

BACKGROUND

- There is very scarce information about feasibility and safety of video capsule endoscopy (VCE) in patients with and without surgically altered gastrointestinal anatomy (SAGIA).
- We compared the safety and feasibility of VCE in patients with SAGIA and to those with normal anatomy (NA).

METHODS

- Single center retrospective study
- Patients undergoing VCE at our Institution were included (2010-2022).
- Patient with SAGIA undergoing VCE were 2:1 matched based on gender to patients with normal anatomy (NA).
- SAGIA group comprised of gastrectomy, gastric bypass, enterectomy, colectomy, esophagectomy or Whipple's procedure.
- Outcomes were completion rate, gastric and small bowel transit time and adverse event rate.

RESULTS

- Amongst 9584 patients undergoing VCE, 77 patients with SAGIA were matched to 154 patients with NA. Complete data was available for 139 patients with NA which comprised the final control group.
- Gastric bypass was the most common surgery (n=31 [40.3%]) followed by gastrectomy (complete or partial, n=29 [37.6%]).
- Video capsule was more likely to be placed by swallowing in SAGIA group in comparison with NA group (76.6% vs. 38.8%, p< 0.001).
- Patency capsule prior to CE was performed more often in SAGIA group compared to NA group (22.1% vs. 5.0%, p< 0.001).
- VCE outcomes are presented in table 1B.
 - Study completion rates were similar between SAGIA and NA (97.4% and 95.5%, p=0.56).
 - Rates of gastric (1.5% vs. 0.7%, p=0.5) and small bowel (1.5% vs. 37%, p=0.6) capsule retention were similar between the SAGIA and NA groups.
 - No patients in either group required intervention for capsule retrieval.
 - Follow up of radiographic imaging was performed more frequently in patients with SAGIA as compared to those with NA (27.3 vs. 3.6%, p< 0.001).

RESULTS

Table 1: Summary of study participants, features evaluated, and the final model.

Table 1A: Baseline characteristics, type of surgery and indications for video capsule endoscopy (VCE) in patients with normal anatomy and surgically altered gastrointestinal anatomy (SAGIA)				
Variable	Group	SAGIA	Normal anatomy	P value
n		77	139	
Age at the time of VCE		55.58 (15.82)	59.50 (15.87)	0.083
Gender (%)	Female	41 (53.2)	74 (53.2)	1
Race (%)	AA	17 (22.1)	40 (29.2)	0.696
	Caucasian	58 (75.3)	94 (68.6)	
	Hispanic	1 (1.3)	1 (0.7)	
BMI		29.60 (10.11)	28.03 (7.38)	0.191
Capsule placement	Endoscopically placed	18 (23.4)	85 (61.2)	<0.001
	Swallowed	59 (76.6)	54 (38.8)	
Comorbidities				
HTN (%)		37 (48.1)	113 (81.3)	<0.001
Autoimmune diseases (%)		4 (5.2)	4 (2.9)	0.46
Hypothyroidism. (%)		18 (23.4)	23 (16.5)	0.277
Scleroderma. (%)		3 (3.9)	1 (0.7)	0.131
Diabetes (%)		26 (33.8)	60 (43.2)	0.194
Parkinsonism. (%)		0 (0.0)	4 (2.9)	0.299
Indications for VCE				
Abdominal pain (%)		9 (11.7)	3 (2.2)	0.009
Concern for IBD (%)		2 (2.6)	1 (0.7)	0.29
Iron deficiency anemia (%)		23 (29.9)	33 (23.7)	0.335
Occult GI bleeding. (%)		10 (13.0)	2 (1.4)	0.001
Overt GI bleeding. (%)		34 (44.2)	108 (77.7)	<0.001
Small bowel polyps. (%)		5 (6.5)	0 (0)	0.005
Other. (%)		26 (33.8)	0 (0.0)	<0.001
Prior Surgeries				
Gastrectomy (%)		29 (37.6)		
Gastric bypass (%)		31 (40.3)		
Enterectomy (%)		7 (9.1)		
Colectomy/ICR (%)		3 (3.9)		
Esophagectomy (%)		1 (1.3)		
Whipple's procedure (%)		6 (7.8)		

Table 1B: Outcomes of video capsule endoscopy in patients with normal anatomy vs. surgically altered gastrointestinal anatomy (SAGIA)

Outcomes	SAGIA	Normal anatomy	P value
Small bowel transit time (min)	316.56 (142.63)	310.89 (159.59)	0.82
Total transit time (min)	731.00 (197.08)	773.97 (168.97)	0.141
Result			
Completion	75 (97.4)	128 (95.5)	0.598
Gastric retention at Day 15	1 (1.3)	1 (0.7)	
Small bowel retention at Day 15	1 (1.3)	5 (3.7)	
Follow up imaging (%)	21 (27.3)	5 (3.6)	<0.001

CONCLUSIONS



Comparable rate of completion



Similar rate of complications



Increased use of patency capsule prior to and imaging after VCE

- VCE is safe in patients with SAGIA with comparable completion rates to patients with NA.
- Patients with SAGIA undergoing VCE are more likely to undergo patency capsule prior to VCE and radiographic imaging post VCE despite the lower frequency of actual capsule retention in patients with SAGIA.
- This study did not support routine patency capsule or radiographic follow-up in patients with SAGIA.

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