

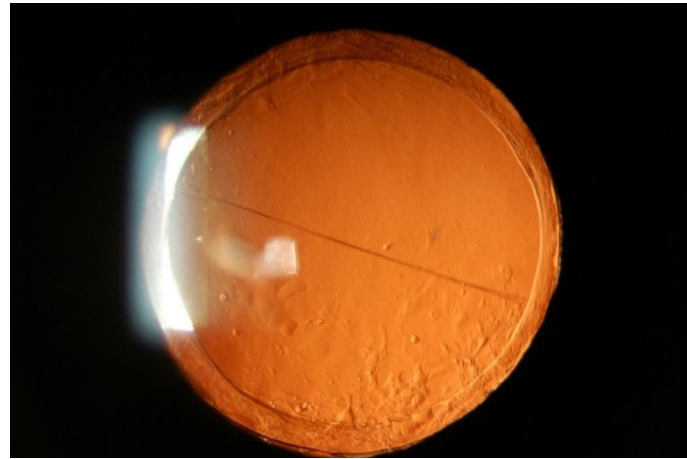
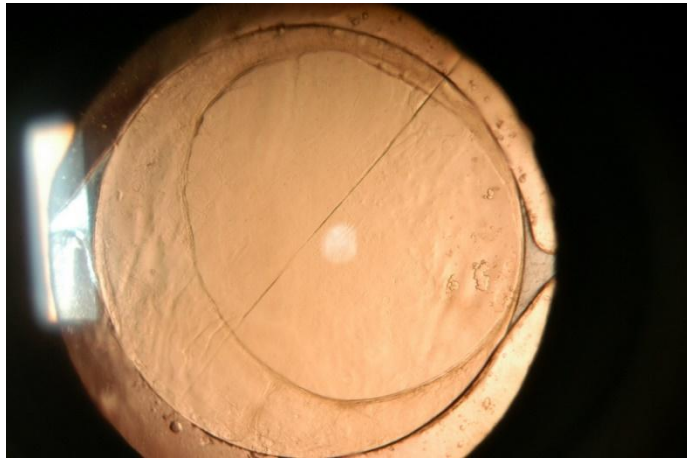
The Relationship between Posterior Capsular Wrinkle and Intraocular Lens

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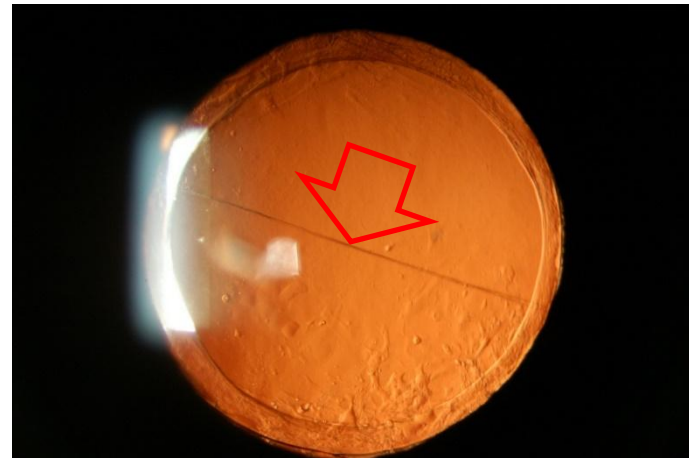
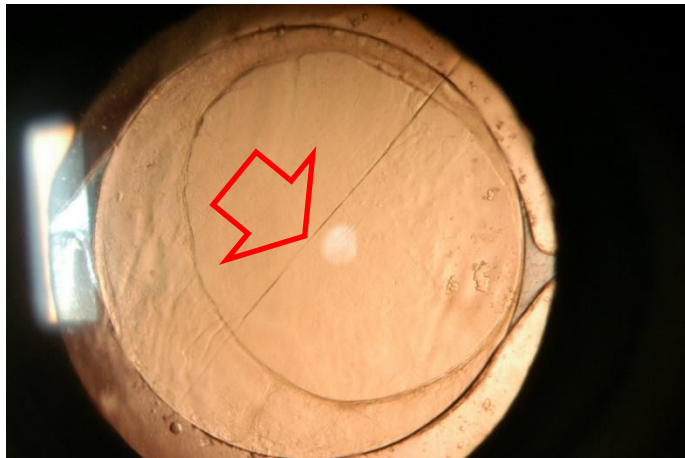
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PURPOSE

The posterior capsular wrinkle can sometimes be observed after intraocular lens (IOL) implantation. However, mechanisms of the wrinkles are not well known. In this study, we analyzed the relationship between posterior capsular wrinkle and IOL.

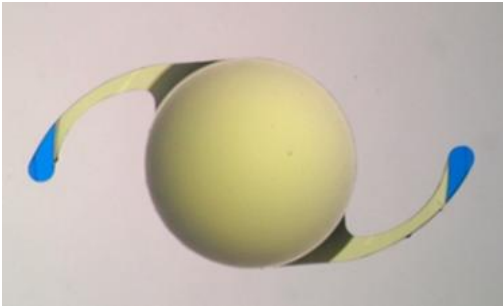
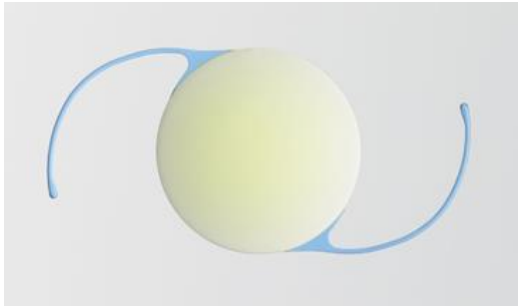


We try to make clear the mechanisms of posterior capsule wrinkles.

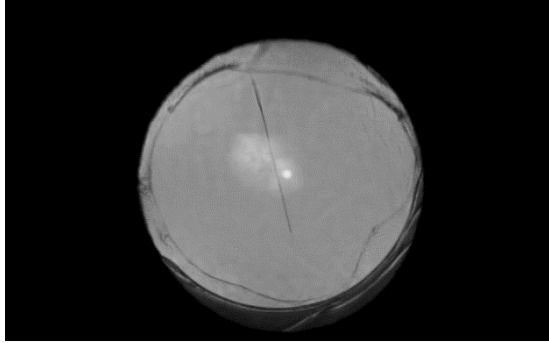

Which IOL causes wrinkle?

Subjects comprised 66 eyes that underwent phacoemulsification. Single piece IOL (NY-60, HOYA) or three piece IOL (PY-60AD, HOYA) were randomly implanted. The mean age of patients is 72.3 ± 7.4 .

Images were taken using an EAS-1000 (NIDEK) after 1 year postoperatively.

	NY-60	PY-60AD
		
Cases	36 eyes	30 eyes
Length	12.5mm	12.5mm
Material (Haptic)	Hydrophobic acryl + PMMA	PMMA

Which IOL causes wrinkle?

	NY-60	PY-60AD
		
Wrinkles (%)	1 eye (2.8%)	11 eyes (36.7%)*
No wrinkles (%)	35 eyes (97.2%)	19 eyes (63.3%)

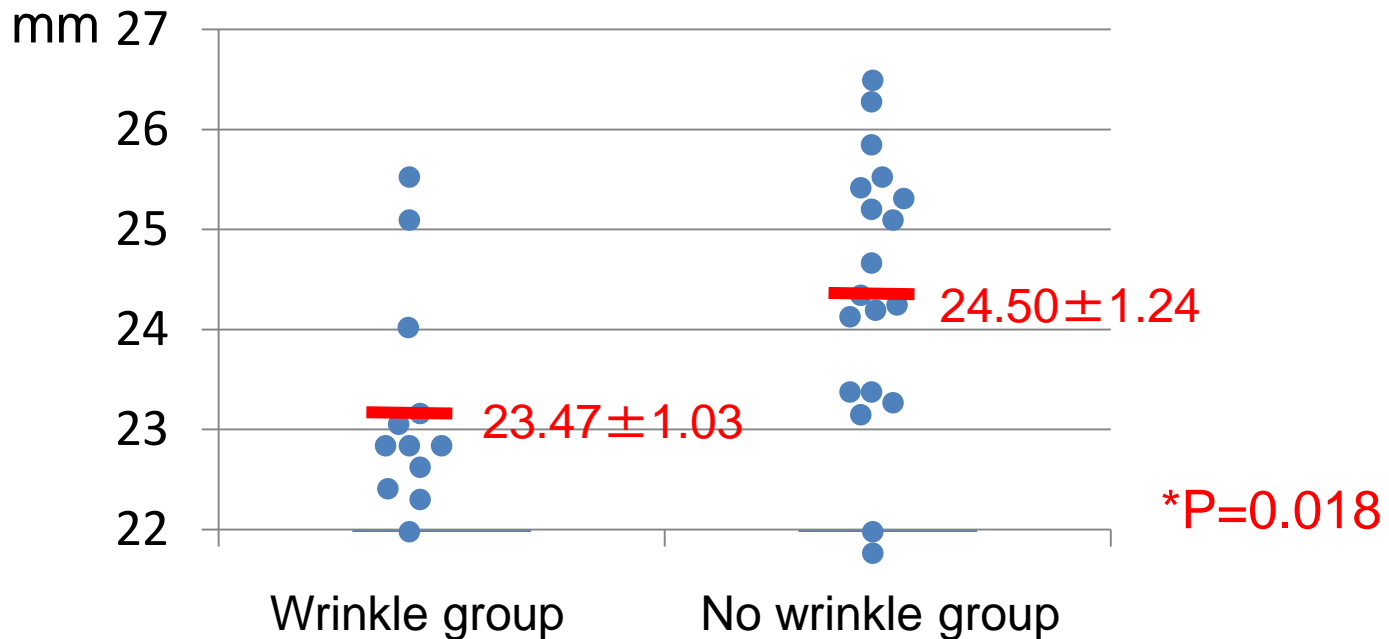
*P < 0.01

Answer

The wrinkles appeared in **PY-60AD** frequently.

Who causes wrinkle?

All patients were analyzed the axial length using IOL master (Zeiss), and axial length of 2 groups were compared.

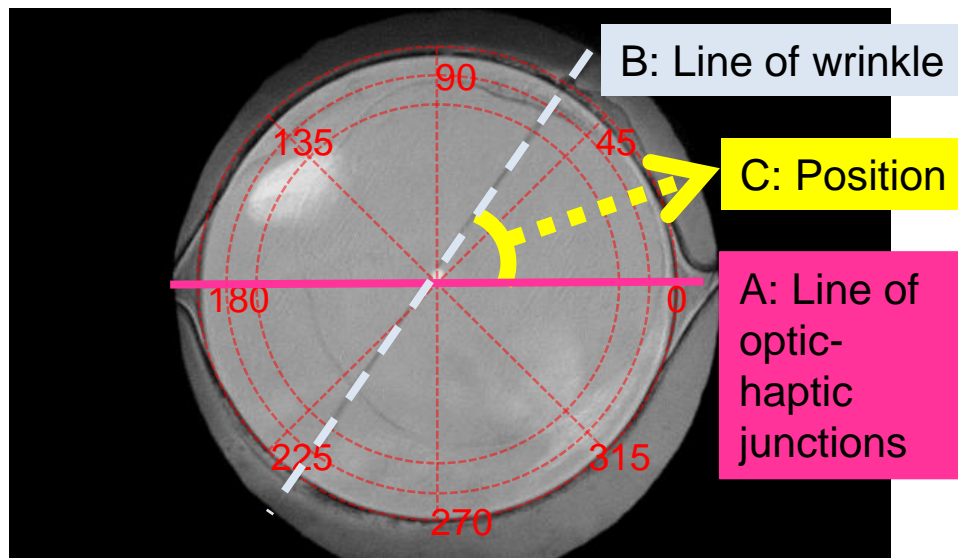


Answer

The wrinkle often occurs in short axial length eyes because they have small lens capsules.

Where does the wrinkle appear?

In the wrinkle group, the relationship between the position of wrinkle and the position of optic-haptic junctions were analyzed.

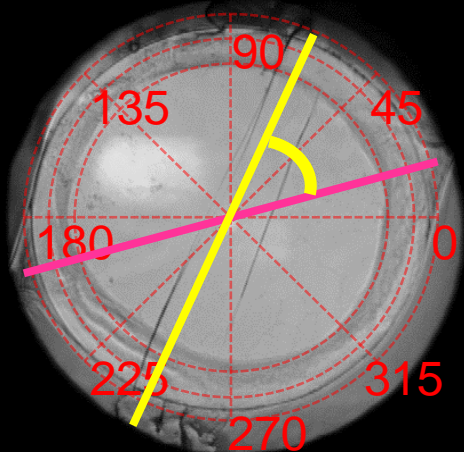


A: Line of optic-haptic junctions
■ The line which connected optic-haptic junctions is drawn (0 degree).

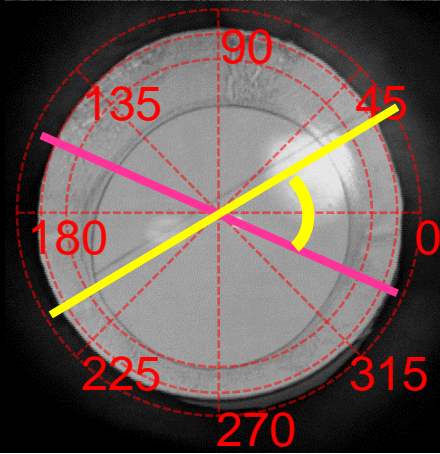
B: Line of wrinkle
■ The line of which placed at the wrinkle position is drawn.

C: Position of wrinkle (degree)
■ The angle of A and B is defined as position of wrinkle.

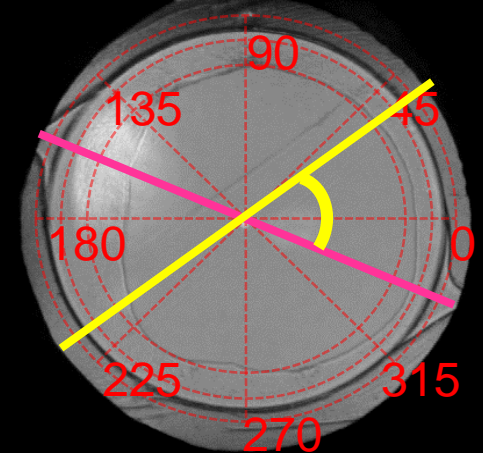
Where does the wrinkle appear?



52 degree



55 degree



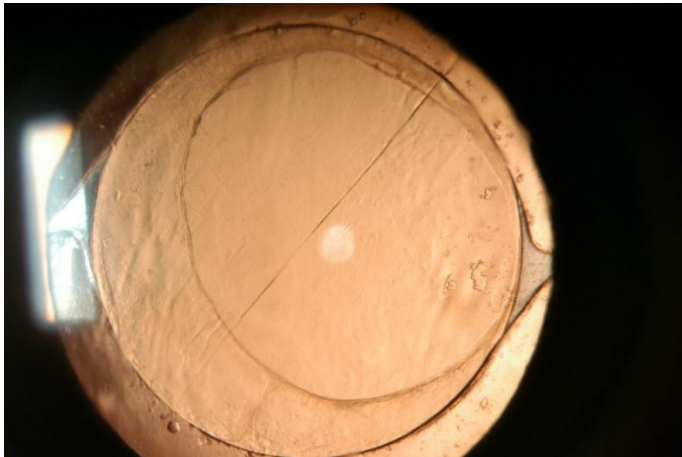
59 degree

Answer

In the wrinkle group, the direction of wrinkle were placed at an angle of 55.4 ± 3.6 degree from optic-haptic junctions regularly.

RESULTS

About wrinkles.....



Which?

PY-60AD

Who?

Short axial length eyes

Where?

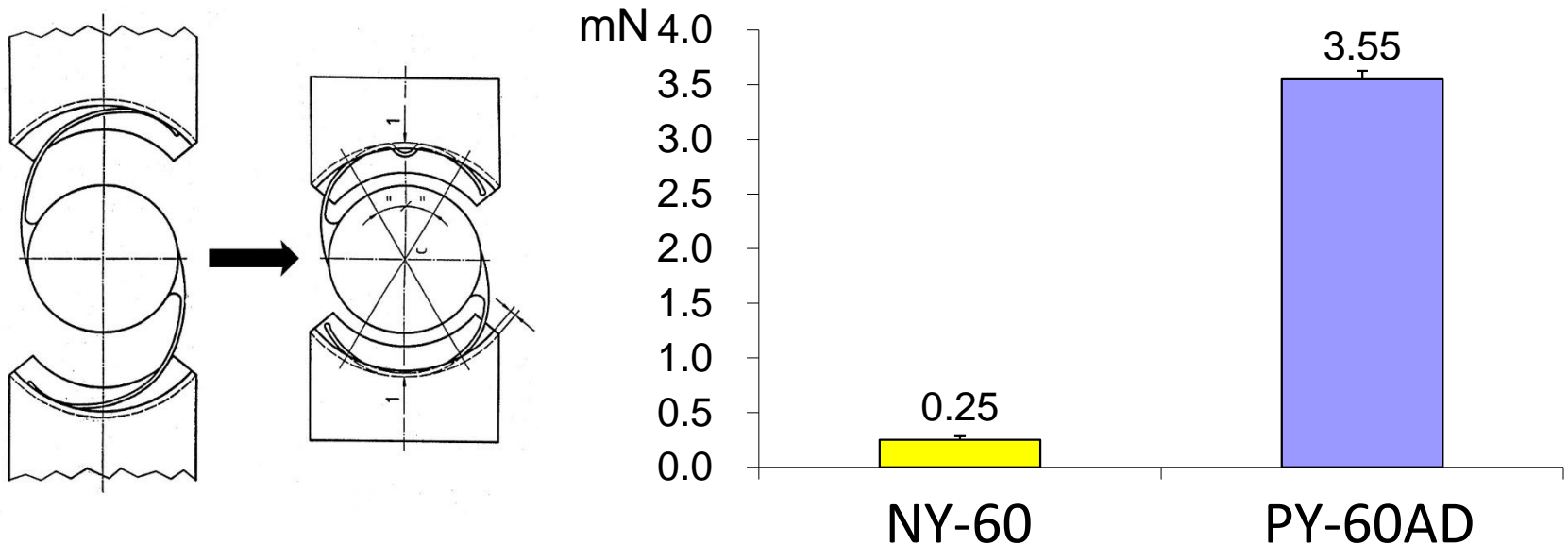
55.4 ± 3.6 degree from optic-haptic junctions



Why?

IOL compressive load test

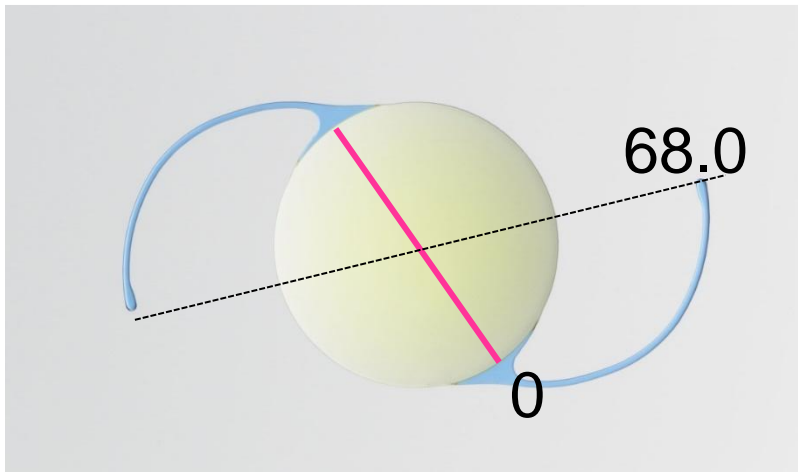
IOLs were compressed to 10Φ and the compressive strength were measured.



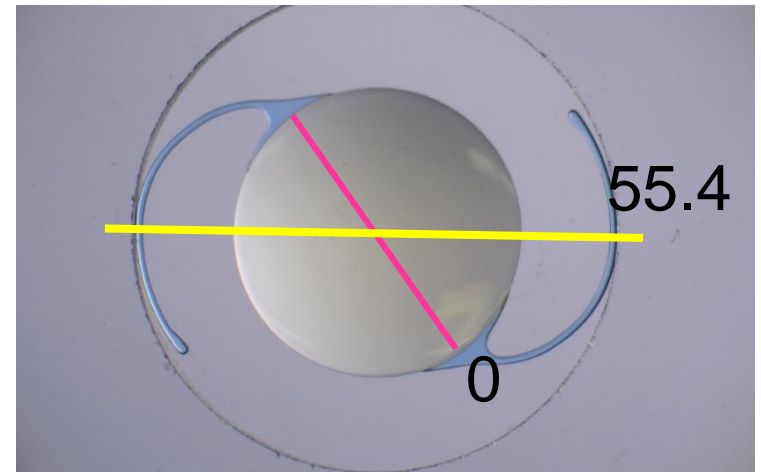
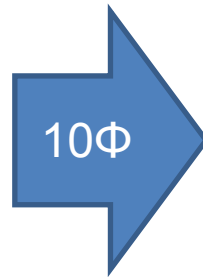
The PY-60AD has high compressive strength. And the haptics expand lens capsule, then wrinkle appear.

IOL compressive load test

The line which connected optic-haptic junctions is marked as 0 degree. Top of haptic is placed an angle of 68.0 degree. After the IOL compressed to 10Φ , the angle of the haptic contacted is 55.4 degree.



Top of haptic



Haptic contacted angle



The wrinkle appear at the angle of haptic contacted with a lens capsule.

CONCLUSIONS

- The wrinkle appears in the IOL having high compressive strength.
- The wrinkle occurs in short axial length eyes that have small lens capsules.
- The wrinkle is placed to direction of haptic contacted with the lens capsule.