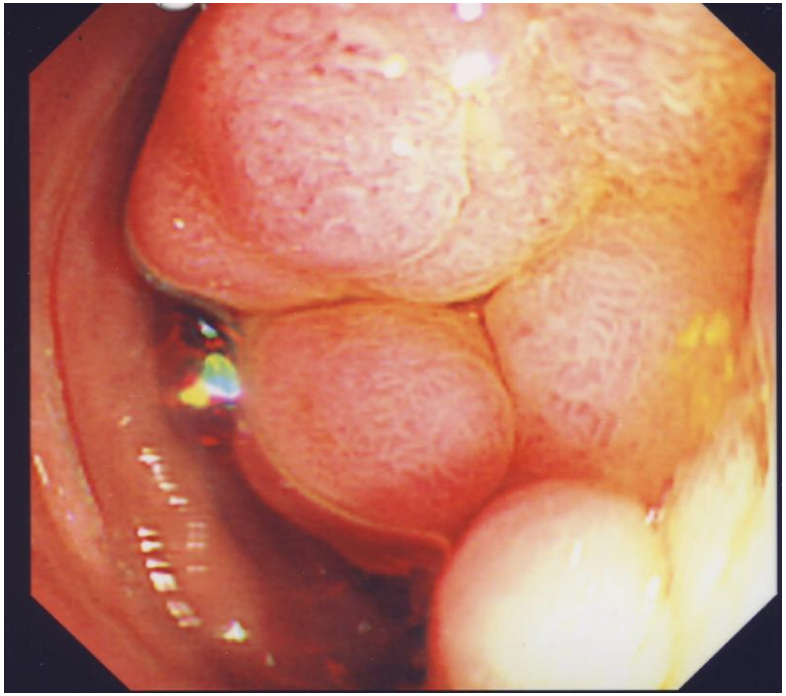


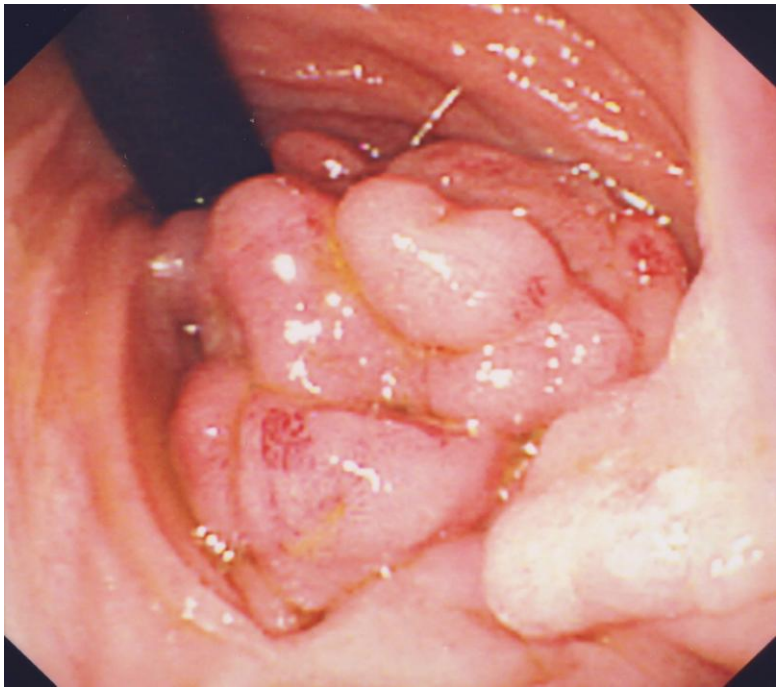
What polyp is too big in a child?

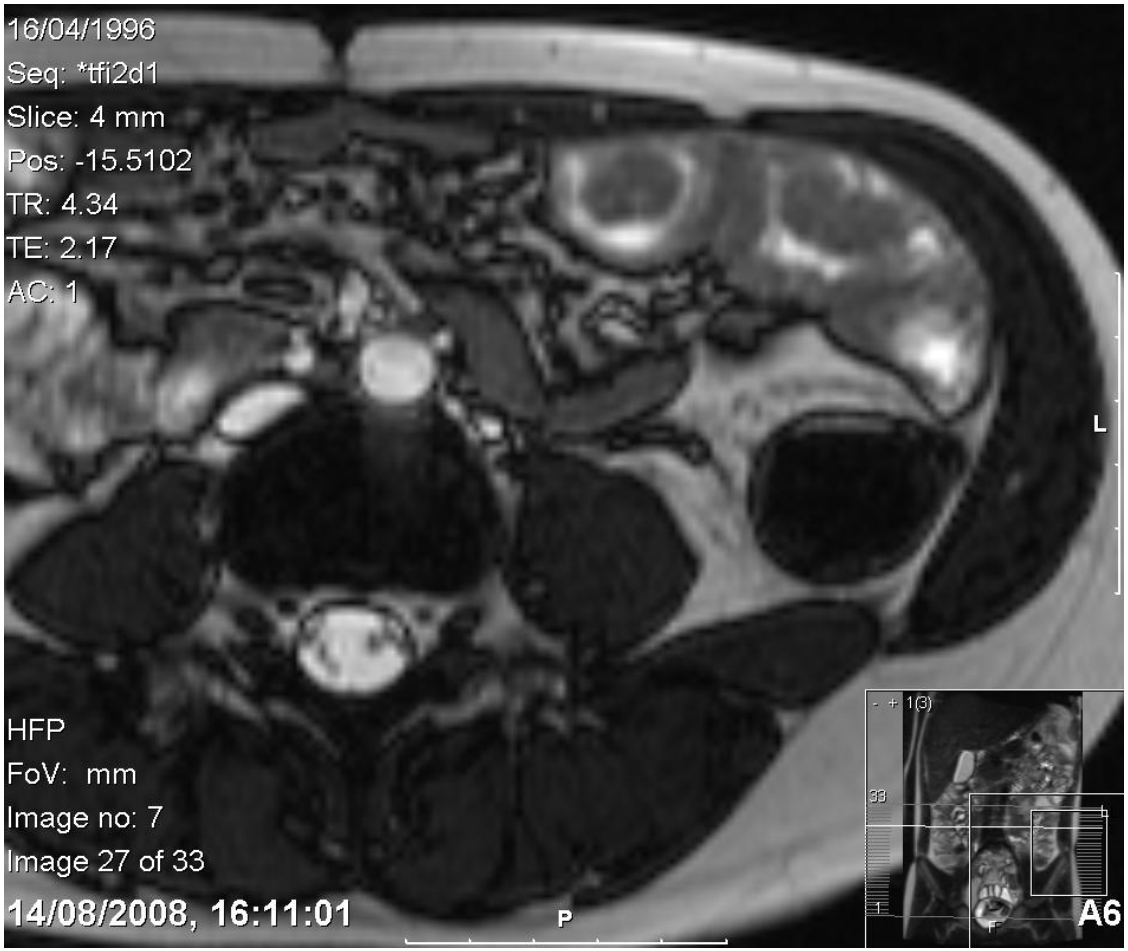




Closer prediction about surgical/endoscopic choices

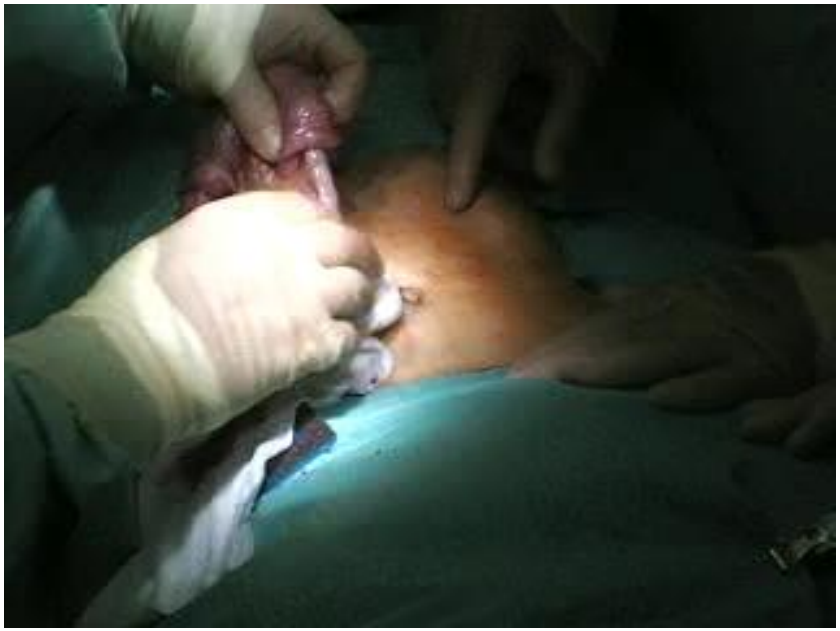


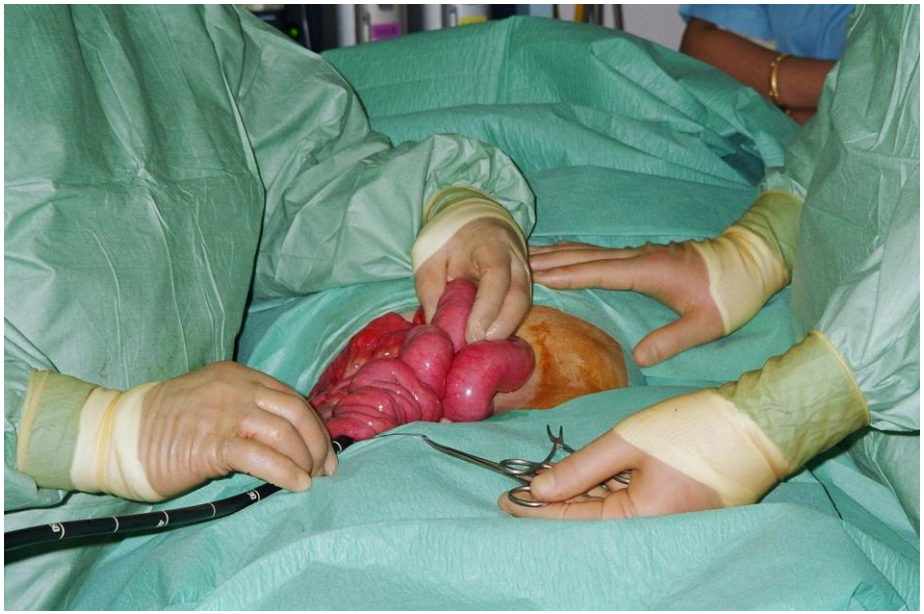




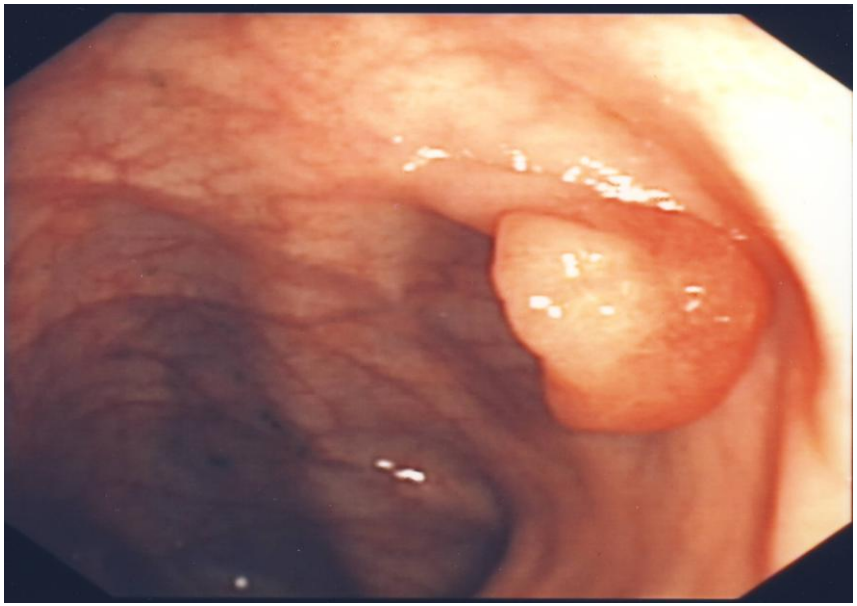
How safe is it to do a DBE and polypectomy on 2 X 18mm polyps?
What is the worldwide experience?
What is the experience of Wolfson Endoscopy unit?

Surgery in PJS





Juvenile polyposis



Unwinding the Heterogeneous Nature of Hamartomatous Polyposis Syndromes

John M. Carethers, MD

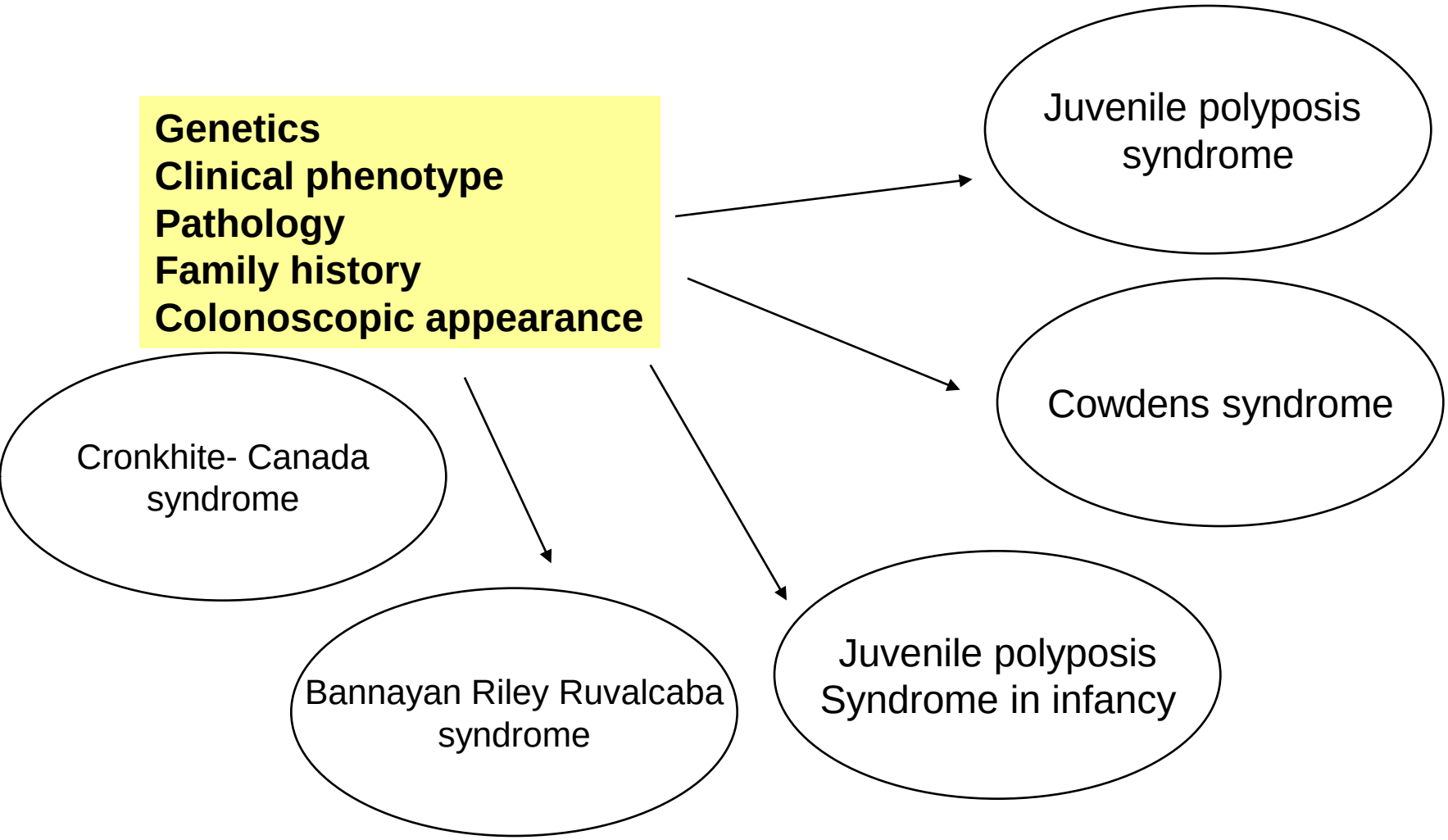
IN ANY CLASSIC "WHODUNIT" MYSTERY, THE GOAL OF THE investigator is to find and expose the guilty party. At the onset, there may be many suspects, some of whom may appear guilty. However, the shrewd investigator picks through those distractors to clearly eliminate them and focuses on specific details to finally identify the true culprit. The same approach holds for the recognition of the hamartomatous polyposis syndromes, many of which demonstrate phenotypic features that overlap with each other.

See also p 2465.

Author Affiliations: Department of Medicine and Rebecca and John Moores Comprehensive Cancer Center, University of California, San Diego; Veterans Administration Research Service, San Diego.
Corresponding Author: John M. Carethers, MD, GI Section, 111D, Veterans Administration San Diego Healthcare System, 3350 La Jolla Village Dr, San Diego, CA 92161 (jcarethers@ucsd.edu).

Issues for the severe infantile juvenile polyposis /Bannayan- Riley-Ruvalcaba

Unpicking the hamartomous syndromes – 21st century style



What genetics?

- LKB1
  - PJS
- PTEN
  - 85% of Cowden
  - 65% of Bannayan Riley Ruvalcaba syndrome
  - JPS
- SMAD 4
  - 20-50% JPS
- BMPR1A
  - 20-40% of JPS
- ENG
  - JPS, HHT

No cancer risk in childhood with JPS

Risk of colorectal cancer in juvenile polyposis

Lodewijk A A Brosens, Arnout van Hattem, Linda M Hylind, Christine Iacobuzio-Donahue, Katharine E Romans, Jennifer Axilbund, Marcia Cruz-Correa, Anne C Tersmette, G Johan A Offerhaus, Francis M Giardiello

Gut 2007;56:965–967. doi: 10.1136/gut.2006.116913

Age at diagnosis of colorectal cancer (years)	Sex	Race	Prior partial colectomy (age in years)	Death from colorectal cancer
30	F	W	No	No
32	F	W	Yes (28)	No
37	M	W	Yes (18)	Yes
41	M	W	No	Yes
48	F	W	No	No
52	M	W	Yes (19)	Yes
53	M	W	No	Yes
58	M	W	No	Yes

It is the anaemia and hypoalbuminaemia in the syndromic forms in infancy which create the clinical challenge

St MARK'S HOSPITAL

COX -2 inhibitors in JPS

Journal of Pediatric Gastroenterology and Nutrition
44:318–325 © 2007 by European Society for Pediatric Gastroenterology, Hepatology, and Nutrition and North American Society for Pediatric Gastroenterology, Hepatology, and Nutrition

Cyclooxygenase-2 Expression in Polyps From a Patient With Juvenile Polyposis Syndrome With Mutant *BMPR1A*

*Jayde E. Kurland, ‡¶Stayce E. Beck, †Carol J. Solomon, *Oscar S. Brann, ‡||¶#John M. Carethers, and §Sherry C. Huang

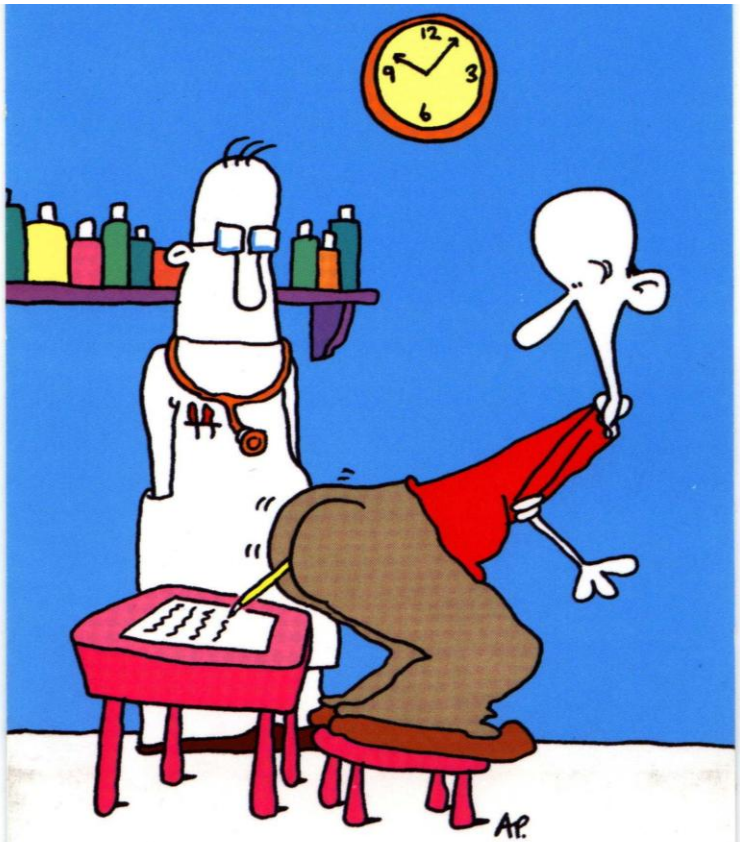
Our observation that COX-2 is overexpressed in polyps from a patient with *BMPR1A* mutation identifies COX-2 as a potential target for chemopreventive therapy, and this may be an alternative therapeutic approach in reducing tumor burden in patients with JPS.

What to expect next…..

- Small bowel surveillance and DBE for PJS
- End of barium contrast radiology
  - Increase use of MRI and VCE
- ? Delay pancolonoscopy – and start with flexible sigmoidoscopy in adolescents with FAP
- Rise in phenotype suppression – paediatric studies with COX 2 inhibitors
- Laparascopic assisted procedures

Thank you to:

- St Mark's Polyposis Registry, UK
- Dr Chris Fraser, Wolfson Endoscopy Unit
- Professor Robin Phillips, and Ms Sue Clark
- Cleveland Clinic –
- The rest of the GI team in West London
- RMCH



Jeff had an anal examination

at the Doctor's

www.polyposisregistry.org.uk

Evolving care in Pediatric Polyposis

Offering 21st Century care

Greetings from London UK - venue for the 2012 Olympics