Achillessehnenverletzungen – 21. Symposium in der Manege Zürich 2014

Operative Behandlungsmöglichkeiten

Complex Anatomy and function

Treatment of groin injuries in athletes

Systematic review (72 Studies) of groin pain in athletes

25% conservative treatment and 75% on surgical treatment

33 different diagnostic terms were used, often with different interpretations for the same term between studies.
Treatment of groin injuries in athletes

A significant association was found with methodologically weaker studies reporting higher treatment success percentages.

Nonsurgical:
- Seven athletes in the nonsurgical group failed
- 50% returned to sport at 1-year follow-up.

Surgical group:
- 29 of 30 athletes returned to full sports and were pain free at 1-year
- Pain and satisfaction scores were better in the surgical group at all points up to 1 year out from surgery.

Athletic groin pain: a systematic review of surgical treatment

73 articles with data from 4655 patients

- Athletic groin pain requiring surgery remains a diagnostic and therapeutic challenge
- Intra-articular and extra-articular causes of groin pain in athletes requiring surgery were equal
- The top five causes for pain requiring surgery.

Athletic level associations with top five surgical causes of athlete groin pain.

<table>
<thead>
<tr>
<th>Cause</th>
<th>Percentage</th>
</tr>
</thead>
<tbody>
<tr>
<td>Overuse</td>
<td>32%</td>
</tr>
<tr>
<td>Hip-related</td>
<td>24%</td>
</tr>
<tr>
<td>Inappropriate</td>
<td>14%</td>
</tr>
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<td>Mixed</td>
<td>10%</td>
</tr>
<tr>
<td>Other</td>
<td>5%</td>
</tr>
</tbody>
</table>

(over 85% of athletic groin pain requiring surgery in the included evidence)

Conservative vs operative Treatment in athletic pubalgia (AP)

A prospective, randomized study (n=30) with symptoms > 6 months.

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Athletic level associations with top five surgical causes of athlete groin pain.

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Hip arthroscopy for FAI was performed in 97% (1466/1510) of patients, and was also utilized exclusively for any labral pathology.

Athletic pubalgia was treated with open surgical procedures 70% of the time (786/1122), with 61% (482/786) of those procedures using mesh reinforcement.

The majority (70% or 403/570) of adductor-related pathology was surgically treated with complete adductor tenotomy, and less than 1% of patients were treated with adductor reattachment procedures.

Overall, 36% (169/473) of all inguinal pathology was treated with open hernia repair and 39% (183/473) with laparoscopic hernia repair.

Femoro-acetabular Impingement (FAI) = Painful Impingement of the Femur head / Acetabulum
**FADIR TEST**

Flexion / Adduction / Internal Rotation
- Sensitivity ~ 75% intraart. Problems
- Specificity 43% for Labrumlesions

**Goal:** «typical» Pain

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**FABER TEST**

Flexion / Abduction / External Rotation
- Sensitivity ~ 88% intraart. Problems

Martin et al
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Open Hip Dislocation and labral reconstruction

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SWISS SPORTMED CENTER

Bild Nötzli

Hip Impingement – Arthroscopy Setting

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SWISS SPORTMED CENTER

Bild C. Forster

Hip Impingement – Arthroscopy

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.2 Wall PD Brown et al, Cochrane Database Syst Rev 2014;

A new systematic review identified (977 athletes)
- 738 (76%) undergoing arthroscopy
- 180 (18%) open surgery
- 59 (6%) using a mini-direct anterior approach

87% of the athletes RTS with 82% attaining the preinjury level

All studies Level of Evidence IV, the outcomes should be interpreted with caution not always maintained with longer term follow-up


Arthroscopic vs open (surgical dislocation) FAI Surgery

A systematic review and meta-analysis

Hip arthroscopy
- higher nonarthrotic Hip score (NAHS) than open
  (All other clinical Scores no difference)
- lower reoperation rates than open
- less improvement in alpha angle in patients with cam osteoplasty, than open surgical dislocation.
Femoroacetabular Impingement FAI

If you have a new hammer - everything looks like a nail!

Case

Case Groin Pain - Badminton • 23 J

Anamnese:
- Top 50 Badminton Worldranking
- Rez ISG Blockaden
- Adduktorenzerrungen
- LWS Myogelosen
- Knie: ITFS
- Hüftschmerzen
- Überlastung OSG bds
  - St.n OSG Sup. Trauma re
  - Peronealsehnentendinitis li

Case, • 23 J

- Klinik:
  - OSG Instabilität re, OSG Laxität li
  - ISG Hypermobilität
  - Adduktorenmyogelose
  - LWS: paravert. Hantspann
  - Pos. Impingement Test Hüfte bds

Case, • 23 J

Case, • 23 J
Inguinal related - Pathology

- Imbalance between the hip adductors and the abdominal muscles and/or other shear force acting across the hemipelvis
  - resulting in relative muscular overload with “tearing” of the transversalis fascia and/or overlying musculature
  - Disrupted rectus abdominis tendon attachment to the pubis and weakened posterior inguinal wall.

- Weakness of the posterior Wall (inguinal tunnel)
- Dilation of transversalis fascia
- In sports due to abdominal muscle activity (pressure↑), transversalis fascia is pushing forward
- Compression of ramus genitae N. genitofemoralis

- Burning pain to the pubic bone, adductor region and scrotum, sometimes even to the back
- Rectus abdominis retracted cranial and medial
- More tension of the rectus abd. on the os pubis
- «Pubalgia»

LAPAROSCOPIC REPAIR
Treatment of groin injuries in athletes

There is moderate evidence that, for athletes with inguinal-related groin pain, laparoscopic hernia repair results in lower pain and a higher percentage returning to play than conservative treatment.

Systematic review (72 Studies) of groin pain in athletes

Systematic review: laparoscopic treatment of long-standing groin pain in athletes

Conclusions

- Laparoscopic surgery for elite athlete groin pain is increasingly becoming more common with almost 1000 patients reported since 1997.
- Laparoscopic or endoscopic surgery is minimally invasive for athletes, allowing quick return to sporting activity (success rate > 90%).
- The median return to sporting activity of 4 weeks (28 days)

There are only a few randomised controlled trials (RCTs), with no single surgical technique demonstrating superiority in a comparative analysis.

Complication rate approx. 2.8%

LAPAROSCOPIC REPAIR

More rapid recovery and return to sport than open

- A laparoscopic mesh repair for posterior wall deficiencies in 35 professional soccer players resulted in 87% returning to play after 4.

- A laparoscopic repair in 131 professional athletes with a mean follow-up of 5 years had 89% returning full sporting activity by 3 to 5 weeks.

- 54 athletes treated by laparoscopic extraperitoneal inguinal hernia repair with synthetic mesh combined with ipsilateral adductor longus tenotomy returned to full sports-related activity in 24 days.

Open repair of a posterior wall deficiency.

Minimal Repair technique of sportsmen’s groin: an innovative open-suture repair to treat chronic inguinal pain

Ulrike Muschaweck, Luise Berger

Open repair of a posterior wall deficiency.
Open repair of a posterior wall deficiency

- “Pelvic floor repair” with or without adductor longus release with reattaching the inferolateral edge of the rectus abdominis muscle to the pubic bone.
- open Bassini hernial repair
- A “minimal repair” technique, repair of the posterior inguinal wall deficiency and a decompression of the genital branch of the genitofemoral nerve

Return-to-sport rate with open repair was 84 - 97% within 4 to 12 W.
Complication rate approx. 0.7 % (4 x less than laparoscopic)


Groin Injuries (Athletic Pubalgia) and Return to Play

There is moderate evidence for adductor-related groin pain:
Partial release of the adductor longus tendon is effective for return to sport over time.

Systematic review (72 Studies) of groin pain in athletes

Apophysis lesions

- LWS Querfortsatz
- Spina ilica ant. sup.
- Spina ilica ant.inf.
- Trochanter minor
- Tuberositas ischi

Spina ilica anterior inferior (Sprinters fracture)
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Entrapment syndrome

M. Sartorius
M. adductor longus
M. Iliopsoas
M. Pectineus
R. Genitalis
N. Genitofemoralis
N. femoralis
R. cutaneus femoris lateralis

Entrapment Nervus Obturator

N. Obturatorius
M. adductor longus
M. adductor brevis
N. Obturatorius
R. anterior
R. posterior

Case 1

E.A., 51 jährig, Hobby-Tennisspieler

Anamnese
- Unfall: Ausrutschen mit forcierter Spritzewendung

Case Groin Pain - Tennis Kasuistik Segesser
E.A., 51 jährig, Tennis-Hobby

**Anamnese**
- Unfall: Ausrutschen mit forciertem Spreizschritt seitwärts

**Symptome:**
- Leistenschmerz links
- verspannte Adduktoren
- Schmerzen beim Niessen
- Sitzen und Sport nicht mehr möglich

**Diagnose**
- Adduktorenreizung

**Therapie**
- Physiotherapie

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**Take home message**

**Summary – Operative Therapy in groin pain**

- FAI is a risk for Osteoarthrosis
- Surgery must be discussed early
- 87% athletes Return to sports, 82% “preinjury level”
- Arthroscopy less re-operations than open
Summary II – Operative Therapy in groin pain

Inguinal related
- «Surgery is better than conservative»
- Open or laparoscopic
- Reconstruction of the posterior wall (with or without mesh)
- RTS > 90% in about 4 weeks

Zusammenfassung III

Adductor related
- Adductor longus release is an option in long lasting adductor problems
- Combination with other surgical techniques

GROIN PAIN IN SPORTS

Diagnosis
Almost 90% of the physical examination techniques performed to diagnose surgical groin pain in the athlete comprised two manoeuvres: gross palpation of the groin (76%) and the flexion, adduction, internal rotation test (ie, FADIR or anterior impingement test) (12%). The flexion, abduction, external rotation manoeuvre (FABER) accounted for 6% of the physical examination techniques performed. The two most common imaging modalities used to diagnose groin pain in the athlete were: (1) MRI at 40% (1870/4655), with 8% (145/1870) specifically using an arthrogram; and (2) plain radiograph at 33% (1545/4655), with 51% (795/1545) of studies not reporting the specific views used (table 3).
Of these top five aetiologies, the majority were reported in young patients in their mid-20s (table 1). Athletic pubalgia, adductor-related pathology and inguinal pathology were almost exclusively reported in male patients, with rates of 98.0%, 99.2% and 96.6%, respectively. Though seldom reported, where available, there did not seem to be any effect of the athletic level (ie, professional, competitive, recreational, etc) on type or severity of the cause of athlete groin pain (figure 2). Though not always reported across all studies, hockey and soccer were the most prevalent cause of groin pain due to FAI (67 athletes each) and labral pathology (31 athletes). Soccer was the most prevalent cause of athletic pubalgia (368 athletes), adductor-related pathology (298 athletes) and inguinal pathology (52 athletes) (table 2).

Introduction

- Diagnosis and Management of groin pain among athletes is challenging
- Complex anatomy of the hip/groin region
- Occasionally overlapping extra-articular and intra-articular possible differential diagnoses.
- Whether acute or chronic in nature
- Pain can be multifactorial (approximately 27% of cases)
- Presents along a spectrum from mild symptomatology causing training absences to career-altering disability.

Prevalence

Prevalence of hip/groin injuries among athletes

- 5–9% in high school athletes
- 3–11% in those competing at an Olympic level
- 10–18% attributable to those participating in elite soccer

The incidence of hip/groin injuries among elite soccer players is 1.1 groin injuries/1000 h of athletic activity.

> 50% of groin pain in athletes originated from the adductors, iliopsoas or abdominal musculature.