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New instrument for revision lamellar refractive surgery

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ABSTRACT

A new instrument that aids in retreating or revising lamellar refractive surgery is described. The edge delineator and lifter can both delineate and lift the edge of a previously made corneal flap.

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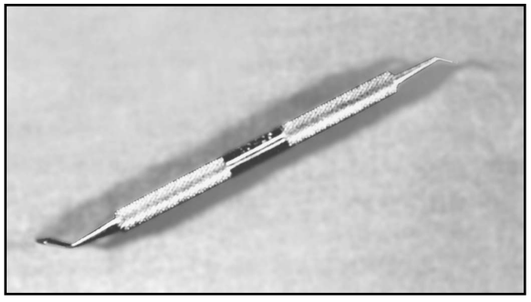
With the widespread acceptance and proven efficacy of the excimer laser, many refractive surgeons are now revising lamellar refractive procedures. This involves lifting the previously made corneal flap *(or creating a new one with a microkeratome 6 months to 1 year postoperatively)* and ablating the stromal bed.

Instruments such as the lens dialing hook, iris repositor, or cyclodialysis spatula are currently used to lift the previous corneal flap. However, because they do not create a sharp profile, these instruments may cause uncontrolled penetration of the corneal flap edge, inconsistent maneuverability, and epithelial fraying, leading to postoperative pain and delayed healing.

The feature that distinguishes the edge delineator and lifter is that it can be used at the slitlamp biomicroscope. With the other instruments, it is usually difficult to locate and delineate the previous corneal flap edge under the operating microscope if the flap has a clear, healed edge. It can also be difficult because of the disturbing reflexes of the microscope lights.

The handheld edge delineator and lifter is made of stainless steel; it is 8.0 cm in length with arms at 45 degrees to the main handle. The functional components are on opposite sides of the ends of the arms **(Figure 1)**. The delineator end is an arc-shaped plate that fits snugly into the flap edge; when moved in an arc, it outlines and separates the flap at the edge. The lifter end is bench-shaped with a 2.0 mm wide horizontal plate that is slipped under the delineated edge; the vertical plate acts as a rudder (preventing false passages) when the peripheral 2.0 mm of the flap edge are raised in an arc movement. The 45 degree angulation of the arms allows complete visualization during the procedure.



(Figure 1). (Gulani) the edge delineator and lifter.

The instrument allows an edge lift of 2.0 mm, which is important for the following reasons: A lift of more than 2.0 mm will allow the flap to be easily displaced and may also lead to ocular discomfort while the patient is waiting to be moved to the operating room. A 2.0 mm edge lift enables the surgeon to elevate the remaining corneal flap with an atraumatic forceps in the operating room.

The instrument can be used for right and left eyes and for both myopic and hyperopic corneal flaps. ■