

Boot Camp in a Box: Initial Experience with Pre-Training Skills Preparation for New Interns

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PURPOSE

- To demonstrate the feasibility of implementation of a pre residency skills acquisition program for new interns

METHODS

- Knot-tying and suture kits, instruments, supplies, [Figure 1 and Table 1] and instructional videos for 4-tasks were sent to newly matched interns (n = 10). Tasks consisted of:
 - 1- and 2-handed knot tying
 - Interrupted simple suturing
 - Running subcuticular suturing
- Trainees practiced all tasks until self-assessed competency then submitted a video of each task 8-weeks prior to start of internship
- Assessed videos were annotated and returned to trainees
- Tasks were repeated at the start of internship and 8-weeks later (at the end of Surgical PGY1 Boot Camp)

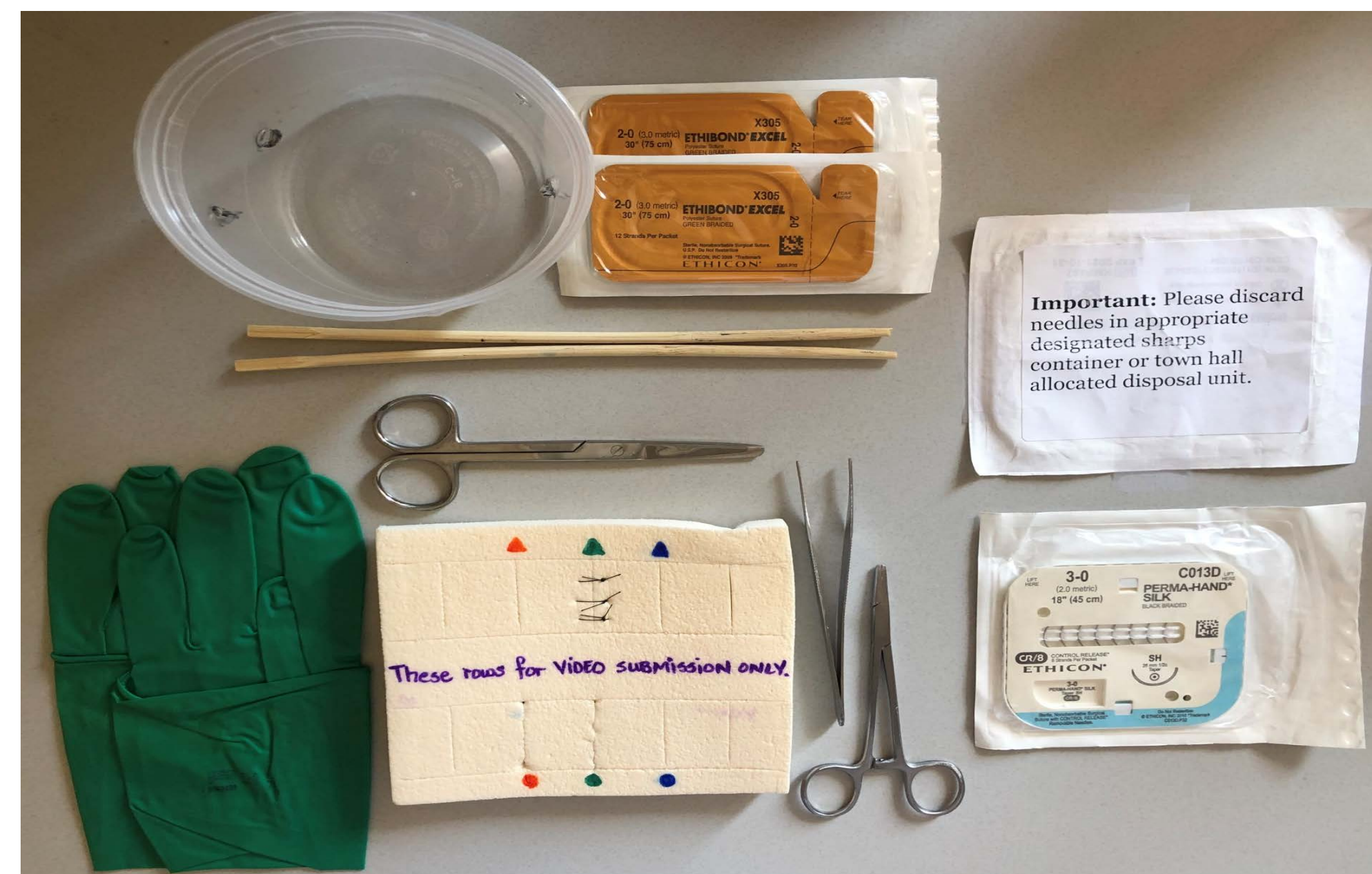


Figure 1

BAYSTATE SURGICAL PREPARATORY PACKET BUDGET	
Pre-Internship Boot Camp Packet	Item cost per packet
Suture Instrument packets (1 each)	7.99
3-0 Suturing packets (2 each)	13.33
2-0 Suture Tie packets (2 each)	6.58
Large Suture pads (2 each)	16.67
Plastic drilled cups for tying (1 each)	0.11
Chopsticks (1 each)	0.02
Postage & Handling (UPS)	16.82
TOTAL COST PER TRAINEE PACKET	\$61.52

Table 1

Resident Name: _____ Date: _____ Examiner: _____		NOT DONE OR DONE INCORRECTLY (0)	DONE CORRECTLY (1)
ITEM			
* SIMPLE INTERRUPTED SUTURING			
1A	Holds needle driver appropriately >80% of the time (with fingers in place)		
2A	Needle loaded appropriately (1/2-2/3 from tip) > 80% of the time		
3A	Needle enters skin at right angles (i.e. 90 degrees perpendicular) > 80% of bites		
4A	Single attempt at needle passage through skin >80% of the time		
5A	Follow through on curve of needle on entrance/exit > 80% of the time		
6A	Equidistant bites on each side > 80% of the time		
7A	Uses needle holder or forceps to handle needle		
8A	Minimal damage to tissue with forceps (avoids multi-grasping or pulling forcefully)		
9A	No misalignment of wound closure		
10A	No over-tightened sutures		
11A	Square knots with a minimum of 3 throws on knots		
12A	Instrument tied square knots done appropriately		

Table 2

RESULTS

- Compliance was high: 95% of requested videos submitted
- Half of trainees returned second video in response to video feedback
- There was a decrement of scores at week 1 of residency compared to week 8 pre-training
- Performance improved overall from week 8 pre-training to week 8 of training for all tasks [Table 3 and Figure 2]
- Post hoc comparisons showed most significant change was high scores achieved at week 8 of training

Task Type	Week 8 Pre-Training	Week 1 of Training	Week 8 of Training	ANOVA p value
1-Handed Knot Tying	60 ± 28 %	38 ± 18 %	74 ± 34 % [†]	0.01
2-Handed Knot Tying	80 ± 20 %	50 ± 17 % [*]	84 ± 26 % [†]	0.0073
Simple Suture	65 ± 17 %	53 ± 20 %	73 ± 17 % [†]	0.0084
Running Suture	58 ± 22 %	49 ± 24 %	78 ± 18 % ^{*†}	<0.0001

Tukey-Kramer multiple comparisons tests: *p < 0.05 vs pretraining; †p < 0.05 vs Week 1 of Training

Table 3

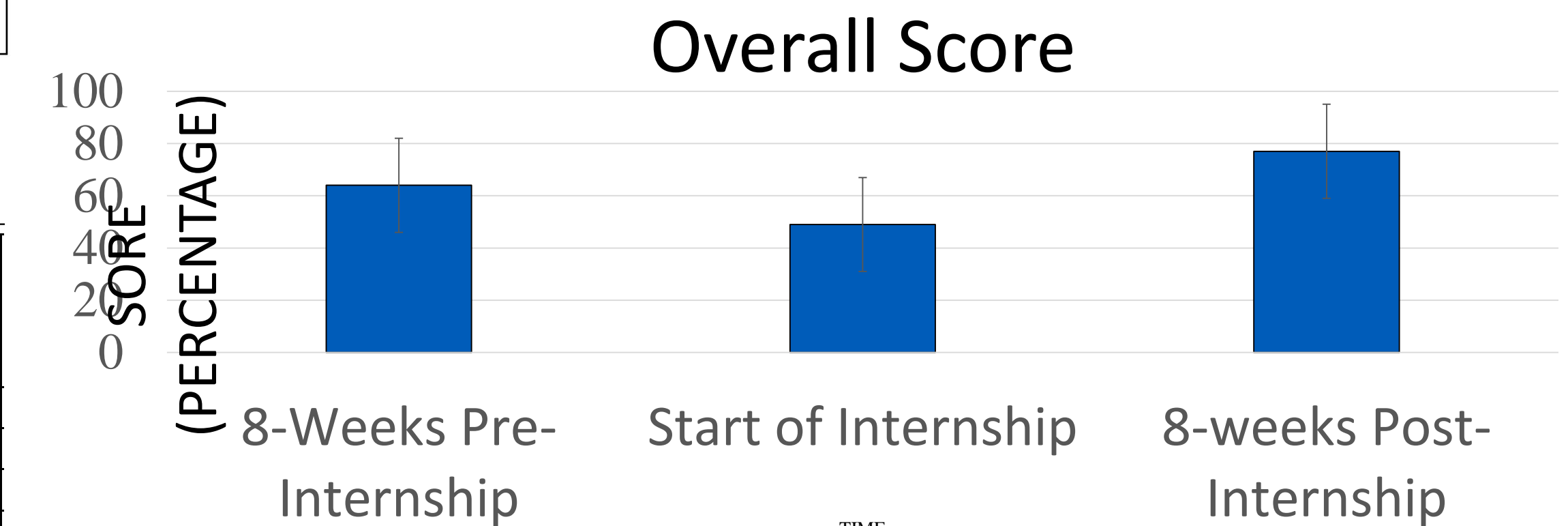


Figure 2

CONCLUSION

- The consistently lower scores on the tasks at the start of internship (during Bootcamp) may reflect the single-opportunity higher stakes testing conditions of the week 1 assessment
- Subsequent achievement of significantly higher performance may have been helped by incentivized pre-training practice
- Study of effectiveness of pre-training curriculum and of video feedback is warranted

PRESENTATIONS

- This poster was also presented at the Associate of Program Directors in Surgery conference, Chicago 2019.

Incidence and Management of Jejunojunal Intussusception after Roux-en-Y Gastric Bypass: A Large Case Series

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BACKGROUND

- Jejunojunal intussusception is a rare, but potentially catastrophic complication of Roux-en-Y gastric bypass (RYGBP) for morbid obesity
- Reported incidence of < 1% in the literature
- Theories regarding its etiology:
 - Roux limb dysmotility
 - Mesenteric thinning after significant weight loss
 - Postoperative adhesions
 - Nodal hyperplasia
 - JJ staple line
- Surgical options include reduction alone, reduction with enteropexy, enteropexy alone, and anastomotic revision

HYPOTHESIS

- Increasing the length of the jejunojunostomy (> 60mm) results in an anastomosis that becomes patulous over time and increases the risk of post-RYGB intussusception

METHODS

- Retrospective chart review of all patients that underwent RYGBP for morbid obesity and subsequently developed jejunojunal intussusception
 - January 1, 2008 and June 30, 2018
- Demographics, details of the index procedure (operative approach, construction of roux limb and jejunojunostomy), symptoms and imaging findings at the time of presentation with intussusception, management, and outcomes of operative management were collected

RESULTS

- 575 patients underwent RYGB between January 1, 2008 and June 30, 2018 (Table 1)
 - Mean age 35.4 ± 8.0 , mean BMI 47.0 ± 13.3

Table 1. Demographics and operative technique for RYGBP patients in our institution

	N (%)
Operative Approach	
Laparoscopic	27 (87.1)
Open	3 (9.7)
Robotic	1 (3.2)
Jejunojunostomy Length	
45mm	6 (19.4)
60mm	8 (25.8)
90 mm (45 x2)	17 (54.8)
Roux Limb	
Antecolic	21 (67.7)
Retrocolic	10 (32.3)

- 34 patients were diagnosed with post-RYGBP jejunojunal intussusception (Table 2)
 - Mean time to intussusception 66.8 months

Table 2. Symptoms and Imaging at time of intussusception diagnosis

	N (%)
Symptoms at Presentation	
Abdominal pain	34 (100)
Nausea/Emesis	25 (73.5)
Distention	4 (11.8)
Peritonitis	2 (5.9)
Imaging Modality	
X-Ray	4 (11.8)
CT Scan	31 (91.2)
Esophagram	3 (8.8)
Radiographic Findings	
Intussusception	23 (67.6)
Small bowel dilation	6 (17.6)
No abnormalities	5 (14.7)

ADDITIONAL RESULTS

- Management of intussusception was laparoscopic in the majority of cases and most intussusceptions were retrograde (Table 3)
- Surgical management involved reduction with or without enteropexy or jejunojunostomy revision (Table 3)

Table 3. Perioperative Intussusception Findings

	Initial Intussusception N (%)	Recurrent Intussusception N (%)
Operative Approach		
Laparoscopic	30 (90.9)	8 (100)
Open	3 (9.1)	0 (0)
Type of Intussusception		
Retrograde:	11 (78.6)	3 (37.5)
Common channel to roux limb	7 (63.6)	
Common channel to BP limb	4 (36.4)	
Antegrade	3 (21.4)	1 (12.5)
Type of Surgical Intervention		
Diagnostic laparoscopy	6 (18.2)	0
Enteropexy only	12 (36.4)	4 (50)
Reduction only	2 (6.0)	1 (12.5)
Reduction and enteropexy	8 (24.2)	2 (25)
Jejunojunostomy revision	5 (15.2)	1 (12.5)
Mean Time since Initial Intussusception Surgery (months)	N/A	39.9 (49.7)

CONCLUSIONS

- Jejunojunostomy length greater than 45mm may be associated with the occurrence of intussusception following RYGBP
- This association may explain the increased incidence of post-RYGBP intussusception noted in our case series
- Minimally invasive treatment with laparoscopic reduction and enteropexy may offer effective treatment for most patients