What are your treatment options for this patient?
What is the Subchondroplasty® SCP® Procedure?

The Subchondroplasty® Procedure is a minimally invasive, fluoroscopic-based procedure that targets and fills subchondral bone defects, often called BML. It is usually performed with arthroscopy for visualization and treatment of findings inside the joint.

How Does the SCP Procedure Work?

AccuFill BSM is an engineered calcium phosphate compound that flows readily to fill subchondral bone defects, then crystallizes and sets in an endothermic reaction at 37°C to form a nanocrystalline, macroporous scaffold in the bone. During the healing process, AccuFill BSM is replaced with new bone.

Important Information: The use of AccuFill BSM is not intended to be intrinsic to the stability of the bony structure. Radiographic studies should be used to confirm that the adjacent cortical bone is intact.

*BML = Bone Marrow Lesion; BME = Bone Marrow Edema; BML/BME are often used interchangeably by clinicians to indicate subchondral bone defects or damage to the subchondral bone.
**AccuFill BSM Performance**

AccuFill BSM = Ca_{10-x}M_x(PO_4)_{6-x}(HPO_4,CO_3)_x(OH)_{2-x} ** = Bone^6

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<thead>
<tr>
<th>Criteria</th>
<th>Feature</th>
<th>Benefit</th>
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<tbody>
<tr>
<td>Formulation</td>
<td>• Proprietary, next-generation engineered apatite</td>
<td>• Facilitates cell-mediated remodeling</td>
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<tr>
<td></td>
<td>• Chemically similar to apatite of bone^3</td>
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<tr>
<td>Handling</td>
<td>• Truly injectable^4</td>
<td>• No need to remove subchondral bone</td>
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<td>• Remains cohesive^4</td>
<td>• No phase separation from injection pressure^4</td>
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<td>• Flowable inside cancellous bone^4</td>
<td>• Interdigitates easily for complete defect fill^4</td>
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<td>• 15 minutes of working time</td>
<td>• Extended time frame for implantation; intra-operative flexibility</td>
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<tr>
<td>Setting</td>
<td>• Endothermically sets in 10 minutes at 37°C</td>
<td>• Sets hard after closure, no thermal necrosis</td>
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<tr>
<td>Structure</td>
<td>• Osteoconductive</td>
<td>• Physical properties comparable to that of cancellous bone</td>
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<td>• Nanocrystalline structure^1,****</td>
<td>• Nanocrystalline structure and high surface area facilitate remodeling</td>
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<td>• 65% total porosity; 1 to 300 μm pore size</td>
<td>• and bony ingrowth</td>
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<tr>
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<td>• ~10 MPa compressive strength</td>
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<tr>
<td>Remodeling</td>
<td>• Cell-mediated remodeling^5,***</td>
<td>• Remodels with new bone growth^1,***</td>
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<td>• Remodeled vs. dissolved^5,***</td>
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**SCP® Instrumentation**

**AccuMix® Mixing System**
- Hydrates and mixes AccuFill® BSM
- Closed mixing system
  - Controlled, consistent mixing
  - Closed transfer to injection syringes
  - No loss of mix
- User-friendly design and technique

**AccuPort® Delivery Cannulas**
- Two components: cannula and stylus
  - Stylus locks to cannula hub
- Two delivery options: side and end
  - Trocar tip allows for easy advancement into bone
  - Insert with OR wire driver

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**Notes:**
- (M) = metal ions, e.g., Mg++, etc. Note: surface reactivity relates to metal bonds.
- Animal studies are not necessarily indicative of clinical outcomes.
- The grain size of the hydroxyapatite (HA) crystals that form as part of the amorphous and crystalline mixture of calcium phosphate sets are on the nanometer scale. The size of the crystalline structures were measured by x-ray diffraction to be less than 100 nanometers.
AccuFill BSM Indications for Use:
AccuFill Injectable Bone Substitute Material is an injectable, self-setting, macroporous, osteoconductive, calcium phosphate bone graft substitute material that is intended for use to fill bony voids or gaps of the skeletal system of the extremities, spine (i.e. posterolateral spine), and the pelvis that are not intrinsic to the stability of the bony structure. These defects may be surgically created osseous defects or osseous defects created from traumatic injury to the bone. AccuFill Injectable Bone Substitute Material is a bone graft substitute that resorbs and is replaced with new bone during the healing process.

References

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