

Phenotype Flip - Risk of developing Crohn's disease following restorative proctocolectomy for ulcerative colitis in childhood

Alison Campbell Bruce Jaffray. The Great North Children's Hospital, Newcastle upon Tyne

Introduction

- 30% of Ulcerative Colitis (UC) patients require colectomy.
- Restorative procto-colectomy (RPC) with ileal pouch-anal anastomosis (IPAA) is the preferred procedure.
- However published reports suggest up to 25% of patients subsequently manifest Crohn's Disease (CD).
- 50% of these subsequently require pouch excision.
- This may inhibit clinicians from offering IPAA to children.

Aims

- To identify any cases of conversion of diagnosis from UC to CD among our cohort of children who have undergone IPAA.

Methods

- All children undergoing IPAA are recorded in a dedicated database.
- All undergo long-term regular follow up.
- Any children who have their pouch excised had the histological report of the excised pouch reviewed.
- All histology reports from long-term pouch surveillance and all clinical notes from long-term follow up were reviewed
- We also examined details of the diagnostic work up prior to IPAA,

Results

- Between 1999 and 2020
- 84 children with UC : (85 pouches formed)
- Median age at IPAA: 13 years (4-17 years)
- 3 unable to anastomose (2 permanent stoma)
- 12 pouches excised for: poor function 4, pelvic infection 4, faecal incontinence 2, bleeding 1, other 1
 - 3 subsequent revisional pouch surgery
 - 73 patients currently have pouch in situ
- No CD in excised pouches
- No CD on long term follow up pouch surveillance histology
- Median follow up 10 years (0.5– 20 years)

This differs from the published literature

Paper	Year	Patients	Number	Crohn's Conversion
Our series	Unpublished	Paediatric (long term follow up)	85	0%
Shannon et al	2016	Paediatric +young adult (long term follow up)	74	28%
Barnes et al	2019	Adult (meta analysis)	4843	10.5%
Melton et al	2009	Adult (single centre)	2814	7%

Pre-operative work up

- Number of colonoscopies pre-colectomy:
 - Mean 3 (1- 10)
- Pre-colectomy colonoscopies if initial biopsy indeterminate:
 - mean 3.5 colonoscopies
 - 2 patients toxic megacolon (colectomy before 2nd scope)
- **All patients histological diagnosis of UC before pouch surgery**

Conclusions

- To date we have not identified any case of conversion of diagnosis from UC to CD among children who have undergone IPAA.
- This is despite long-term regular follow up of 84 children.
- Neither histological examination nor clinical behaviour has suggested any case of CD.
- This may reflect our pre-operative workup
- There is no reason to deny children an IPAA because of concern about diagnostic error

References

- Polites SF, et al. Long-term outcomes of ileal pouch-anal anastomosis for pediatric chronic ulcerative colitis. *J Pediatr Surg.* 2015;50(10):1625-1629.
- Helavirta I, et al. pouch failures following restorative proctocolectomy in ulcerative colitis *International Journal of Colorectal Disease* <https://doi.org/10.1007/s00384-020-03680-1>
- Shamah S, Schneider J, Korelitz BI. High Incidence of Recurrent Crohn's Disease Following Colectomy for Ulcerative Colitis Revealed with Long Follow-Up. *Dig Dis Sci.* 2018;63(2):446-451
- Shannon A, et al. Long-term follow up of ileal pouch anal anastomosis in a large cohort of pediatric and young adult patients with ulcerative colitis. *J Pediatr Surg.* 2016;51:1181-1186.
- Barnes EL, et al. The Incidence and Definition of Crohn's Disease of the Pouch: A Systematic Review and Meta-analysis. *Inflamm Bowel Dis.* 2019;25(9):1474-1480.
- Diederens K, et al. Outcome after restorative proctocolectomy and ileal pouch-anal anastomosis in children and adults. *Br J Surg.* 2017;104:1640-1647
- Melton GB et al, Long-term outcomes with ileal pouch-anal anastomosis and Crohn's disease: pouch retention and implications of delayed diagnosis. *Ann Surg.* 2008;248(4):608-616.