FACTORS ASSOCIATED WITH REOPERATION AFTER COMPONENT SEPARATION FOR VENTRAL/INCISIONAL HERNIAS – NSQIP ANALYSIS

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INTRODUCTION

- Abdominal wall component separation is used for management of large complex ventral/incisional hernias.[1]
- Creating large myofascial flaps although is highly functional, it can be challenging.[2,3]

AIM

- We sought to investigate the factors that are associated with reoperation within 30 days after such procedures.

METHODS

- National Surgical Quality Improvement Program (NSQIP) database between 2012 - 2018
- Inclusion criteria - all adult patients that underwent component separation (CPT codes 15734) for diagnosis of incisional/ventral hernias
- Exclusion criteria - Emergency and outpatient procedures. Patients that underwent other major abdominal procedures
- Patients requiring reoperation within 30 days related to the index procedure were compared to those that did not require reoperation.
- Preoperative and operative data were compared between the two groups.
- Factors identified on univariate analysis ($p<0.1$) were included in a multivariable logistic regression to recognize independent predictors of reoperation ($p<0.05$)

RESULTS

- We analyzed 9417 patients that underwent a component separation amongst a cohort of 148,434 patients with ventral/incisional hernias.
- Of these, 428 (4.5%) patients underwent reoperation within 30 days.
- Most common reoperation was for wound related complications (53%).
- Univariate Analysis (Table 1):
  We found that ASA score, BMI, current smoker status, operative time, wound classification and specialty were associated with reoperation.
- Multivariate Analysis (Table 2):
  - Current smoker status, increasing operative time and increasing BMI were independent positive predictors of reoperation
  - Plastic surgeon performed procedure was a negative predictor of reoperation.

Variable	No Return to OR	Return to OR	P value
Age < 65 years	71%	73%	0.29
>= 65 years	29%	27%	
Sex - Female	53%	52%	0.94
Male	48%	48%	
Race - White	83%	85%	0.75
Non White	10%	10%	
Ethnicity – Hispanic	94%	94%	0.67
Non Hispanic	6%	7%	
ASA 1/2	42%	36%	0.023*
3/4	58%	64%	
Non Diabetic	81%	80%	0.51
Diabetic	19%	20%	
BMI, mean +/- SD	32 +/- 7	34 +/- 8	<0.0001*
Non Smoker	81%	73%	<0.0001*
Smoker	19%	27%	
Preop Steroids	5%	5%	0.52
Func. dependent	1%	1%	0.695
Op time, mean SD	203 +/- 99 mins	224 +/- 117 mins	<0.0001*
Clean case class	82%	77%	0.006*
Other class	18%	23%	
Speciality - Plastics	10%	7%	0.054
General Surgery	90%	93%	

Table.1 - Univariate Analysis based on return to OR; $p<0.05$*

Variable	Odds Ratio (95% CI)	P value
ASA		
ASA 1/2	Ref	
ASA 3/4	1.14 (0.93-1.41)	0.215
Diabetes		
No	Ref	
Yes	0.97 (0.76-1.25)	0.82
Smoking Status		
Non smoker	Ref	
Smoker	1.62 (1.30-2.02)	<0.001*
Increasing Op. time	1.0015 (1.0006-1.002)	0.001*
Surgical Specialty		
General Surgery	Ref	
Plastic Surgery	0.68 (0.47-0.98)	0.044*
Increasing BMI	1.03 (1.01-1.04)	<0.001*
Wound Class		
Non Clean case	Ref	
Clean case	0.83 (0.65-1.06)	0.13

Table. 2 – Multivariate analysis – Odds Ratio for return to OR.
P<0.05*; CI- Confidence Interval

CONCLUSION

Reoperation within 30 days occurs in less than five percent patients after component separation. Wound related reoperations were most common. Smoking status, operative time, BMI and surgical specialty are independent drivers of reoperation.

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