

Visual Recovery, Epithelial Healing, and Pain: Comparison of PRK and Epi-Bowman Keratectomy (EBK)

Lewis R Groden MD ^(1,2)

Hershel R Patel MS, MD ⁽²⁾

Therese Marie Alban MD ⁽¹⁾

1. LasikPlus Vision Centers

2. Dept Ophthalmology, Morsani College of Medicine, University of South Florida, Tampa FL

No Financial Interests

Purpose

To compare one day postoperative vision, epithelial healing, and pain in patients undergoing traditional PRK and patients undergoing epi-Bowman keratectomy (EBK)

PRK “issues”

- Postop pain
- Visual recovery time

Traditional PRK Epithelium Removal

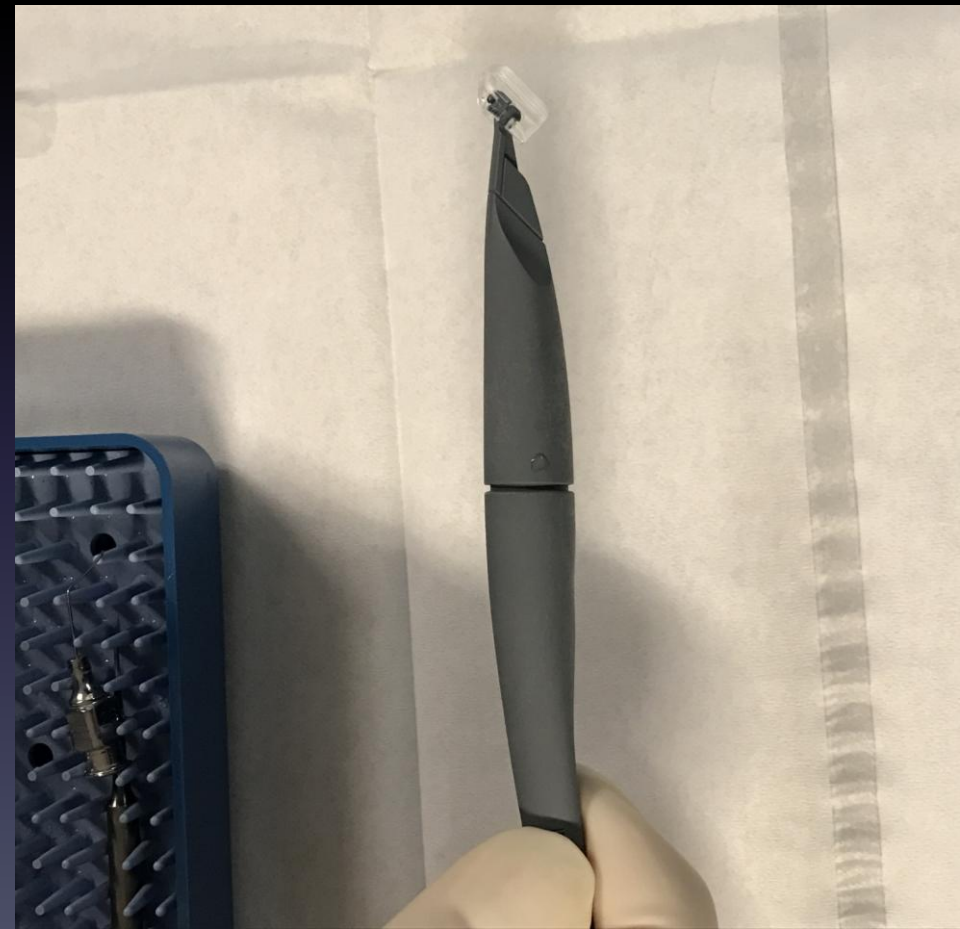
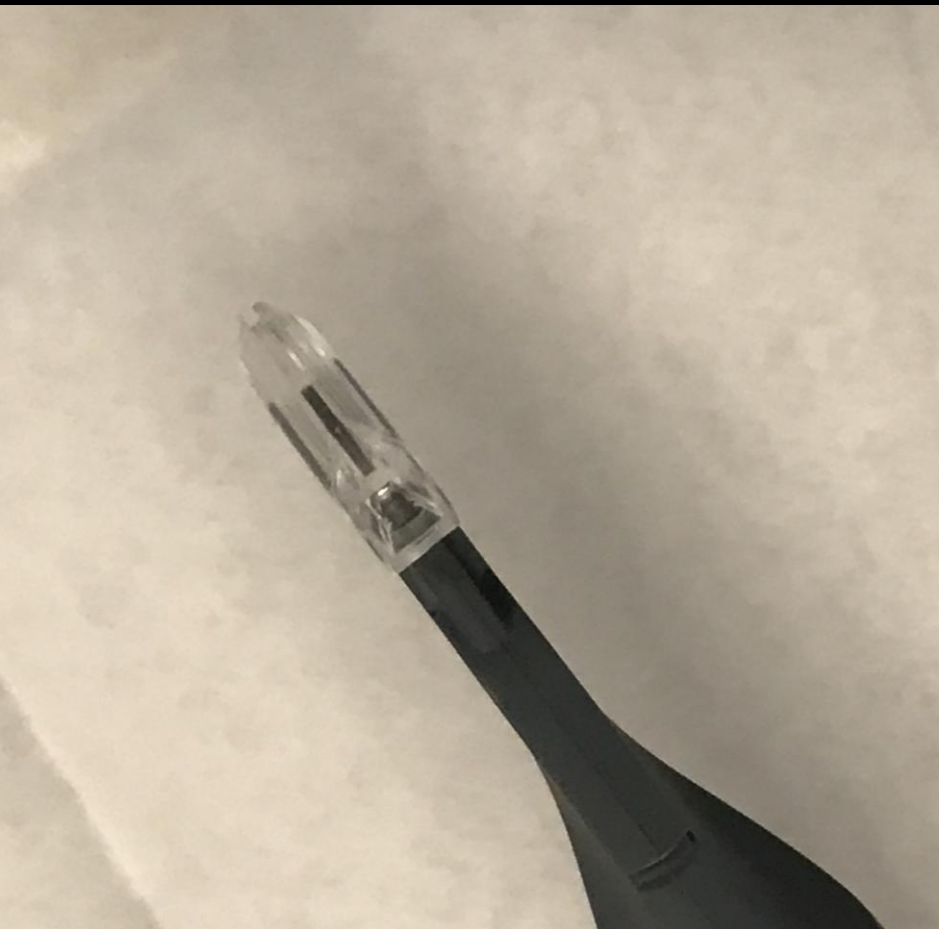
- 20% alcohol
- Amoils epithelial scrubber / brush

EBK

Epi Bowman Keratectomy

- EpiClear device (Orca Surgical)
- Mechanical epithelium removal

Epiclear device for EBK epithelium removal



Methods

- Retrospective review of 58 eyes of 33 consecutive patients undergoing myopic EBK, and 52 eyes of 26 patients undergoing PRK in which the epithelium was removed using 20% alcohol.
- One day postop uncorrected visual acuity (UCVA), % epithelial healing, and patient reported pain data were collected and analyzed.

Results

	EBK	PRK	
UCDA \geq 20/30	17 eyes (29%)	16 (31%)	$p=1.00$
UCDA OU \geq 20/30	20 pts (60%)	14 (54%)	$p= 0.79$
\geq 20/40	28 pts (85%)	19 (73%)	$p= 0.34$
$<$ 20/60	0 pts (0%)	4 (15%)	$p= 0.03$

Preop SE > 6D

EBK

PRK

UCDA \geq 20/30

10 eyes (41%)

3 (11%) $p=0.02$

	EBK	PRK	
Pain > mild	10% pts	46%	p= 0.009
Epi healing > 70%	95% eyes	25%	p= 0.001

- EBK pain experience holds thru first week
 - no increase in pain day 2-4
- EBK epithelial healing not just function of size of epi defect
- Alcohol prk = Amoils prk

Conclusions

- One day postoperative UCVA did not differ significantly except for eyes with a preop SE $> 6D$ in which EBK was significantly better than PRK.
- All EBK patients achieved one day UCVA $\geq 20/60$, compared to 85% PRK patients, $p=0.03$.
- Pain was significantly less in EBK patients, $p=0.009$.
- Epithelial healing was significantly better in EBK eyes, $p=0.001$.