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Approach to the Diagnostic Workup and Management of Small Bowel Lesions at a Tertiary Care Center

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Background and Purpose

- Primary small bowel lesions (SBLs) are difficult to diagnose with modern endoscopic and radiographic techniques.
- SBLs are rare, yet vary widely in pathology and gastrointestinal tract location.
- It is important to review prior SBL cases to understand what factors were most beneficial in directing diagnostic approaches and subsequent treatments for these patients.
- Here, we evaluate diagnostic modalities and management practices of patients with SBLs at an advanced endoscopic referral center.

Methods

- We analyzed patients undergoing surgical management for SBL from 2005-2015 at a single tertiary care center.
- Patients were stratified into two major presenting symptoms and signs: Gastrointestinal bleed/anemia (**GIBA**) or obstruction/pain (**OP**).

Results Summary

- 112 patients underwent surgery after presenting with GIBA (n=67) or OP (n=45).
- Mean age was 61.8 years and 45% were women.
- Patients with GIBA had a higher body mass index, were more likely to have chronic or acute-on-chronic symptoms (100% vs. 67%), and more often referred from outside hospitals (82% vs. 44%) (p<0.01).
- Most common preoperative imaging modalities were video capsule endoscopy (VCE) (96%) for GIBA and computer tomography CT (78%) for OP.
- VCE and CT findings were frequently concordant with operative findings in GIBA (67%) and OP (54%) patients, respectively.
- Intraoperative visual inspection or palpation of the bowel identified lesions in 71% of patients.
- Intraoperative Enteroscopy confirmed or identified lesions in 69% of GIBA patients (n=26)
- 90% of GIBA patients had a small bowel resection (93% laparoscopic)
- 58% of OP patients had a small bowel resection (81% laparoscopic)
- Surgical exploration failed to identify lesions in 10% of GIBA patients and 24% of OP patients.
- 20% of GIBA patients (vs. 13% of OP patients) who underwent resections had recurrent symptoms

Table 1

	Bleed/Anemia (n=67)	Obstruction/Pain (n=45)	p value
Age (mean, years)	62.1 (15)	61.3 (19)	0.81
Male	41 (61)	21 (47)	0.13
Race			0.46
Caucasian	51 (76)	35 (78)	
Insurance			0.47
Public	34 (51)	23 (51)	
Co-morbidities			
Body Mass Index	30 (+/-8.1)	24.9 (+/-4.0)	<0.01
Diabetes	12 (18)	8 (18)	0.99
Hyperlipidemia	23 (34)	14 (31)	0.68
Hypertension	34 (51)	20 (44)	0.51
Presentation			<0.01
Acute	0	15 (33)	<0.01
Chronic	45 (67)	22 (49)	0.05
Acute on Chronic	22 (33)	8 (18)	0.08
Symptoms			
GI Bleed	45 (67)	0 (0)	
Anemia	22 (33)	0 (0)	
Obstruction	0 (0)	11 (24)	
Pain	0 (0)	34 (76)	

Values are N (%) or mean (standard deviation) unless otherwise specified

Table 1: Patient characteristics according to clinical presentation

Figure 1

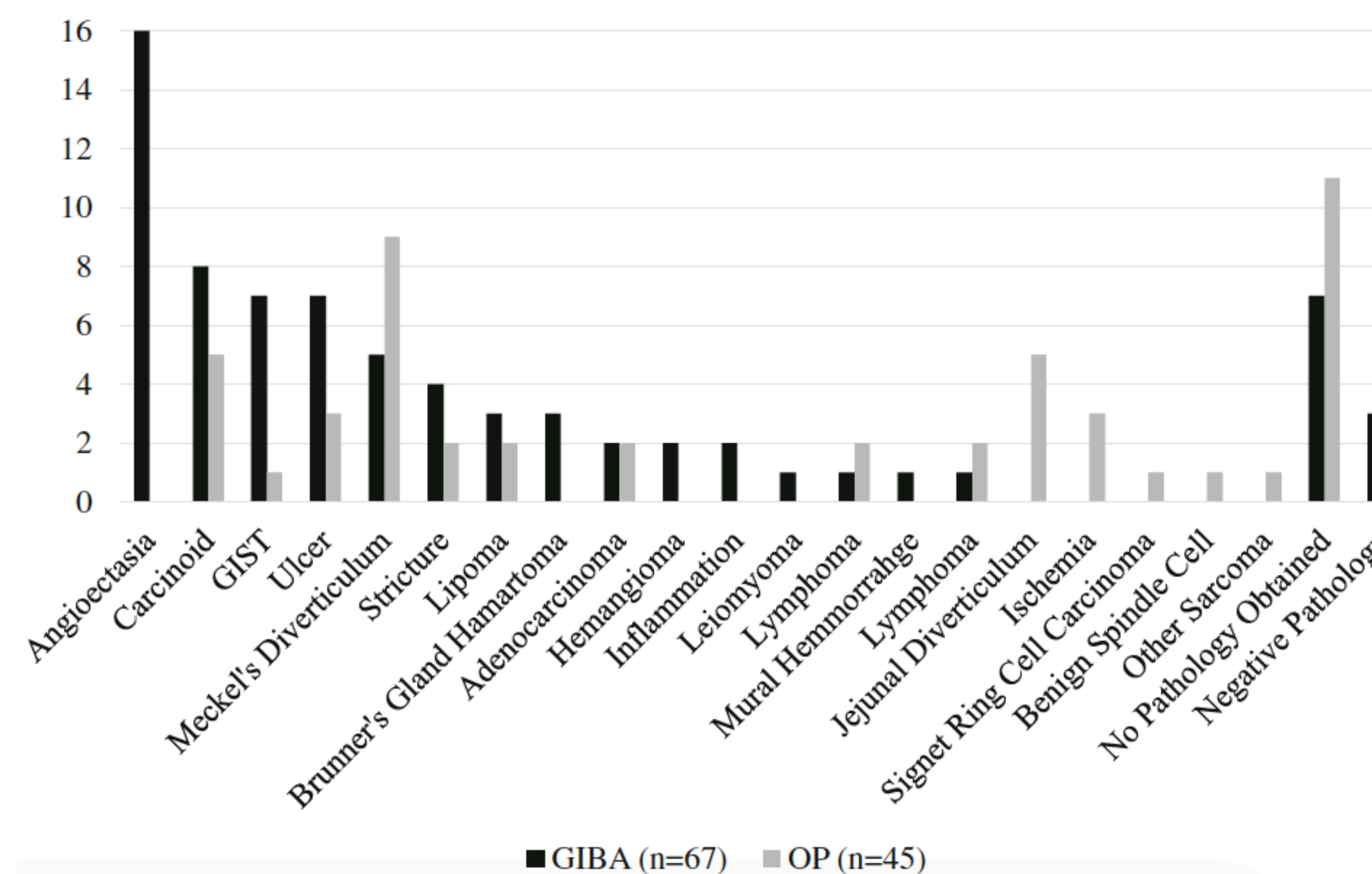


Figure 1: A graphical representation of pathology based on clinical presentation. Gastrointestinal bleed and anemia (GIBA) area represented in black. Obstruction and pain are represented in gray. Values are not mutually exclusive.

Conclusions

- Management and identification of SBL is governed by presenting symptomatology.
- Optimal management includes VCE and IE for GIBA and CT scans for OP patients.
- Comprehensive evaluation may require referral to specialized centers

Acknowledgements

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Table 2

Endoscopy	Endoscopy and Imaging Frequency			Positive Finding ^a		
	Bleed/Anemia	Obstruction/Pain	p value	Bleed/Anemia	Obstruction/Pain	p value
Capsule	64 (96)	18 (40)	<0.01	43 (67)	7 (39)	<0.01
Colonoscopy	58 (87)	19 (42)	<0.01	3 (5.2)	1 (5.3)	0.65
EGD	58 (87)	14 (31)	<0.01	0 (0)	0 (0)	1.00
Deep Enteroscopy	49 (73)	9 (20)	<0.01	21 (43)	2 (22)	0.01
Radiology						
CT	18 (27)	35 (78)	<0.01	5 (28)	19 (54)	<0.01
CTE	21 (31)	11 (24)	0.52	10 (48)	3 (27)	0.24
X Ray	4 (6.0)	10 (22)	0.02	0 (0)	0 (0)	1.00
Tagged RBC Scan	8 (12)	0 (0)	<0.01	1 (13)	0 (0)	1.00
Angiography	7 (11)	0 (0)	0.04	3 (27)	0 (0)	0.27
MRE	2 (3.0)	3 (6.7)	0.39	1 (50)	1 (33)	1.00
None	29 (43)	1 (2.2)	<0.01	-	-	-

Values are N (%) or mean (standard deviation) unless otherwise specified

Values are not mutually exclusive

^aPositive finding that correlated to operative findings

Table 2: Endoscopy and imaging findings according to clinical presentation

Figure 2

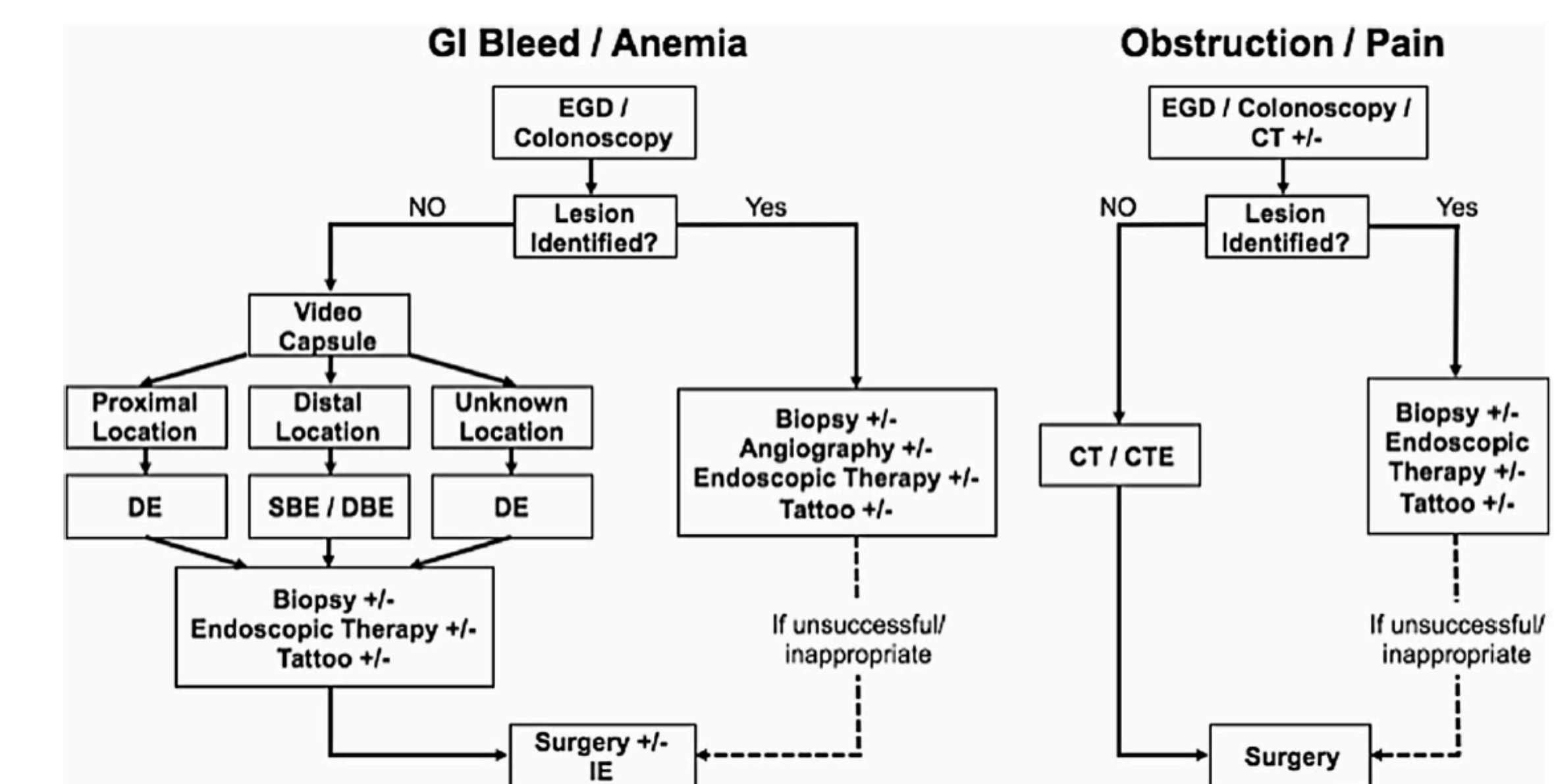


Figure 2: Approach to the management of suspected small bowel lesions: workup and treatment should be determined by presenting symptoms of either gastrointestinal bleeding/anemia (GIBA) or obstruction/pain (OP). Deep enteroscopy (DE) includes spiral enteroscopy, single-balloon enteroscopy (SBE), and double-balloon enteroscopy (DBE). Computed tomography (CT), computed tomography enterography (CTE), intraoperative enteroscopy (IE)