Initial Results from 60 Patients with Bone Marrow Lesions (BML’s) That Were Treated with the Subchondroplasty® (SCP®) Procedure

All Procedures Were Performed and Reviewed by Dr. Steven B. Cohen of the Rothman Institute

BACKGROUND
- This case series was performed to assess the treatment of bone defects associated with BML’s using the SCP® procedure in patients with degenerative joint disease of the knee (all had grade III-IV chondrosis in the compartment on which the SCP® was performed at the time of surgery)

FINDINGS
- Statistically significant improvement in pain relief and function as early as 2 weeks, and continuing at 6 months, 1 year, and 2 years
- Patients had a reduced rehabilitation time period when compared to total knee arthroplasty (TKA)¹
- Longer lasting symptom relief than reported outcomes for knee arthroscopy²

PAIN REDUCTION (VAS SCORE)
- 90% of patients had clinically significant improvement in pain (>2cm reduction in VAS) at 6 months³
- Greater pain reduction than reported for debridement²

FUNCTION IMPROVEMENT (IKDC SCORE)
- 70% of patients had clinically significant improvement in function (>10 point increase in IKDC) at 6 months³
- IKDC Score Analysis: Compared with persons aged 51-65 (including individuals with and without knee problems, where the population mean IKDC Score is 74), post-op patients demonstrated an 81% improvement in standardized IKDC scores:⁴

<table>
<thead>
<tr>
<th></th>
<th>Avg IKDC Score (Out of 100)</th>
<th>Percentile (Ages 51-65)</th>
<th>*SDs Below Pop. Mean (IKDC 74)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Pre-Op Patients</td>
<td>35</td>
<td>10%</td>
<td>1.6</td>
</tr>
<tr>
<td>Post-Op Patients</td>
<td>67</td>
<td>33%</td>
<td>0.3</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>% Improvement 81%</td>
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</table>

*SDs = Standard Deviations

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• Length of benefit (pain reduction and function improvement) is longer than reported outcomes for partial meniscectomy, debridement, and lavage

• 11 patients went on to unicompartmental or total knee replacement

• Converted patients, on average:
  - Were older
  - Had longer length of symptoms
  - Had lower pre-op range of motion

PATIENT DEMOGRAPHICS

<table>
<thead>
<tr>
<th></th>
<th>Age</th>
<th>Sex</th>
<th>Side (L/R)</th>
<th>Symptom Length (Mos.)</th>
<th>Alignment</th>
<th>BMI</th>
<th>Height</th>
<th>Weight (lbs)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Min</td>
<td>35</td>
<td>—</td>
<td>—</td>
<td>3</td>
<td>8° Varus</td>
<td>22.5</td>
<td>5’0”</td>
<td>115</td>
</tr>
<tr>
<td>Avg</td>
<td>55.6</td>
<td>50% F</td>
<td>70% L</td>
<td>22.5</td>
<td>1.8° Varus</td>
<td>30.4</td>
<td>5’7”</td>
<td>198</td>
</tr>
<tr>
<td>Max</td>
<td>76</td>
<td>—</td>
<td>—</td>
<td>180</td>
<td>8° Valgus</td>
<td>41.6</td>
<td>6’2”</td>
<td>350</td>
</tr>
</tbody>
</table>

BML INCIDENCE RATE BY COMPARTMENT

- LFC: 15%
- MFC: 35%
- LTP: 7%
- MTP: 60%

AVERAGE OA GRADE BY COMPARTMENT

- Patellofemoral: 2.6
- Lateral: 2.1
- Medial: 3.3

1 Based on the clinical experience of leading SCP & TKA surgeons at the Rothman Institute in Philadelphia, PA, as communicated by their post-operative protocol guidance documents.


3 Analysis reflects data from patients who completed follow-up assessments.