Surgical treatment of groin pain in athletes

(One of) The French approach

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Interest of a meeting about groin pain

• **Common** injurie in sports medicine
  - 5% professional sports players
    (Anderson and al. Am J Sport Med 2001)
  - 10 à 18% / year soccer players
    (Morelli and all. Prim Care Clin Off Pract 2005)

• **Poor** medical literature
  - 104 papers Medline literature between 1950 and 2008 (Caudill and al. British J Sport Med 2008)
  - 11225 for «Anterior Cruciate Ligament»!
Groin pain
What are we speaking about?

Sports hernia

Osteitis pubis

Adductor enthesopathy

Hip joint pathologies - femoro-acetabular imp.
- capsulo-labral inj.
- chondral defect
- necrosis
- slipped epiphysis
- stress fracture

Avulsion injuries

Bursitis (great trochanter, iliopsoas tendon …)

Lombosacral (SPL L5/S1, D12/L1 S, …)

Neuropathy (pudental S., obturator n. entrapment, …)

Infection (prostate, urinary …)

Tumors
Groin pain
What are we speaking about?

message

Groin pain
- Clinic
- Imaging
- Biology

Precise diagnosis
Groin pain
What are we speaking about?

In France

**Sports hernia**

**Osteitis pubis**

**Adductor enthesopathy**

**Hip joint pathologies**
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**Avulsion injuries**

**Bursitis** (great trochanter, iliopsoas tendon …)

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**Infection** (prostate, urinary …)

**Tumors**
Groin pain and surgery

Sports hernia +++
Osteitis pubis 0
Adductor enthesopathy +
Sports hernia – *What is it?*

- No true hernia
- Many anatomical descriptions
  - tearing transversalis fascia or conjoined tendon
  - abnormalities insertion rectus abdominis muscle
  - avulsion internal part oblique muscle fibers at pubic tubercle
  - abnormality in external oblique muscle and aponeurosis

**Posterior inguinal wall weakness (bulge)**
Sports hernia

Posterior inguinal wall weakness (bulge)
Sports hernia - *When does it occur?*

**Chronic (overuse)**

**Acute injury**
Sports hernia - Origin of pain?

• Muscular imbalance

• Nerves Compression (caused by posterior wall weakness)

Sports hernia and surgery

• When?
• Techniques?
• Uni or bilateral?
• Post-operative?
• Results?
When?

- Theoretical problem → most patients come to surgeon months (years) after symptoms began (> 6 months M Genitsaris and all – Am J Sport Med 2004)

- After **6 to 8 weeks failed functional treatment**

  Sports hernia rarely improve with conservativ treatment

  don’t lose time …
Surgical techniques

Goals of sports hernia surgery respond to *pain patho-anatomy*

- muscular imbalance
- posterior wall weakness
Surgical techniques

- Principles of surgical management

  - **defect closing** (bulg) → **mesh**
  - Open technique (Lichtenstein ..)
  - Laparoscopic (preperitoneal or extraperitoneal procedure)

- Muscular retaining (hernio/myorrhaphy)
  - Nesovic, Shouldice, Bassini
Surgical techniques

• Principles of surgical management
  - defect closing (bulg) \rightarrow mesh
  - Open technique (Lichtenstein ..)
  - Laparoscopic (preperitoneal or procedure
  - muscular retaining (hernio/myorraphy)

• Nesovic, Shouldice, Bassini
Closing defect techniques

• **Avantages**
  - Reduce pression due to posterior wall weakness
  - Tension free technique
  - Short convalescent period

• **Disavantages**
  - No muscular tension
  - Recidive ?
  - Laparoscopic
    * Learning curve
    * No direct vision injured tissues
Hernio/myorrhaphy

• **Avantages**
  - Restore muscular balance
  - Posterior inguinal wall closing
  - Direct vision injured tissues / nerves
  - Mesh reinforced possible

• **Inconvenients**
  - Suture mobile muscles and non contractile structures (aponeurotic) under tension
  - Longer sport return
Nesovic *modified* technique

- Inguinal skin incision
- Open external oblique aponeurosis (repair tears if present)
- Dissection spermatic cordon
- Neurolysis or neurotomy
- +/- *plication fascia transversalis*
- Reapproximation of the conjoined tendon to inguinal ligament (*controlled tension*)
- External oblique aponeurosis plication
Nesovic modified technique
Nesovic modified technique
Nesovic modified technique
Nesovic modified technique

Tendon conjoint

Repair posterior wall weaknees

Cordon spermatique

Fascia transversalis

Muscular balance

Arcade crurale
Nesovic modified technique
Nesovic modified technique
Uni or bilateral surgery?

- **Acute injury**
  \[\Leftrightarrow\] traumatic weakness on an normal inguinal wall
  \[\Rightarrow\] *unilateral surgery (+)*

- **Chronic** (overuse)
  \[\Leftrightarrow\] excess strenght on an constitutionnal weak wall
  \[\Rightarrow\] *bilateral surgery (+++)*
  
  *(balanced reinforcement and better cooperation muscle groups of both side)*
Post-surgical rehabilitation

- J0 → J15 rest (walking ++)
- J15 → J30 bike, local physiotherapy
- J30 → J45 run, progressiv abdominal work, flexibility
- > J45 sprinting, running all directions, gradual return to training
Results

- 80 to 95% good and excellent results

- Recurrence rate 4 à 10%
  (Neumayer 2004 - more with laparoscopic ?)

- Return sports activities 4 to 12 weeks
  - than open (Ahumada 2005, Kumar 2002)

- Jaeger et coll. (JTS 2009) 80 soccer players - Nesovic (not modified) 90% good results

- My experience 105 Nesovic modified since 2006 – results ?
Adductor pain

Very common in soccer ++++
Surgery indications

• Isolated enthesopathy
  ➢ after failed conservative treatment

• Association with sports hernia
  ➢ persistent pain after sports hernia surgery
  ➢ immediately during hernia repair
    (adductor participating to muscle imbalance)
Surgical technique

- Adductor tenotomy (adductor longus)

! Reduce adductor strength

Exceptional in my experience
CONCLUSION

• No good treatment without good diagnosis
  ➢ Groin pain $\rightarrow$ think sports hernia

• Don’t loose time
  ➢ 6 to 8 weeks failed conservative treatment $\rightarrow$ think surgery

• Which technique?
  ➢ Literature $\rightarrow$ same results (variation sports return, recurrence)
  ➢ 2 philosophies / pain origin
    • Posterior inguinal wall weakness $\rightarrow$ mesh
    • Muscular imbalance $\rightarrow$ myorraphy
CONCLUSION

The question in Sports hernia surgery is not the point of view between a German or a French surgeon but between the orthopaedic or digestive surgeon …

Orthopaedic muscles and tendons

Digestive fascias and peritoneum
CONCLUSION

... last message « do what you’re able to do! »

Nurse, get on the internet, go to SURGERY.COM, scroll down and click on the 'Are you totally lost?' icon.