



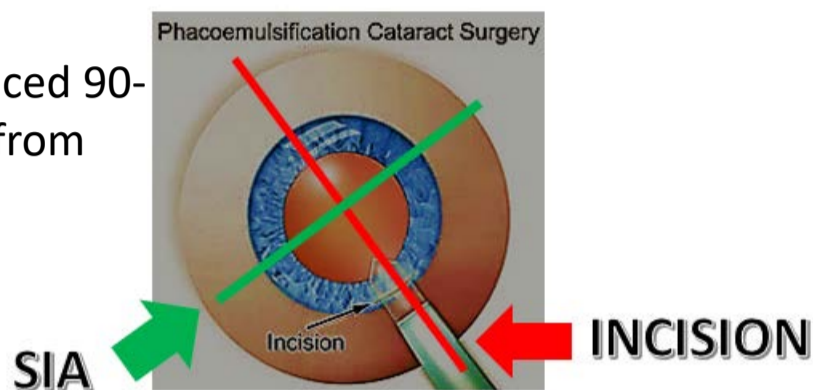
Relationship of Variation in Surgeon Phacoemulsification Techniques and Surgically Induced Astigmatism Consistency

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1. Introduction

- Surgically induced astigmatism (SIA) happened due to cornea incision during cataract surgery which induced corneal astigmatism 90-degree apart from incision location.
 - Calculated SIA = Actual SIA of a surgeon

Fig. 1 SIA induced 90-degree apart from main incision



- SIA magnitude is documented to be influenced by multiple factors¹; 1) cornea biomechanical properties, 2) incision size, 3) incision location and 4) preoperative astigmatism.
 - Variation in surgeon techniques may also affect the consistency of SIA.
- However, no studies have been conducted to verify the effect of surgical technique variations on SIA consistency

4. Results & Discussion

Table 1 Coherence and TVS

Surgeon	Coherence (%)	TVS
A	53	1
B	48	1
C	90	0
D	11	3

TVS

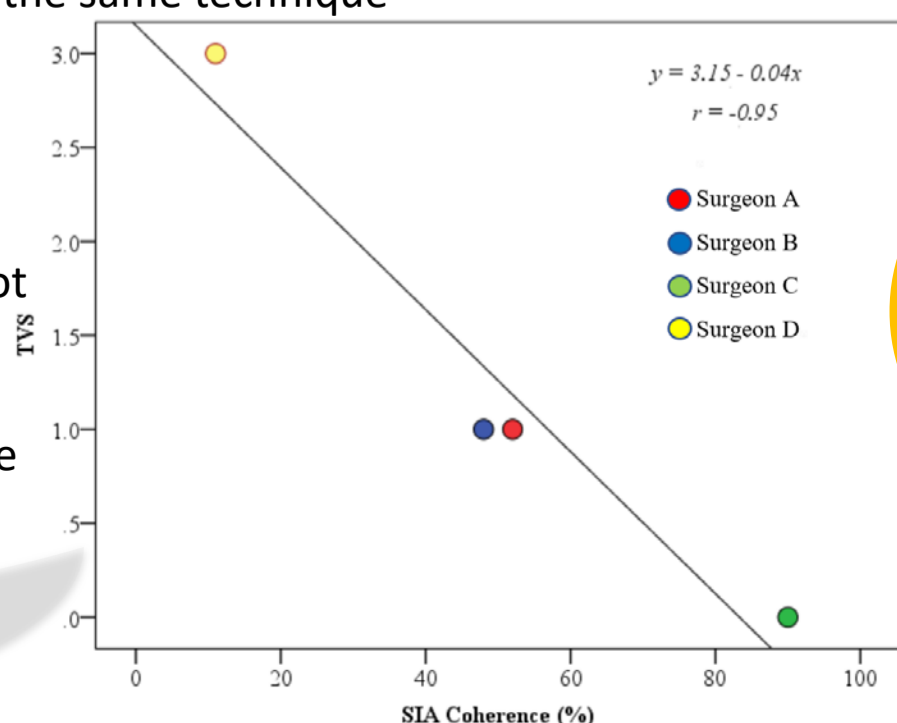
Lowest TVS = 0
Surgeon C performed same and consistent technique

Coherence

Highest coherence = 90%
in surgeon C. It reflects a high SIA consistency

- This could be contributed by;
 - Small incision size of 2.2mm practised by the surgeon.⁴
 - The surgeon familiar and comfort when using the same technique

Fig. 2 Scatterplot of TVS versus coherence



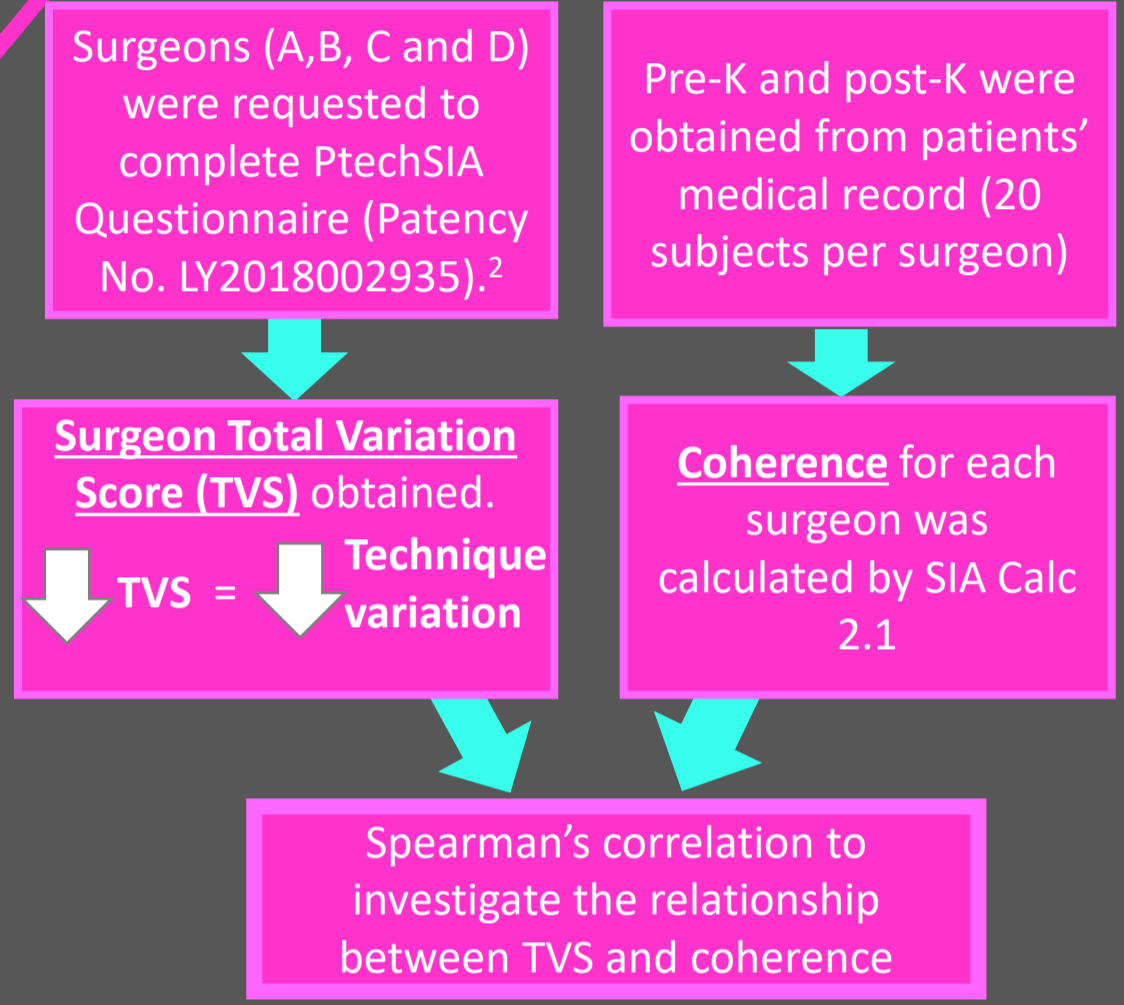
Strong negative correlation
($r = -0.95$, $p < 0.05$).

2. Objective

To evaluate the relationship of variation in phacoemulsification techniques practised by surgeon and the SIA consistency.

3. Methodology

Study design: Retrospective Study



Coherence
= Quantification of SIA consistency.³

5. Conclusion

- Variation** in surgeon phacoemulsification **techniques** contributes to **lower SIA consistency**.
- Therefore, a surgeon is recommended to apply a **consistent phacoemulsification technique** in all cases to achieve **better SIA consistency**.

6. References

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