

Laparoscopic assisted colonoscopic  
endomucosal resection provides an option  
for management of complex colonic polyps

MM Davies, J Torkington, J Turner\* S Dolwani\*

Department of Colorectal Surgery, University Hospital of Wales &

\*Department of Gastroenterology, University Hospital Llandough,  
Cardiff, UK

# Complex colonic polyps

- Complex colonic polyps:
  - Large sessile / flat polyps / broad base
  - Difficult access
  - Recurrence
  - Altered morphology
- Increasing problem with National Bowel Screening Programmes:
  - Greater polyp detection vs symptomatic patients: 30-60% vs 10%
  - More complex polyps
- No consensus for management of complex colonic polyps

# Options for management of complex colonic polyps

- Colonoscopic EMR /Piecemeal EMR (PEMR)
  - Improvements in lesion assessment
  - Increase in therapeutic skills
- Surgical resection of colon
  - Definitive treatment
  - But: Morbidity / Cost (inpatient care) / Mortality

# Options for management of complex colonic polyps

- Colonoscopic EMR /Piecemeal EMR (PEMR)
- Laparoscopic Assisted Colonoscopic EMR/PEMR
- Surgical resection of colon

# Laparoscopic Assisted Colonoscopic EMR - Technique

- Laparoscopy - mobilisation of colonic segment
- Colonoscopy - polyp localisation
- Indent by laparoscopic surgeon as required
- Submucosal polyp lift with EMR solution (Gelofusin, Adrenaline, Indigocarmine)
- EMR / PEMR – external visualisation after snare closure prior to cautery
- Argon beam to selective sections of margin
- Assessment of colonic segment – dye leak / jacuzzi test



# Aim of study

Assess outcomes of a series patients with complex colonic polyps managed by LapEMR

# Method

- Multidisciplinary review of cases
  - Exclusion of cases if amenable for Colonoscopic EMR/PEMR alone
  - Exclusion if adverse Colonoscopic or Radiological Features
  - Case selection
- Indications / Complications / Length of stay /  
Need for resectional surgery studied.

# Results

- 4 year period (2009-2013)
- 24 patients:
  - M:F 1.5:1
  - Median(iqr)age: 67 (63-69) years



# Polyps

- Preprocedure histology:
  - All low grade dysplasia tubulovillous adenoma
- Endoscopic appearance:
  - Pit pattern IV
  - No adverse features – depression / ulceration
- Site of polyp:
  - Caecum (11), Ascending (2), Hepatic flexure (2), Transverse (6), Sigmoid (3)
- Indication for LapEMR:
  - Difficult access 16(67%), Large size (40-70mm) 6(25%), Recurrent polyp 2(8%)

# Outcomes – Complications

- **Intraoperative:**
  - Failure to lift (1)(caecal/ICV) – right hemicolectomy (Dukes B cancer)
  - No perforation
  - No intra operative bleeding
- **Post operative:**
  - Urinary retention (1)
  - Bleeding (1) – rebled after conservative management  
Laparoscopic ileocolic resection (Day 4)  
von Willibrand's diagnosed post discharge!
  - Post discharge bleed – readmission Day 5 – observation only
- **Median length of hospital stay:** 2(1-2) days
- **Mortality (90day):** 0%

# Outcomes – Colonic resection

5/24 patients required colonic resection:

- Malignancy (4)
  - 1 Immediate right hemicolectomy – failure to lift – Dukes B carcinoma
  - 3 Invasive focus within large benign polyp – all Dukes A
- Bleeding (1)

Almost 80% patients avoided colonic resection






# Resection Site Follow Up

- 19 patients
- Colonoscopy at 3 and 12 months:
  - 3months:
    - Residual / recurrent polyp - 4 (pre Argon Beam, 0 post)
  - 12 months:
    - 19 no recurrence

# Summary

- 24 patients underwent LapEMR to remove selected complex colonic polyps
- Indication - majority right sided & difficult access
- 80% avoided resectional surgery
- Low incidence of complications and no mortality

# Lap Assisted Colonoscopic EMR – Published Data

	Year of publication	No. of patients	Successful procedure (n)	Surgical resection required (n)	Follow Up (months)	Recurrence Rate (%)
Franklin et al 	2009	160	144	16	65	0
Wood et al 	2011	13	9	4	-	-
Grunhagen et al 	2011	10	9	1	4-27	0
Lee et al 	2013	65	48	17	65	10
(Davies et al 	(2014)	24	19	5	12-30	0)

# Conclusions

- LapEMR provides an additional option for management of complex colonic polyps with low morbidity and long term efficacy
- Definitive resection may be avoided in selected patients with complex colonic polyps