

TOPS Data Analysis: Answering Clinical Questions

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What are True Complication Rates?

- What can patients expect from combined procedures?
- Compare a surgeon's complication rate to others?
- NSQIP not for outpatient aesthetic procedures
- Need for common aesthetic procedure database
- TOPS – not yet validated
- CosmetAssure – aesthetic procedure insurance policy

Benchmarking Outcomes in Plastic Surgery: National Complication Rates for Abdominoplasty and Breast Augmentation

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Background: The authors evaluated the use of national databases to track surgical complications among abdominoplasty and breast augmentation patients.

Methods: Their study population included all patients with abdominoplasty or breast augmentation in the Tracking Operations and Outcomes for Plastic Surgeons (TOPS) and CosmetAssure databases from 2003 to 2007. They evaluated the incidence of hematoma, infection, and/or deep venous thrombosis/pulmonary embolism. Chi-square and t tests were used for the analyses.

Results: The TOPS and CosmetAssure databases included 7310 and 3350 patients with abdominoplasty and 30,831 and 14,227 patients with breast augmentation, respectively. In the TOPS and CosmetAssure populations, the complication rates for abdominoplasty were 0.9 percent and 0.5 percent with hematoma ($p = 0.29$), 3.5 percent and 0.7 percent with infection ($p < 0.001$), and 0.3 percent and 0.1 percent with deep venous thrombosis/pulmonary embolism ($p = 0.05$), respectively. The complication rates for breast augmentation in TOPS and CosmetAssure were 0.6 percent and 0.7 percent with hematoma ($p = 0.21$), 0.3 percent and 0.1 percent with infection ($p < 0.001$), and 0.02 percent and less than 0.01 percent with deep venous thrombosis/pulmonary embolism ($p = 0.31$), respectively.

Conclusions: Complication rates for abdominoplasty and breast augmentation were similar in TOPS and CosmetAssure, providing a measure of cross-validation. The low complication rates support the safety of these procedures when they are performed by plastic surgeons. These data should be used by individual practitioners for outcomes benchmarking. (*Plast. Reconstr. Surg.* 124: 2127, 2009.)



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What did we Learn?

- Significant complications (hospitalization, ED care, reoperation) were low in TOPS & CosmetAssure
- Differences in complication definitions
 - TOPS – any SSI
 - CosmetAssure – SSI requiring policy payment

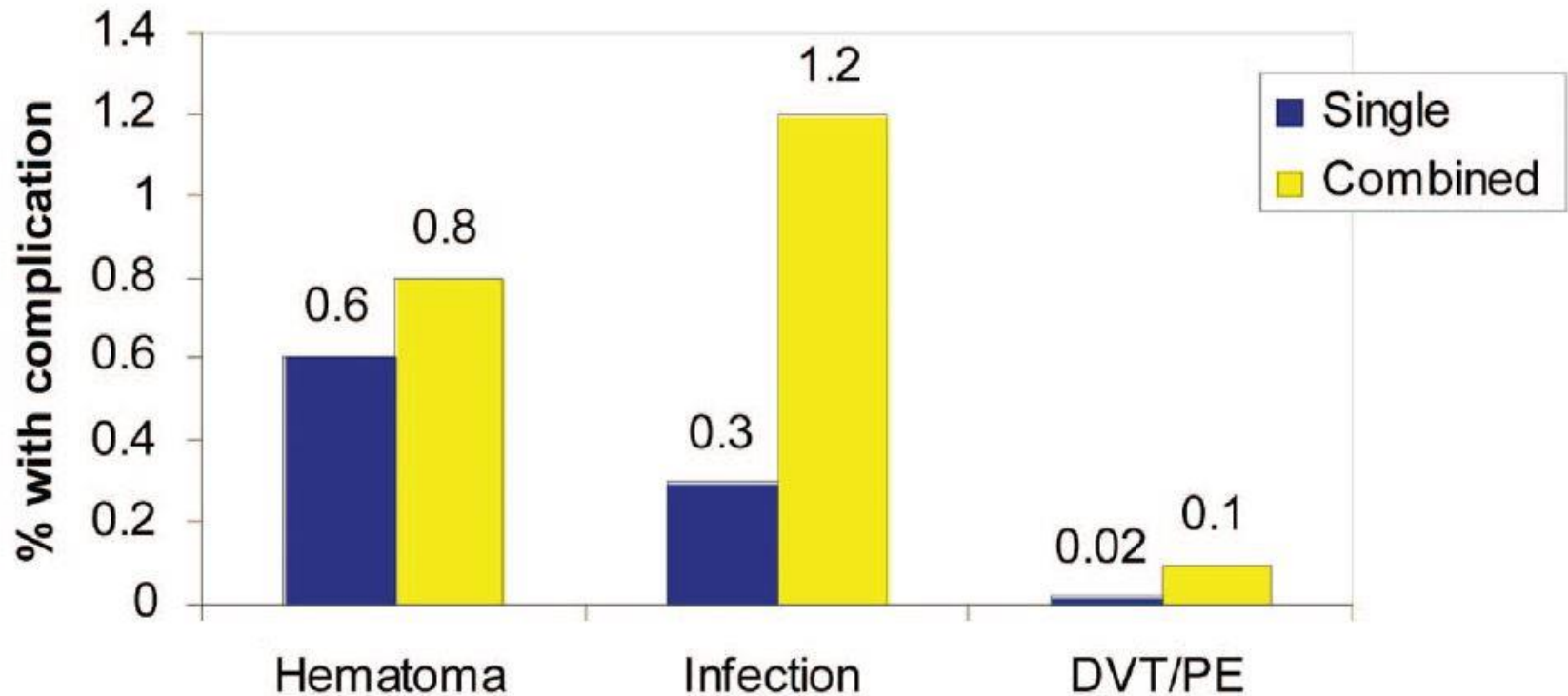
Abdominoplasty

	<u>Single Procedure</u>		<u>Combined</u>	
	TOPS	CA	TOPS	CA
Hematoma	0.9%	0.5%	1.0%	0.4%
Infection*	3.5%	0.7%	3.4%	0.3%
DVT/PE	0.3%	0.1%	0.4%	0.3%

Breast Augmentation

	<u>Single Procedure</u>		<u>Combined</u>	
	TOPS	CA	TOPS	CA
Hematoma	0.6%	0.7%	0.8%	0.2%
Infection*	0.3%	0.1%	1.2%	0.05%
DVT/PE	0.02%	0.01%	0.1%	0.06%

Combined Procedures Increase Risk



Antibiotics & Autologous Breast Reconstruction SSI

- Controversy over length to prophylactic antibiotic duration
- TOPS analysis of 1,036 patients

<u>Antibiotic Duration</u>	<u>Patients</u>	<u>SSI</u>	
≤24 hours	64%	5%	p = 0.1
>24 hours	36%	3%	

Antibiotic duration NOT predictive of SSI in multivariate regression modeling

- No significant difference in SSI rate with ≤24 hours vs >24 hours of antibiotics

Effect of Insurance Status on Complications

- 1163 Medicare & Medicaid breast reconstruction patients matched to privately insured patients
 - MC & MA status did NOT predict SSI, seroma, hematoma, implant removal, wound dehiscence
 - MA did predict flap failure
- Plastic surgeons provide consistent patient care irrespective of insurance status
- Higher complication rates reported by other specialties in MA & MC patients

Future Directions

TOPS has potential to

- Question conventional thinking
- Establish outcomes benchmarks
- Address health policy issues
- Evaluate health care variation

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