Atypical Posterior Pain Presentation of Femoroacetabular Impingement: An Age, Gender and BMI Matched Cohort Analysis

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Disclosures

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Introduction and Purpose

- Patients with femoroacetabular impingement (FAI) most commonly present with anterior groin pain

- A minority of patients present primarily with posterior pain, but otherwise have clinical and radiographic evidence of FAI.

**Purpose:** The objective of this study was to compare outcomes of hip arthroscopy for FAI in patients with atypical posterior pain to a matched control group with the typical anterior pain presentation
Patient Selection

• Consecutive patients undergoing primary hip arthroscopy for FAI that had failed conservative management were identified using our institutional hip registry between 1/2012 and 1/2014.

• Typical pain group
  • Anterior groin pain or c-sign.

• Atypical pain group
  • Posterior hip or buttock pain.

• Atypical patients matched 1:2 to typical patients based on gender, age, and BMI

• Patients with thigh, knee, lateral, and low back pain were excluded.
Data Collection

- **Patient demographics:** sex, age, BMI, range of motion, and sports participation.
- **Radiographic measurements:** lateral center edge angle (LCEA), alpha angle, and Tonnis grade.
- **Intraoperative data:** procedures performed and findings
- **Preoperative and minimum 2-year postoperative hip-specific functional outcome scores**
  - Modified Harris Hip Score (MHHS).
  - Hip Outcome Score Sport-Specific and Activities of Daily Living subscales (HOS-SS and HOS-ADL).
- **Complications and reoperations**
Data Analysis

- Student’s t-tests used to compare typical to atypical groups and pre- to post-operative values.
- Fischer’s exact test, one-way ANOVA, and bivariate regression were used as needed to compare data.
- Alpha value of 0.05 statistically significant.
Typical and Atypical Patients

- 503 hip arthroscopies for FAI during the study period
  - 31 with atypial posterior pain (6.2%).
  - 373 with typical pain (74.2%).
  - 99 excluded with other pain locations (19.6%).

- 28/31 (90.3%) atypical pain patients available at minimum 2-year follow-up
  - Matched to 56 typical patients.
  - No preoperative differences between typical and atypical groups (p>0.05).
Patient Reported Outcomes

- At 2.6+/-0.6 years follow-up, there were no differences in outcomes between atypical and typical groups
  - Both groups improved significantly for all outcomes (p<0.0001) compared to preoperative values.

<table>
<thead>
<tr>
<th>Preop Score</th>
<th>Atypical</th>
<th>Typical</th>
<th>P-value</th>
</tr>
</thead>
<tbody>
<tr>
<td>HOS-ADL</td>
<td>68.5+/-17.0</td>
<td>69.2+/-17.1</td>
<td>0.88</td>
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<tr>
<td>HOS-SS</td>
<td>42.0+/-25.5</td>
<td>44.4+/-24.9</td>
<td>0.71</td>
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<tr>
<td>mHHS</td>
<td>60.1+/-12.4</td>
<td>60.0+/-12.3</td>
<td>0.96</td>
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<table>
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<th>Postop Score</th>
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<th>Typical</th>
<th>P-value</th>
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</thead>
<tbody>
<tr>
<td>HOS-ADL</td>
<td>88.6+/-11.0</td>
<td>86.8+/-14.7</td>
<td>0.57</td>
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<tr>
<td>HOS-SS</td>
<td>71.0+/-26.2</td>
<td>71.3+/-27.3</td>
<td>0.97</td>
</tr>
<tr>
<td>mHHS</td>
<td>78.8+/-12.9</td>
<td>76.9+/-13.6</td>
<td>0.57</td>
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</table>
Revision and THA Conversion

- Revision and THA conversion

<table>
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<th>Atypical</th>
<th>Typical</th>
<th>P-value</th>
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</thead>
<tbody>
<tr>
<td>Revision arthroscopy</td>
<td>1 (3.6%)</td>
<td>0 (0%)</td>
<td>0.33</td>
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<tr>
<td>THA conversion</td>
<td>0 (0%)</td>
<td>1 (1.8%)</td>
<td>0.48</td>
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</tbody>
</table>

- No significant difference in revision/THA conversion/
Patients Achieving PASS and MCID

<table>
<thead>
<tr>
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<th>Atypical</th>
<th>Typical</th>
<th>P-value</th>
</tr>
</thead>
<tbody>
<tr>
<td>PASS HOS-ADL</td>
<td>64%</td>
<td>66%</td>
<td>0.99</td>
</tr>
<tr>
<td>PASS HOS-SS</td>
<td>52%</td>
<td>52%</td>
<td>0.99</td>
</tr>
<tr>
<td>PASS mHHS</td>
<td>64%</td>
<td>62%</td>
<td>0.99</td>
</tr>
<tr>
<td>MCID HOS-ADL</td>
<td>74%</td>
<td>67%</td>
<td>0.58</td>
</tr>
<tr>
<td>MCID HOS-SS</td>
<td>72%</td>
<td>72%</td>
<td>0.99</td>
</tr>
<tr>
<td>MCID mHHS</td>
<td>79%</td>
<td>77%</td>
<td>0.86</td>
</tr>
</tbody>
</table>

- No difference between atypical and typical patients.
Discussion and Limitations

• Despite analyzing our large registry, atypical posterior pain presentation of FAI was uncommon.
  • Only 6.2% of patients with this as primary complaint.

• Small sample size introduces possibility of type 2 error
  • Regardless, we report a relatively large series of patients with atypical posterior pain and that results are comparable to patients with typical pain complaints.

• Patients with more unusual locations of pain including knee and lateral were excluded.

• Pain is subjective and experienced differently by different patients, making comparisons challenging.
Conclusions

• Atypical posterior hip pain is an uncommon presentation of FAI.

• Patients with atypical pain demonstrate similar significant improvements in outcome scores compared to controls with typical anterior groin pain or c-sign.

• Patients with atypical pain also had similar rates of clinically significant differences based on MCID and PASS rates.