In-office Diagnosis of Knee and Shoulder Conditions Using Mi-Eye 2®™ Arthroscopy

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Disclosures

The presenter has no relevant financial relationships to be discussed, directly or indirectly, referred to or illustrated with or without recognition within this presentation.
The Traditional Approach

• A patient presents with knee or shoulder pain.
• An examination is performed and x-rays reviewed.
• The decision is made on need for further imaging (MRI, CT), vs. conservative management (PT, injections, meds)
• A patient is seen back after 4-6 weeks and re-assessed. If no improvement, consideration again given to MRI.
• MRI has to be authorized through insurance → scheduled → another appointment to discuss results / plan.

A Better Way:
Mi-Eye 2™ In-office Diagnostic Needle Arthroscopy
Mi-Eye 2™

Technical Specs

**mi-eye 2™ arthroscope**
- 120° field of view
- 5–35mm depth of field
- Retractable 2.2mm needle
- Image and video capture
- Integrated optical and light source
- Ergonomic handle for one-handed/amphidextrous use

**Trice Tablet**
- HD screen
- 10.8” display
- Live video with playback
- Save and share videos and images
- 1.6GHz Inel atom processor
- Go-anywhere portability

Device Overview
### Indications - Knee

<table>
<thead>
<tr>
<th>MRI Issues</th>
<th>Claustrophobia/Anxiety</th>
<th>Stents/Implants</th>
<th>Pacemakers/Defibrillators</th>
<th>Cheaper/Quicker</th>
</tr>
</thead>
<tbody>
<tr>
<td>Anticipated Pathology</td>
<td>Meniscus Tears</td>
<td>Articular Defects</td>
<td>Loose Bodies</td>
<td>OA</td>
</tr>
<tr>
<td>Surgical Decision-making</td>
<td>Arthroscopy</td>
<td>UKA/TKA</td>
<td>2nd Look</td>
<td>Peer Review - 100% approval w/ peer review for OCD</td>
</tr>
<tr>
<td>Articular Cartilage Planning</td>
<td>ACI</td>
<td>OATS</td>
<td>Cartiform/Denovo</td>
<td>Bulk Allograft</td>
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<tr>
<td></td>
<td></td>
<td></td>
<td>Size, Depth, Surrounding</td>
<td>hyaline cartilage</td>
</tr>
</tbody>
</table>

### Indications - Shoulder

<table>
<thead>
<tr>
<th>MRI Issues</th>
<th>Claustrophobia/Anxiety</th>
<th>Stents/Implants</th>
<th>Pacemakers/Defibrillators</th>
<th>Cheaper/Quicker</th>
</tr>
</thead>
<tbody>
<tr>
<td>Anticipated Pathology</td>
<td>Loose Bodies</td>
<td>Labral Tears</td>
<td>Cuff Tears</td>
<td>Bony Defect Eval (Hill-Sachs)</td>
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<td></td>
<td>OCD</td>
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<td>Biceps Tears</td>
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<td>Anchor Failure</td>
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<td></td>
<td>(Recurrent Tears)</td>
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<td></td>
<td></td>
<td></td>
<td>Screw Penetration (ORIF)</td>
</tr>
<tr>
<td>Surgical Decision-making</td>
<td></td>
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<td></td>
</tr>
</tbody>
</table>
Future Indications

Indications - Wrist
- TFC Tears
- Articular Injury
- SLLI Injury
- Articular Reduction
- Screw Penetration (Articular)

Indications - Elbow
- Loose Bodies
- Chondral Injury
- FX Reduction

Indications - Ankle
- No code yet available for pure "diagnostic"
  scope in ankle

The Real Benefits

By choosing mi-eye™, the average patient is back to
his or her active life at least **2 weeks sooner** than
when choosing an MRI.
Set-up - Knee

- 10cc 1% lidocaine w/ epi (skin)
- 20cc 1% lidocaine w/ epi (intra-artic)
- Additional syringes (2-3) w/ 30cc saline (and basin for more fluid as needed)
- Chuck behind knee
- Foam roll or rolled towel behind knee
- Sterile ace around leg

What to Expect
Can also be done supine.

In-office Knee Arthroscopy – Mi-Eye 2™
Clinical Examples

• 42 y/o female underwent a prior knee scope with partial meniscectomy.
• Did well for two months until sustaining another twisting injury through the knee.
• Ongoing pain on the medial side of the knee, not improving.
• Mild degenerative changes on x-ray.

The Problem: MRI can be more difficult to interpret in the post-operative period.

In-office Mi-Eye 2™ Arthroscopic Knee Evaluation
Clinical Examples

• 19 year old female athlete.
• Ongoing lateral knee pain after twisting injury through the knee three months earlier.
• Unresponsive to P.T., anti-inflammatory medications.
• Claustrophobic – considered medications to help with anxiety.

The Problem: Open MRI was an option – but decreased image quality & diagnostic accuracy.

In-office Mi-Eye 2™ Arthroscopic Knee Evaluation
Clinical Examples

• 63 y/o male 3 years after rotator cuff repair, sustained pulling injury through operative shoulder.
• Pain, loss of strength and ROM.
• Concern for re-tear of rotator cuff.
• Cannot undergo another MRI, as he now has a cardiac pacemaker
• Could obtain CT with contrast, but less accurate.

Mi-Eye 2 ™ Shoulder Evaluation

Intra-Articular Joint View

2nd Look After Rotator Cuff Repair
Potential Complications

**Minor / Self-limiting Complications:** (10-13%)
- Bleeding
- Swelling
- Pain
- Vasovagal / Syncope

**Major Complications** (0-1%)
- Infection
- Cartilage Damage
- Instrument breakage (theoretical)

Benefits to the Patient

- Potential for decreased time from injury to recovery
  - By getting answers within the first office visit, the patient has the opportunity to get scheduled for surgery or conservative care faster than if they had to get additional indirect diagnostics performed

- Peace of mind
  - Patients now have the opportunity to find out exactly what is going on with them, immediately

- Potential to avoid unnecessary trip to the OR
  - mi-eye 2™ has the potential to avoid the false reads of the MRI and unnecessary exploratory surgeries

- No more expensive co-pays associated with MRIs
Patient Satisfaction

- **88.7%** of patients would prefer a mi-eye 2™ procedure over an MRI, given the benefits of getting an immediate answer
- **95%** valued a real time diagnosis, over cost
- **88.6%** of patients would prefer a mi-eye 2™ over and MRI, knowing the benefits of both options
- **86%** of patients polled would defer their diagnostic procedural decision to what the doctor recommended
- Little to no pain experienced in patients ranging from 14 to 86 years old.

Questions?

Thank You!