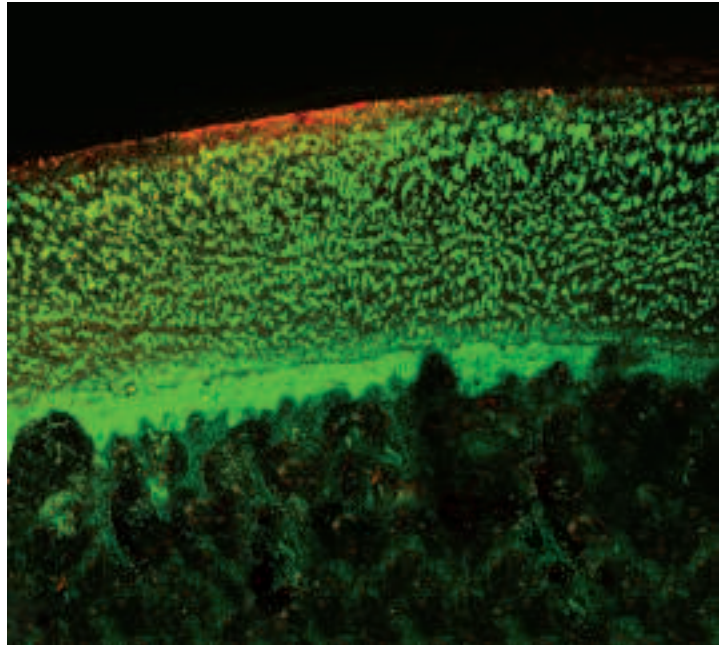


Thermal chondroplasty using the Smith & Nephew DYONICS[◇] GLIDER[◇] Articular Cartilage Probe



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Introduction

Chondromalacia is the most common arthroscopically observed knee pathology. It is characterized by softening, fissures, fibrillation and progressive deterioration of articular cartilage.

Once injured, articular cartilage is not able to proliferate and lay down new matrix to repair the injury. Thus, it is very important to protect and maintain as much viable tissue as possible when treating cartilage lesions.

Goals of treating Grade II and III articular cartilage defects include creating a smooth surface and preserving healthy tissue. *In vitro* studies have demonstrated that with proper use the GLIDER probe will smooth cartilage while creating a superficial layer of cell death.⁷

This technique guide provides an overview of the thermal chondroplasty technique using the GLIDER probe. Consult the GLIDER® Articular Cartilage Probe Instructions for Use (REF 1061559) for additional information on indications, contraindications, warnings, precautions and directions for use.

Device Overview

The GLIDER probe has a flexible, pivoting head that follows joint surface contours, making it uniquely suited for articular cartilage applications.

The GLIDER probe is designed to be used with the Smith & Nephew VULCAN® Generator. The VULCAN generator's impedance control feature automatically reduces energy delivery when the probe is not in contact with tissue. This helps prevent tissue damage that may result from heating the irrigation fluid.

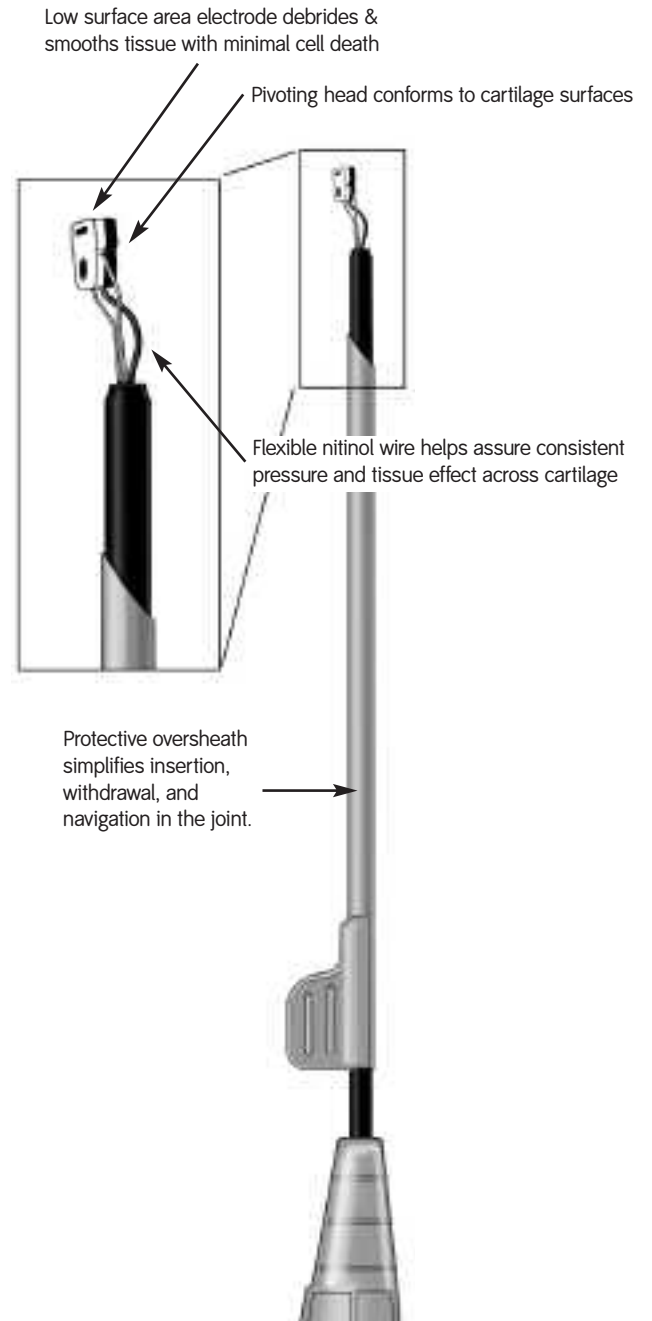


Figure 1: Smith & Nephew DYONICS® GLIDER® Articular Cartilage Probe



Figure 2. ground pad placement.

Technique

1. Prepare the patient for arthroscopic monopolar electrosurgery using standard technique. Refer to the Smith & Nephew Ground Pad Placement Instructions (REF 1061420) for complete information on pad location, selection and orientation (Figure 2).
2. Perform a diagnostic arthroscopy to identify Outerbridge Grade II and Grade III chondromalacia lesions (Figure 3).
3. Use a mechanical shaver or hand instrument to remove large or unstable chondral flaps (Figure 4).



Figure 3. Grade III chondromalacia patella.



Figure 4. Chondral flap being debrided with shaver.

4. Prepare the GLIDER probe for use. Align the tab on the protective sheath with the arrows on the probe handle (Figure 5). Slide the sheath over the probe head.
5. Place a finger proximal to the tab on the sheath to facilitate insertion (Figure 6). Carefully insert the probe into the knee through a standard arthroscopy portal.



Figure 5. Sheath's tab aligned with the arrows on the probe handle.

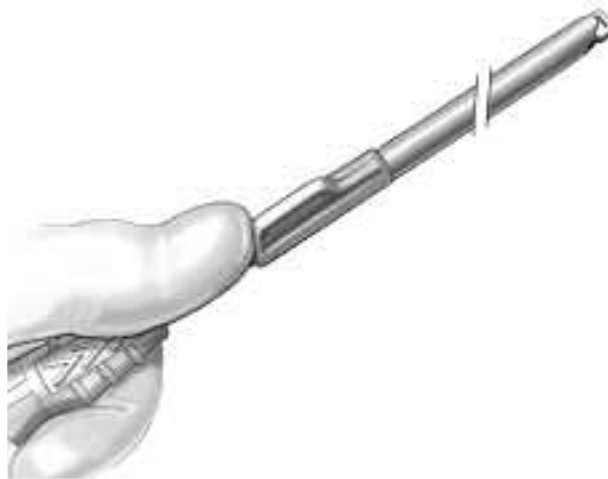


Figure 6. Manually stabilize the overshoot.



Figure 7. Probe positioned at most distal segment of chondromalacia.



Figure 8. Probe tip in contact with the target tissue.

6. Retract the sheath to expose the GLIDER probe head. Position the probe at the most distal segment of chondromalacia to be treated (Figure 7).
7. Bring the probe tip in full contact with the target tissue (Figure 8). Depress the yellow CUT pedal on the VULCAN generator footswitch to activate RF delivery.

Note: Only activate the probe when the electrode is in contact with the target tissue. Keep the probe tip moving when the electrode is in contact with the tissue and power is activated.

8. Apply gentle pressure to the probe while moving it over the cartilage surface using a paintbrush technique. One or two passes should adequately smooth the surface. To enhance maneuverability, pull the probe in a distal-to-proximal direction during treatment (Figure 9).

Note: Distal-to-proximal probe movement is relative to the probe and not the patient.

Note: The GLIDER probe will detect when an activated probe is not in contact with tissue and will reduce power delivery to prevent unnecessary saline heating.

CAUTION: *The depth of tissue effect is influenced by the power setting, amount of pressure on the tissue, and the speed with which the probe is passed over the target tissue. Visually monitor the results during treatment. Stop treatment when the desired tissue effect has been achieved.*

⚠ WARNING: Multiple passes of the probe (i.e., greater than two) across the same area should be avoided.

9. A superficial layer of high-impedence tissue may be observed following treatment at the default power setting (Figure 10). This surface effect decreases the flow of electricity and heat into the cartilage tissue and is associated with less cell death than treatment at lower power settings.⁸

10. When treatment is complete, stop RF delivery and slowly advance the sheath to recapture the probe head (Figure 10). Retract the device through the portal.

Postoperative Guidelines

The postoperative regimen may include a combination of NSAIDS, cryotherapy and compressive sleeves to control postoperative effusion and swelling and physical rehabilitation. As with any arthroscopic technique, it may take three to six months for patients to experience maximum physical improvement from the surgery.

References

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Figure 9. A distal-to-proximal movement during treatment will enhance maneuverability of the probe.



Figure 10. Oversheath deployed and being retracted from the joint.

Additional Instruction

Prior to performing this technique, consult the Instructions for Use documentation provided with individual components — including indications, contraindications, warnings, cautions, and instructions.

Courtesy of Smith & Nephew, Inc.,
Endoscopy Division

Caution: U.S. Federal law restricts this device to sale by or on the order of a physician.