New Bioabsorbable Scleral Buckling Implants: Histological Evaluation in Rabbits

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Purpose
To analyse histologically tissue reactions to bioabsorbable PLA96 in rabbit eyes.

Methods
Scleral buckling operation was done on fourty-eight rabbits. Two materials were used, bioabsorbable PLA96 (polylactide 96/4, molar ratio 96/4 of L/D) or silicone sponge. One eye from each rabbit was operated and the other eye served as a non-operated control. After follow-up times of 1, 3, 5 and 12 months, rabbits were sacrificed and eyes enucleated for histology.

Results
All rabbits recovered well. Histologically tissue reaction remained very localised, implant fragments were not seen within the sclera. The amount of fibrous tissue and inflammatory cells (mainly macrophages) inside the implant area increased by time. One rabbit from the silicone group was sacrificed four months postoperatively due to refusal to eat. In PLA96 group acute of chronic infections occurred in four rabbits. The bioabsorbable implant was macroscopically easily detectable at 12 months post operatively, with almost .

Conclusion
PLA96 material used for scleral buckling in rabbits showed good biocompatibility. The material did not undergo biodegradation during the follow-up of 12 months. PLA96 implant is associated with thicker fibrous tissue encapsulation and more inflammatory cells as compared to silicone sponge implant.

Key words
Scleral buckling, polylactide, silicone sponge

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