

# Ideal Angle of Lester Jones Tube placement as studied in Thiel-embalmed human cadavers

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## Introduction

Lester Jones (LJ) bypass tube is commonly used for the treatment of epiphora where there is significant canalicular stenosis impeding successful outcome of dacryocystorhinostomy (DCR) surgery alone. The traditionally recommended placement angle for the tube is 30-40 degrees from midline passing through glabella/nasal bridge, however so far there is no literature supporting this value.<sup>1</sup>

We aim to study the ideal placement angle of LJ tube in Thiel-embalmed human cadavers. We hope our results can influence surgical practice and improve outcomes.

## Methods

The study was undertaken in an anatomy department in line with the rules and regulations governing the use of human tissue. 5 cadavers were used, of which the angles were measured bilaterally in all cases. Cadavers were prepared by performing a lateral rhynotomy, *Fig.1a*, to enable direct visualisation of the guidewire in the middle meatus and anteriorly to the middle turbinate, *Fig.1b*. Once the guidewire was passed and free of obstruction, ideal placement was confirmed by direct visualisation, *Fig.1c*.

The angle of placement was measured in respect to the midline. The inferior orbital rim was marked to optimise alignment of camera positioning when calculating the angles, *Fig.2*. The angles were measured from photographs obtained using a superimposed protractor, *Fig.2*. Guidewire placement and all measurements were performed by one individual.

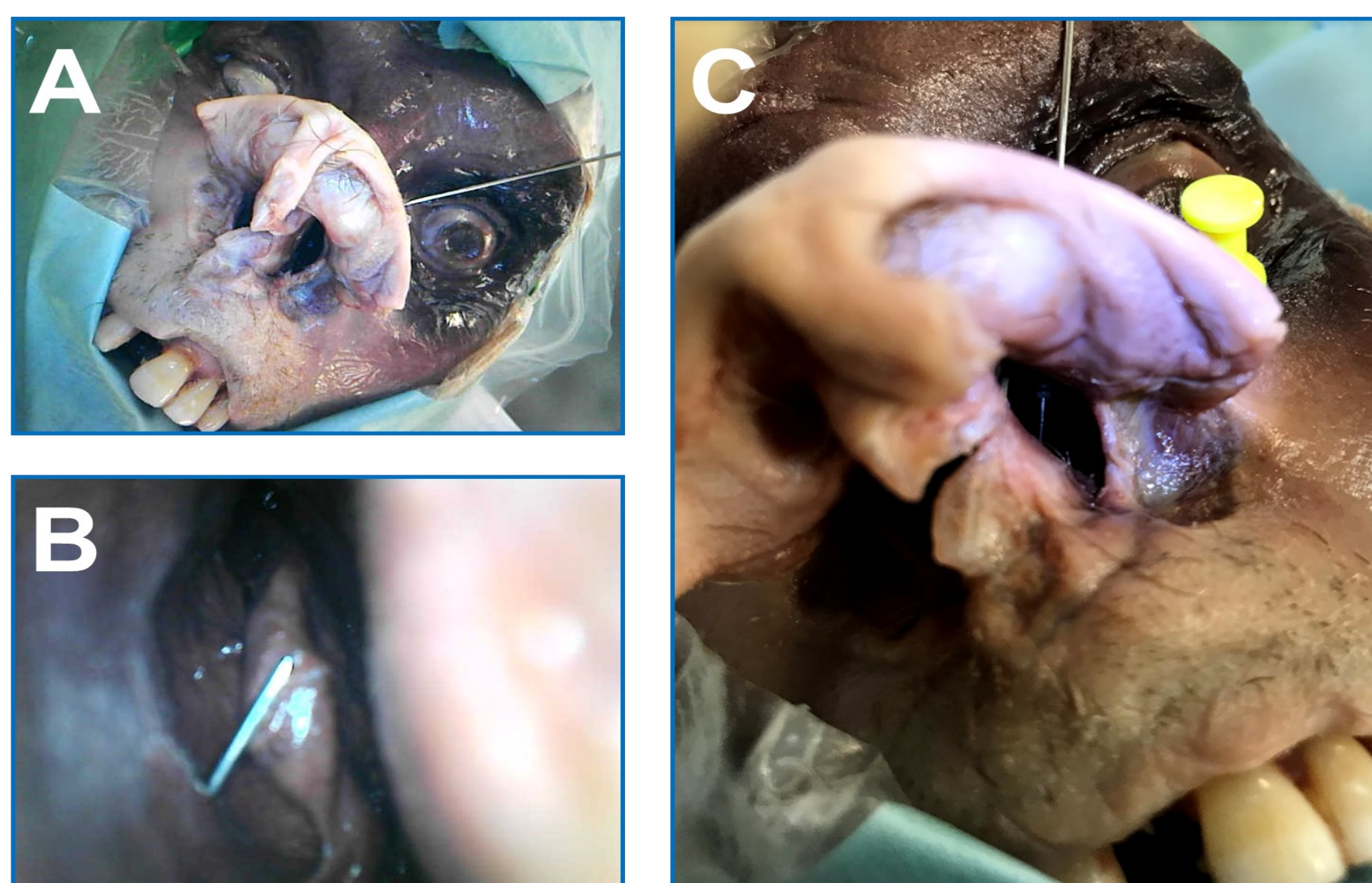
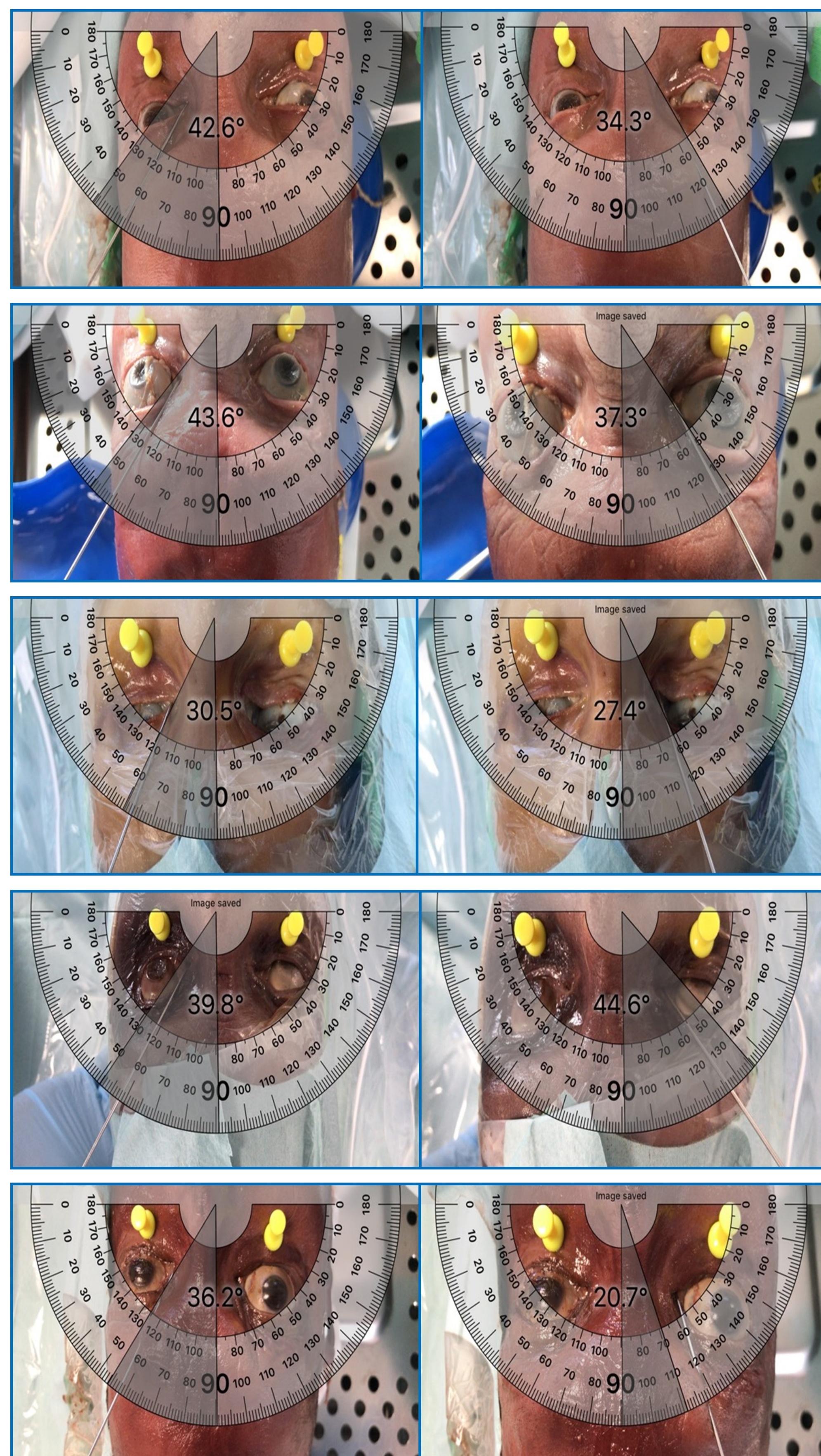


Figure.1. A: Lateral rhynotomy to allow visualisation, B: direct visualisation of guidewire in middle meatus and anterior to middle turbinate, C: Direct visualisation of ideal placement in middle meatus

## Results

The range of angles was 18-38, with a median of 31. The narrower angles were obtained in those cadavers where a bulky turbinate was noted.



## Discussion

The range of ideal placement angle for LJ tube in human cadavers was highly variable but generally less than that previously recommended. We conclude that the ideal placement is likely individualised for every patient, depending on anatomical variation. Middle turbinate configuration appears to have a key role in determining ideal placement angle.

## References

1.Schwarz RM, Lee S, Goldberg RA, Simon GJ. Modified conjunctivodacryocystorhinostomy for upper lacrimal system obstruction. Arch Facial Plast Surg 2007;

## Acknowledgements

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