

Tips & Techniques

For using the ClearVu™ Flexible Inflow-Outflow Cannula



TIP #1: Ensure Effective Positioning of the ClearVu for Third-portal Knee Arthroscopy

Although there are a number of different ways to position a third-portal inflow-outflow cannula when performing knee arthroscopy, Cannuflow® recommends that the ClearVu™ 2.7 Inflow-outflow cannula be placed in the medial gutter (Figure 1a, 1b).

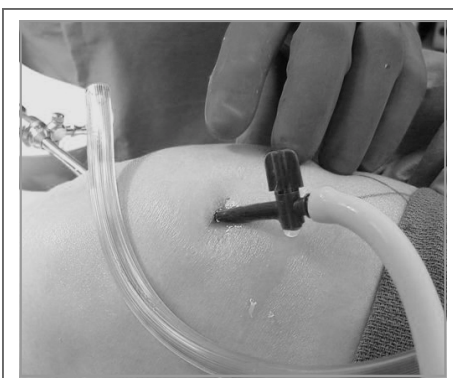


Figure 1a—Inserting the ClearVu 2.7 into the knee capsule

This is the most common positioning and allows the ClearVu to easily conform around the medial femoral condyle as well as remain unobtrusively in place

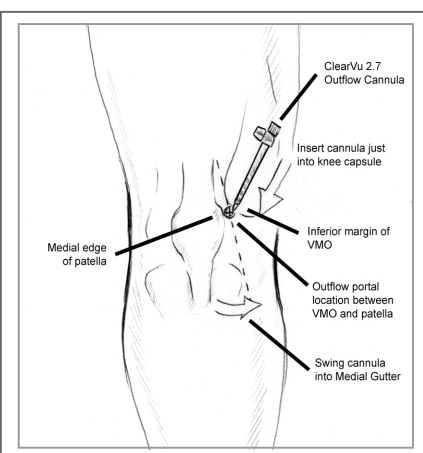


Figure 1b—Optimal location for inserting the ClearVu 2.7

throughout a full range of motion. (Figure 2). Proper positioning of the ClearVu cannula ensures the maximum performance of the device.

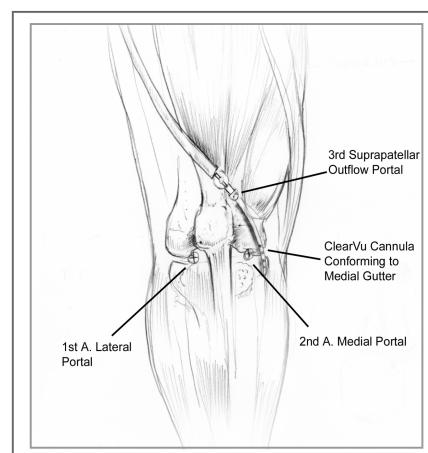


Figure 2—Placement of the ClearVu 2.7 in the medial gutter

TIP #2: Reduce Potential for Denting or Gouging of Articular Surfaces

Published medical research has established that articular surface damage caused by metal instrumentation (Figure 3) during an arthroscopic procedure can have serious repercussions on future joint health.^{1,2,3} Replacing a metal cannula with a ClearVu

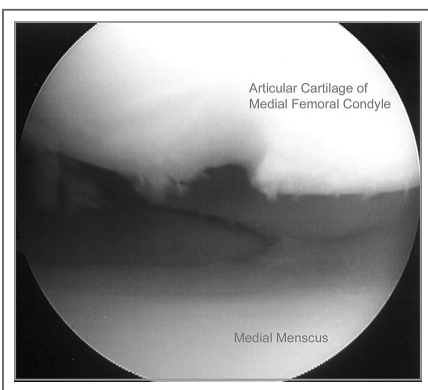


Figure 3—Compression damage to articular surface from metal instrumentation



Figure 4—Innovative, flexible design and polymer construction

2.7 Flexible Inflow-outflow cannula reduces the potential for the damage to articular surfaces that can be caused by using a metal cannula, especially if it gets impinged between the patella and trochlear notch during flexion.

The polymer construction and progressively flexible design of the ClearVu

flexible cannula (Figure 4) conforms to joint surfaces as the knee is articulated, something not possible with metal cannulae (Figure 5). No repositioning of the ClearVu is required to avoid potential damage or to improve visibility. (See TIP #5)

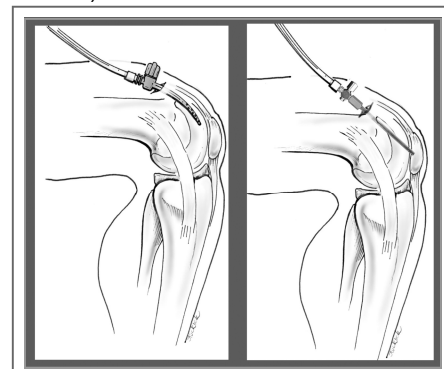
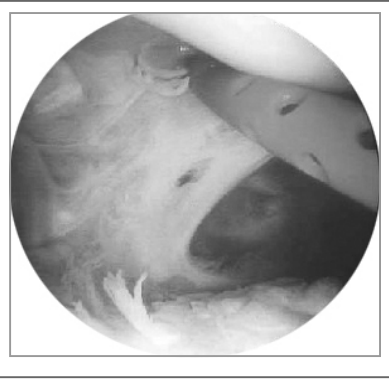


Figure 5—ClearVu flexibility vs. rigid metal cannula

TIP #3: Achieve 1.0 Liter/min Flow with Smaller OD

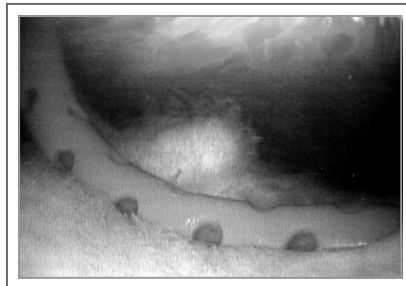
Consistent irrigation flow is key to maintaining visualization and efficient debris evacuation in arthroscopic surgery. Therefore, many surgeons are turning to larger OD inflow-outflow metal canulae to help achieve greater flow capabilities. However, using a larger metal cannula can create greater post-operative discomfort (third-portal pain) and can still get clogged if impinged.



Uninterrupted flow in small OD due to flexible, tapered design

The flexible, tapered configuration of the ClearVu 2.7 Flexible Inflow-outflow Cannula delivers reliable flow rates of up to **1.0 liter per minute using just gravity** in the much smaller 2.7 OD.

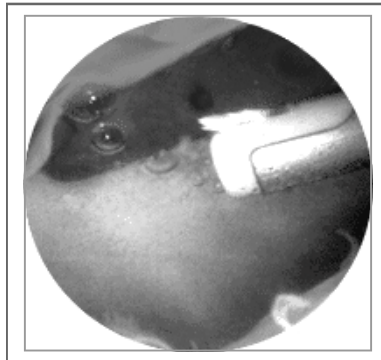
In addition, the flexible polymer design allows for more fenestration at the distal end of the cannula (as compared to a metal cannula) for improved evacuation and reduced potential for clogging regardless of the placement of the joint.



More fenestrations, reduced clogging

TIP #4: Reduce Radio Frequency Device 'Short Out'

The non-conductive, heat-resistant polymer construction of the ClearVu will not interfere with RF or thermal remodeling devices even upon direct contact. In addition, the constant flow capability of the ClearVu ensures that fluid temperatures do not build up in the joint during RF treatment.



Eliminates frustrating & time-consuming RF 'Short Outs'

ClearVu 2.7 Specifications

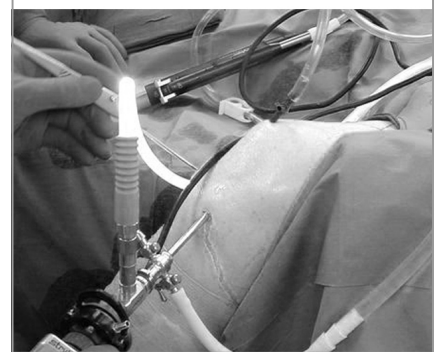
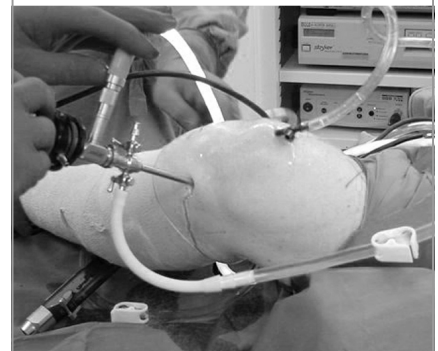
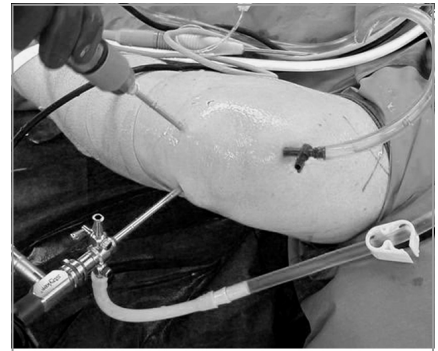
- Flow Rate: 0-1.0 liters/minute, stop-cock controlled
- Flexibility: 0-90 degrees, non-kinking
- Inside diameter: 2.7mm
- Outside diameter (sheath) 5.6mm max, 3.1mm min
- Working length 8.5cm

Product Options:

- Sharp Trocar —Ref# CV27-S
- Blunt Obturator —Ref# CV27-B

References

- ¹ Darryl D. D'Lima, Martin K. Lotz, Clifford W. Colwell Jr. Cartilage Injury, Chondrocyte Apoptosis and Matrix Degradation: In Vitro, In Vivo and Clinical Consequences. *Scripps Clinic Center for Orthopaedic Research & Education. Submitted for Kappa Delta Award, June 2004*
- ² Gregory E. Raab, Christopher M. Jobe, Paul A. Williams, Qiang G. Dai. Damage to Cobalt-Chromium Surfaces During Arthroscopy of Total Knee Replacement. *Journal of Bone and Joint Surgery 83:46 2001*
- ³ BH Borazjani, AC Chen, WC Bae, GE Nugent, BL Schumacher, MS Voegtline, S Patil, DD D' Lima, GS Firestein, RL Sah, WD Bugbee. Mechanisms and Consequences of Chondrocyte Injury During Impact Loading and Insertion of Human Osteochondral Grafts. *51st Annual Meeting of the Orthopaedic Research Society; Poster No: 0351, 2005*



TIP #5: Reduce Repositioning

The flexible design of the ClearVu allows the cannula to articulate with the joint through a full range of motion, ensuring constant flow while protecting soft tissue and articular surfaces **even in a figure four position.**

Cannuflow
THE FLEXIBILITY TO SEE CLEARLY

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