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**Title**

Do surgical closure techniques really effect the risk of surgical site infection (SSI) in dermatologic procedures?

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# Do surgical closure techniques really effect the risk of surgical site infection (SSI) in dermatologic procedures?

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## Introduction

- Closure techniques have been studied before as independent risk factors for SSI, though no large-scale studies have been done to understand their significance while taking patient demographic and surgical characteristics into consideration.

## Primary Outcome

- Assess closure technique as an independent risk factor for surgical site infections on excisions and Mohs micrographic surgery.

## Variables

### Surgical Site Infection: Definition for Study

Antibiotics given one or more days after surgery, post-surgery visits notes that mentioned "infection", culture positive report after surgery, purulent discharge, or signs and symptoms of pain, erythema, warmth, or pain on palpation.

### Surgical Procedures of Interest

Mohs micrographic surgery

Excision

### Closure Techniques

Primary Closure

Secondary Intention

Flaps

Grafts

## Project Overview

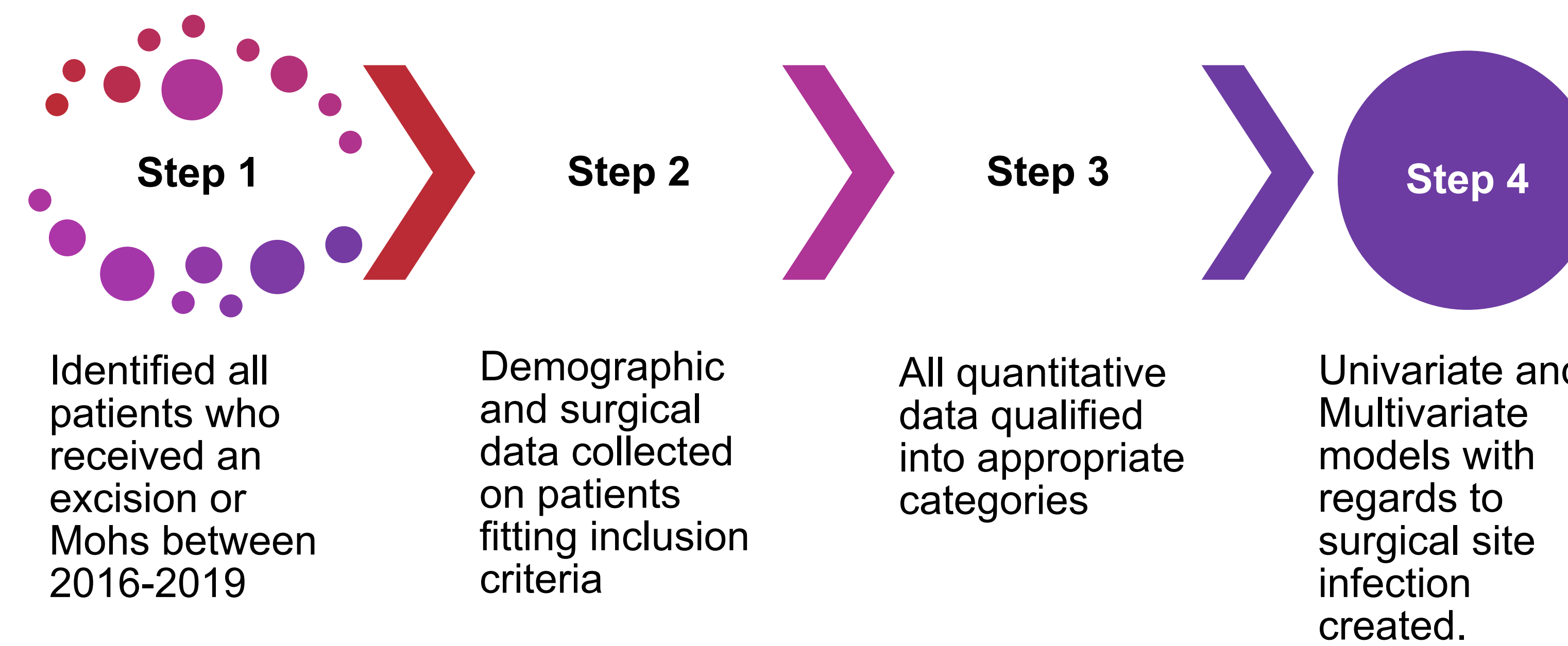
Sample Size ( n = 2453)

- Primary Closure: 1549
- Secondary Intention: 509
- Flap: 288
- Graft: 89

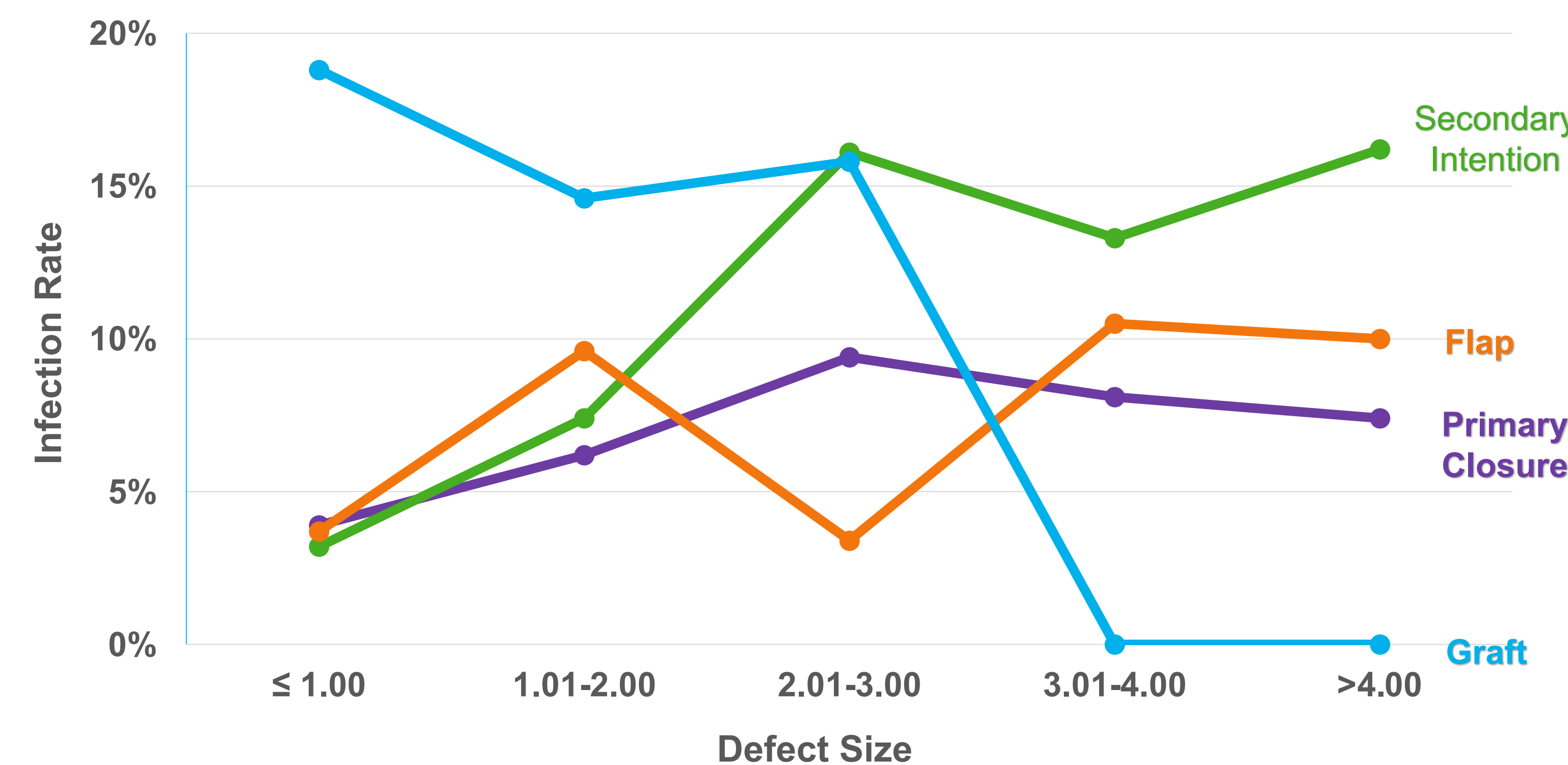
Infections ( n = 184)

- Primary Closure: 184
- Secondary Intention: 104
- Flap: 21
- Graft: 12

## Method



## Data



	Surgical Site Infection by Closure Technique and Defect Size (cm)				
	≤ 1.00 cm	1.01 -2.00 cm	2.01 -3.00 cm	3.01 -4.00 cm	> 4.00 cm
<b>Primary Closure</b>	n = 256	n = 763	n = 351	n = 111	n = 68
Infection Rate, %	3.9% (10)	6.2% (47)	9.4% (33)	8.1% (9)	7.4% (5)
<b>Secondary</b>	n = 62	n = 229	n = 118	n = 60	n = 37
Infection Rate, n	3.2% (2)	7.4% (17)	16.1% (19)	13.3% (8)	16.2% (6)
<b>Flap</b>	n = 54	n = 146	n = 59	n = 19	n = 10
Infection Rate, n	3.7% (2)	9.6% (14)	3.4% (2)	10.5% (2)	10.0% (1)
<b>Graft</b>	n = 16	n = 41	n = 19	n = 7	n = 6
Infection Rate, n	18.8% (3)	14.6% (6)	15.8% (3)	0.0% (0)	0.0% (0)
<b>Total</b>	n = 389	n = 1186	n = 551	n = 198	n = 55
Infection Rate, n	4.4% (17)	7.1% (84)	10.5% (58)	9.6% (19)	10.9% (6)

## Results

### Odds Ratio of Closure Techniques by Univariate Analysis

Secondary Intention	Flap	Graft	Reference
• OR 1.62 • P-value 0.01	• OR 1.11 • P-value 0.69	• OR 2.28 • P-value 0.01	• Primary Closure

### Significant Multivariate Analysis SSI Risk Factors

Defect Size	Primary Site	Gender
<b>1.01 - 2.00 cm</b> • OR 1.88, P-value 0.03 <b>2.01 - 3.00 cm</b> • OR 2.88, P-value <0.001 <b>3.01-4.00 cm</b> • OR 2.32, P-value 0.03 <b>&lt; 4.00 cm</b> • OR 2.86, P-value 0.01 <b>Reference</b> • ≤ 1.00 cm	<b>Lower Extremities</b> • OR 2.15, P-value 0.03 <b>Lips</b> • OR 2.79, P-value 0.04 <b>Reference</b> • Face	<b>Female</b> • OR 1.45, P-value 0.02 <b>Reference</b> • Male

\* Notably, no closure technique was significant by multivariate analysis.

## Conclusion

- Closure technique alone is not a significant risk factor for SSI in dermatologic surgeries.
- Other factors such as defect size, primary site, and interestingly gender, seem to play a more significant role in SSI risk.