



Interval Appendectomy
IS indicated



1886 Reginald Heber Fitz

Describes appendicitis
Calls for early surgical intervention

From dogma to dust?

“Complicated Appendicitis”

- A walled-off inflammatory process secondary to acute appendicitis with appendiceal perforation
- 5-10% of acute appendicitis
- Can be treated with antibiotics +/- I.R. drainage of abscess
- 90-95% success rates
- What then?

Interval Appendectomy

- Prevents a recurrent attack of appendicitis
- Prevents “missing” a possible appendiceal neoplasm
- Can it be done safely?



I.A. Indicated For

- Adults!
- Responded to non-operative management of complicated appendicitis.
 - With or without a palpable RLQ mass.
 - Diagnosed with imaging. Preferably by CT.

Can it be done safely?

- Complication rates 10-23%!
 - Wound infections
 - Intra abdominal abscesses
 - Small bowel obstructions
 - Fecal fistulae
- Children and adults
- “Old” data

Can it be done safely?

- Recent publications
Adults, CT imaging, *Laparoscopy*

Lugo et al, 2009: 46 pts. (44 laparoscopically+2 convert)

Mean age 43 One superficial wound infect (2%)

Furman et al, 2013: 17 pts. (11 laparoscopically+6 convert)

Avg age 41 One intra abdominal abscess (6%)

Lidar et al, 2000: 10 pts. (All laparoscopic)

Avg age 34 No complications 9 ambulatory

You et al, 2012: 15 pts. (14 laparoscopic + 1 convert)

age: "adult" One complication (?) (7%)

88 patients → **3.5%**

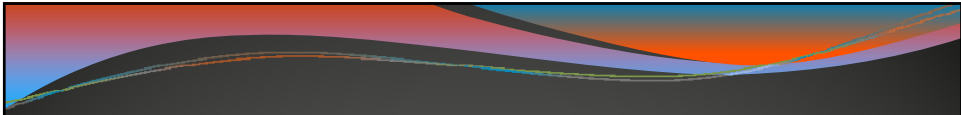
Prevent recurrent appendicitis?

- Obviously some.....but how many?
- What is the rate of recurrent appendicitis in adults?
- Do we have a real problem?

Rate of recurrent attacks

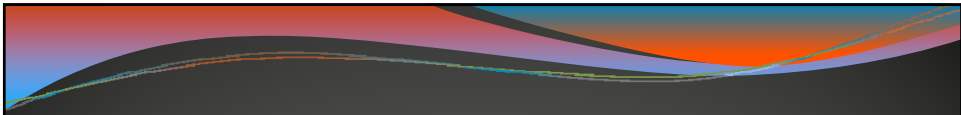
	pub. Date	av. age	#patients	% recurrences
Lai,	2006	54	24/94	25.5
Tsai,	2006	44	7/35	20
Youseff,	2010	31	9/51	17
Lien,	2011	51	10/68	15
Malik,	2012	28	28/213	13
Hussein,	2012	31	5/42	12
Andersson 2007	?	?	1061	7.4*

* pooled estimate



Appendicolith?

- Complications caused by retained appendicoliths from “open” appendectomy era.
- An indication for interval appendectomy?
 - Ein, 2005, (children).....72% recurrence rate
 - Tsai, 2006
 - 7 adults with appendicolith 5 recurred.....71%



- Not all acute appendices rupture.
- Is there something different about some adult appendices, that do rupture?

Neoplasms?

Large-scale Studies of Malignancy at Appendectomy

Author	Number of Appendectomies	Percent Malignancy	Malignancy Breakdown
Hanalel et al., 1993 ¹⁴	1,740	13 (0.7%)	6 (46%) adenoCA, 7 (54%) benign
Connor et al., 1998 ⁵	7,970	74 (0.9%)	42 (57%) carcinoid, 12 (16%) benign, 8 (11%) adenoCA, 12 (16%) other malignant
Bucher et al., 2004 ¹⁵	~2,500	43 (1.7%)	23 (53%) carcinoid, 14 (33%) cystadenoma, 3 (7%) mucinous adenoCA, 3 (7%) adenoCA
Tchana-Sato et al., 2006 ²²	1,237	5 (0.4%)*	Carcinoid only
Smeenk et al., 2008 ¹⁶	167,744	1,482 (0.9%)	Mucinous 421 (28%) adenoma, 153 (10%) adenoCA; nonmucinous: 242 (16%) adenoma, 211 (14%) adenoCA; mucocele: 455 (31%)

* Only measured carcinoid.
AdenoCA, adenocarcinoma.

Carpenter, 2012 5 yr. experience ~Age 47

18 interval
appendectomies

5 malig or pre-malig 28%
2 adenoca age 62
1 mucinous adenoca 60
1 carcinoid
1 T-V adenoma w. HGD

291 immediate
appendectomies

3 malignancies 1%
3 incidental carcinoids
all < 0.5cm

Furman et al, 2013	~Age 41
17 interval appendectomies	359 immediate appendectomies
5 malignancies 29%	9 malignancies 2.5%

Interval appendectomy indicated

- In adults
 - Especially > age 40
- Because
 - It can be done safely
- And will
 - Prevent a significant number of future illnesses
- And will not
 - Miss an appendiceal neoplasm

