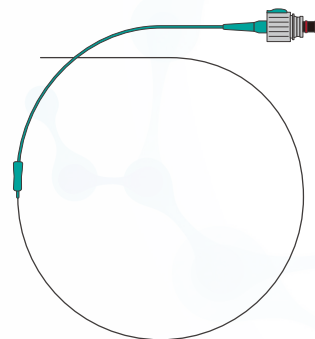




## NeedleCam HD

- Camera and light source in a single device
- Still image (JPEG): 1920 x 1080
- Video file (H.264): 640 x 480 / 30 fps
- HDMI output
- Portable size
- Data management through USB port



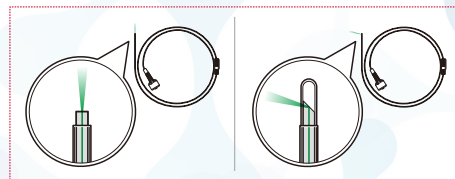
## Flexible Scope

- 0.9 mm in diameter
- 488 mm in length
- 10,000 pixels

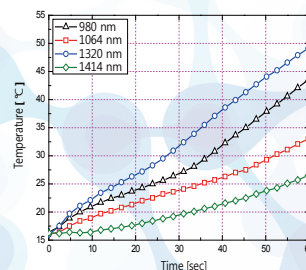
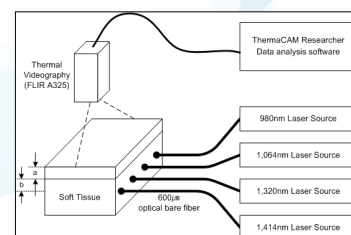


## ACCUPLASTI

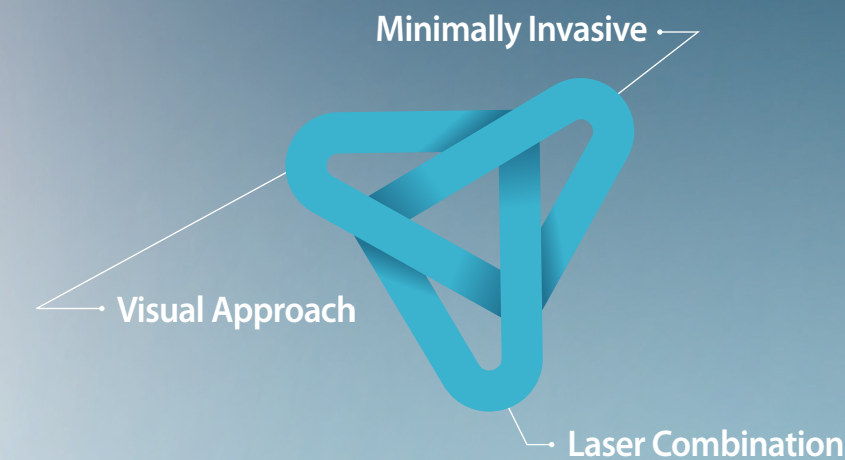
- Type of laser: pulsed Nd:YAG
- Wavelength: 1,414 nm
- Maximum power: 12 W
- Max frequency: 20 Hz
- Guide beam: 532 nm
- Laser fibers (separate consumable products)
  - : 550  $\mu$ m forward-firing laser fiber
  - : 550  $\mu$ m side-firing laser fiber



- 1,414 nm is the safest wavelength which offers minimal peripheral thermal damage than other wavelengths due to water absorption-related thermal confinement



# Laser Micro-Epiduroscopy (LME)



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SMART SURGERY FH-BR-4100158700 Rev. 1.0

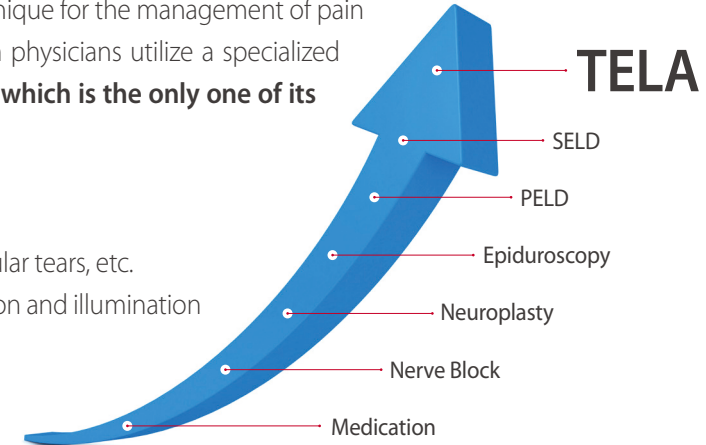




## TELA (Trans-foraminal Epiduroscopic Laser Annuloplasty)

TELA is a minimally invasive procedure technique for the management of pain caused by various spinal disorders, wherein physicians utilize a specialized epidural scope called the **NeedleView CH**, which is the only one of its kind worldwide.

- **Bendable** scope
- **Laser** to correct herniated discs or annular tears, etc.
- **Built-in fiber optics** to bring visualization and illumination
- **Medicine** to relieve pain



## TELA

SELD

PELD

Epiduroscopy

Neuroplasty

Nerve Block

Medication

### What are the drawbacks of PELD procedure?

- Difficulty to reach into the IVF (e.g. large outer diameter at 8 mm)
- Impossible to bend the shaft for making gentle curve
- Still larger incision entry

### What are the drawbacks of SELD procedure?

- Excruciating pain during the procedure
- The Sacral Hiatus is sometimes very tiny or even closed (80 % success rate)
- Possibility to navigate guide wire or catheter to dorsal epidural space (e.g. very stiff sacral angle)
- Poor visualization
- Difficulty to reach target lumbar level if there is tough adhesion
- Possible nerve injury by forward-firing laser
- Long pathway to target lumbar level
- Cannot combine discectomy

## TELA

(Trans-foraminal Epiduroscopic Laser Annuloplasty)



## NeedleView CH Scope

- Bendable
- Built-in fiber-optic-based scope
- Single working channel (for laser fiber introduction and drug delivery)
- 3.4 mm outer diameter
- 1.85 mm working channel
- 160 mm working length
- 17,000 pixels

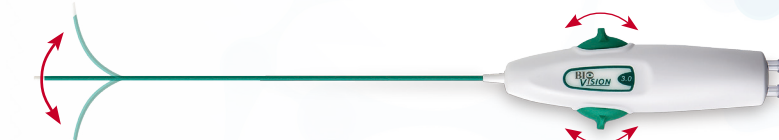


## BioVision 1.7 Epidural Catheter

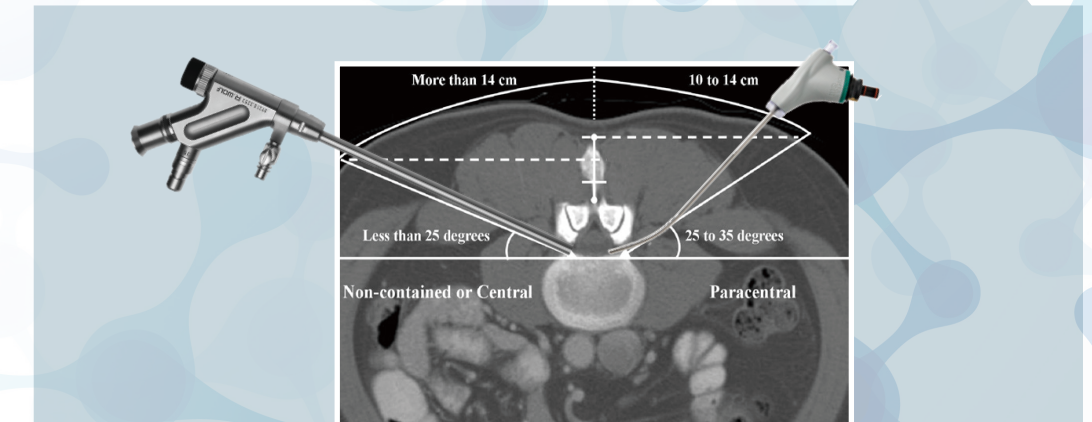


- Steerable at  $\pm 90^\circ$  (180°)
- 1.7 mm outer diameter
- 0.86 mm working channel
- 292 mm working length

## BioVision 3.0 Epidural Catheter



- Steerable at  $\pm 90^\circ$  (180°)
- 3.0 mm outer diameter
- Two 1.1 mm working channels
- 276.8 mm working length



## Straight Scope

- More horizontal approach  $>14$  cm
- Longer scope
- Risk of injury to the nerve root or disc
- Impossible to approach from posterior (L5-S1)

## Bendable Scope

- Skin entry  $< 12$  cm off the midline
- Shorter scope
- Safer and easier access through the IVF
- Not difficult to approach the ventral epidural space through the IVF, even at L5-S1