Hip Labral Tears Among Asymptomatic Hockey Players Identified on MRI

Four-year Follow-up Study

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Groin pain is common among high-level ice hockey players.

“A 7-year review of men’s and women’s ice hockey injuries in the NCAA”

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“Groin pain and concussion…most frequent injury to lead to at least 1 missed practice or game…”

“Pelvis and hip muscle strains (13.1%) were most common injury reported during practices”


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Elite athletes often have pathologic findings on MR imaging and remain asymptomatic.

86% supraspinatus tendinosis
79% labral abnormalities
29% Bennett lesion

41% bone marrow edema
24% patellar tendinosis
41% chondrosis/defect
In a previous study, we demonstrated that 81% of asymptomatic professional hockey players demonstrated MR imaging findings of hip/groin pathologic abnormalities.
MRI interpretation

- Secondary cleft sign
- Adductor tendon-rectus abdominis pathology
- Acetabular labral pathology
- Labral tear
- Muscle strain
- Muscle/tendon strain
MRI findings

Professional

<table>
<thead>
<tr>
<th>Condition</th>
<th>Percentage</th>
</tr>
</thead>
<tbody>
<tr>
<td>Adductor strain</td>
<td>24%</td>
</tr>
<tr>
<td>Labral tear</td>
<td>71%</td>
</tr>
<tr>
<td>Other muscle strain/tendinosis</td>
<td>33%</td>
</tr>
</tbody>
</table>
81% of asymptomatic professional hockey players demonstrated hip/groin abnormalities on MRI.

Does asymptomatic MRI-diagnosed hip/groin pathology lead to pain and/or dysfunction in short-term among professional hockey players?
Follow-up questionnaire at 1 and 2 years

**Demographic Information:**
Position(s) played:

Current Level of Play:
- Active
- Limited
- None
  
  *If Limited or None, why?*

Level of Experience:
- Collegiate
- ECHL
- AHL
- NHL

**Past Medical History:**
Previous Surgeries (*since MRI taken)*:

List any current problems with your (put “none” if you have no current issues):
- Back:
- Hip:
- Thigh:
- Knee:
- Leg:
- Foot:

**Current Abdominal or Pelvic Symptoms:**
Rate your current Abdominal or Pelvic pain:

<table>
<thead>
<tr>
<th>Rate</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>0</td>
<td>No Pain</td>
</tr>
<tr>
<td>5</td>
<td>Moderate</td>
</tr>
<tr>
<td>10</td>
<td>Unbearable</td>
</tr>
</tbody>
</table>

- □ Not Applicable (no pain or recent symptoms)
  
  *If checked, no need to fill out rest of form*

Describe Abdominal or Pelvic pain:
- Sharp
- Dull
- Stabbing
- Burning
- Aching
- Throbbing

Does the pain radiate? Where?
Is it exacerbated by activity?
Is it relieved by rest?
Is it constant or intermittent?

Any treatments?
- NSAIDs
- Modified Activity
- Physical Therapy
- Ice
Follow-up games played at 4 years

Using professional hockey database, each player’s games played were tracked for 4 years

- Deviation in games played > 5 games per year (compared to year study initiated) prompted further investigation on cause

- Level of play at the fourth year was recorded
Follow-up

16/21 (76%) and 14/21 (67%) professional hockey players were available at one- and two-year follow-up, respectively.

19/21 (90%) players remained active within four years:
- 14 (67%) remained at same level
- 4 (19%) advanced to higher level of play
- 1 (5%) demoted to a lower level
Results

- Only 3 players developed groin pain and/or missed any games due to hip pathology

<table>
<thead>
<tr>
<th>PLAYER 1</th>
<th>PLAYER 2</th>
<th>PLAYER 3</th>
</tr>
</thead>
<tbody>
<tr>
<td>Labral tear</td>
<td>Labral tear, adductor tendinosis</td>
<td>Bilateral labral tears</td>
</tr>
<tr>
<td>• Admitted groin pain in year 1</td>
<td>• Admitted groin pain in year 1</td>
<td>• Admitted to “hip tightness” for one week during year two</td>
</tr>
<tr>
<td>• No missed games</td>
<td>• Missed several games due to proximal IT band symptoms in year 3</td>
<td>• No missed games</td>
</tr>
</tbody>
</table>
Results

- 9 players with labral tears available for questioning at 2 yrs
  - 7 had no hip or groin symptoms
  - Only one of 3 “symptomatic” players missed any games or sought treatment.

15 players
Asymptomatic labral tears

- 2 advanced
- 10 same level
- 1 demoted
- 2 retired
None developed symptoms within two years

None missed any games due to hip pathology
While common, pathology on hip MRI of asymptomatic professional hockey players rarely poses functional limitations in short-term:

- No player “retired” due to groin pain
- Only one other player missed any games and that was due to proximal IT band symptoms
- No players required surgery
Limitations

- No validated hip score or measurement of $\alpha$-angle
  - Lack of follow-up imaging
  - Lack of longer follow-up
Despite high incidence, hip pathology seen on MRI of asymptomatic professional hockey players often not functionally limiting in short-term.

Does this hip pathology lead to long-term dysfunction?


