

OMED[®] 15

THE DO EXPERIENCE



Joint Session ACOFP and AOASM: Sports Hernia

R. Robert Franks, DO, FAOASM

ACOFP/AOA's 120th Annual Osteopathic
Medical Conference & Exposition

Orange County Convention Center | 29.5 Category 1-A CME credits anticipated

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Please check where applicable and sign below. Provide additional pages as necessary.

Name of CME Activity: 2015 AOA/ACOFP Osteopathic Medical Conference & Exposition (OMED)

Dates and Location of CME Activity: October 17 - October 21, 2015 Orange County Convention Center Orlando, Florida

Topic: Joint Session ACOFP and AOASM: Sports Hernia Sunday, October 18, 2015 9:00-9:30am

Name of Speaker/Moderator: R. Robert Franks, DO, FAOASM

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- A. Neither I nor any member of my immediate family has a financial relationship or interest with any proprietary entity producing health care goods or services.
- B. I have, or an immediate family member has, a financial relationship or interest with a proprietary entity producing health care goods or services. Please check the relationship(s) that applies.
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| <input type="checkbox"/> Speakers' Bureaus* | <input type="checkbox"/> Employment |
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Please indicate the name(s) of the organization(s) with which you have a financial relationship or interest, and the specific clinical area(s) that correspond to the relationship(s). If more than four relationships, please list on separate piece of paper:

Organization With Which Relationship Exists	Clinical Area Involved
1.	1.
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*If you checked "Speakers' Bureaus" in item B, please continue:

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|---|-------------|------------|
| • Did you participate in company-provided speaker training related to your proposed topic? | <u>Yes:</u> | <u>No:</u> |
| • Did you travel to participate in this training? | <u>Yes:</u> | <u>No:</u> |
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Signature:  Date: 9/9/15
R. Robert Franks, DO, FAOASM

Please fax this form to ACOFP at 866-328-1835, or e-mail to joank@acofp.org as soon as possible.
 Deadline: Wednesday, September 23, 2015

Core Muscle Injuries

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Please DO NOT Call Them Sports
Hernias

Introduction

- Philadelphia athletes with core muscle injuries
 - Eagles' Donovan McNabb
 - Eagles' Zach Ertz
 - Eagles' Kevin Curtis
 - Flyers' Danny Briere

Introduction

- Incident of groin pain is 5 to 7% of all sports injuries
- Most common in soccer, ice and field hockey, tennis and Australian Rules Football
- Some studies have attributed increased diagnosis to more aggressive athletic play but other studies have cited greater awareness of core muscle injuries by Certified Athletic Trainers and Sports Medicine Physicians

Introduction

- One of least understood, inadequately defined and poorly researched affections of all sports medicine injuries
- Core muscle injuries are actually several different conditions lumped together under one common medical terminology
- Can be acute, chronic, or acute on chronic variety
- Found more commonly in male than female athletes

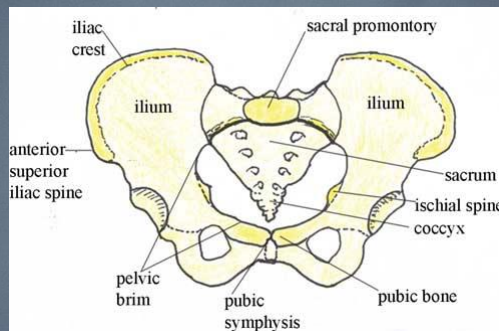
Differential Diagnosis

- Adductor strain
- Osteitis Pubis
- Iliopsoas Strains/Bursitis
- Stress Fractures
- Avulsion Fractures
- Hip Pathology – Labral Tear, FAI, Snapping Hip
- Nerve Compression

Anatomy

- Bony Pelvis
 - Ilium
 - Ischium
 - Pubis
 - Sacrum/Coccyx

Anatomy



Anatomy

- Soft Tissue
 - Fibrous attachment of pubic symphysis
 - Fibrocartilage articular disc between pubic bones with attached ligaments
 - Most important is the arcuate ligament at the anterior, inferior margin of the joint attaching to the symphysis capsule, both pubic tubercles and providing a superficial attachment for regional tendon/muscle complex

Anatomy

- Soft Tissue
 - Right and Left Rectus Abdominis/Adductor Aponeuroses
 - Meet at midline pubic symphysis containing vertical raphe forming a dense midline pubic plate

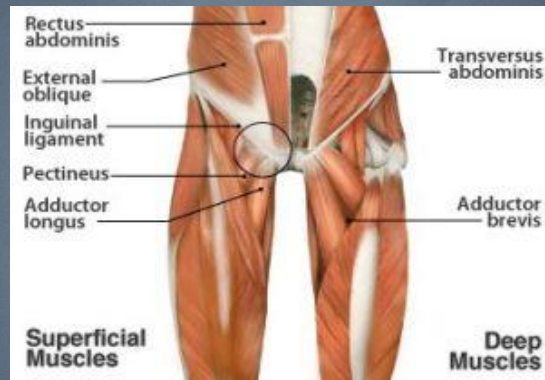
Anatomy

- Soft Tissue
 - Adductor Muscles
 - Pectineus – Anterior
 - Adductor Brevis, Gracilis, and Adductor Magnus - Posterior

Anatomy

- Soft Tissue
 - Inguinal Ring
 - Lateral to aponeuroses
 - External Oblique blending with lateral margin of Rectus Abdominus forming External Oblique Aponeuroses – superficial to inguinal canal and cephalad and lateral to ring

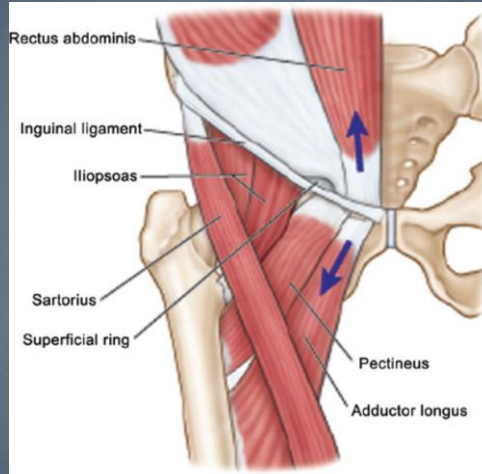
Anatomy



Anatomical Balance

- Rectus Abdominis creates posterior tension
- Adductors create inferoanterior tension with core rotation and extension
- This opposition along with aponeurosis needed for anterior pelvic stability
- Disruption of this balance leads to core muscle instability and core muscle injury

Anatomy



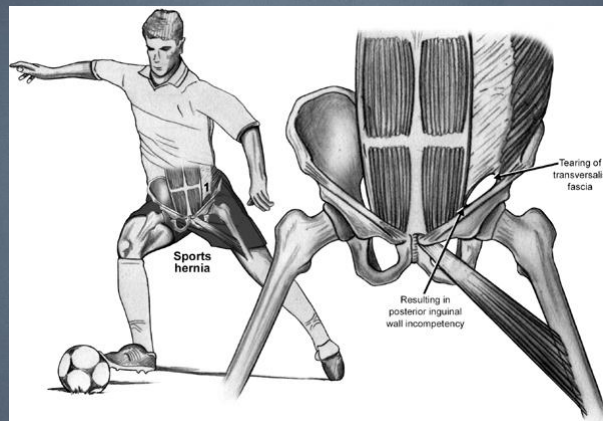
Pathogenesis

- Groin injuries usually occur from the following:
 - Overuse
 - Increased shearing across the hemipelvis
 - Lumbopelvic and lower extremity muscle strength endurance, extensibility, and coordination imbalance
 - Loss of dynamic abdominal wall rotational stability
 - Loss of congenital inguinal wall weakness
 - Overall core weakness

Most Common Causes

- Hip adductor strain/tear with palpable pain at pubic bone attachment and resisted hip adduction
- Iliopsoas strain/tear with palpable pain of muscle at lower lateral abdomen or just distal to inguinal ligament. Pain often with crunch or resisted crunch. Can be co-morbid Thomas Test pain
- Rectus abdominis strain/tear with palpable pain at distal tendon or on attachment at pubic bone and pain with resisted sit up

Most Common Causes



Physical Examination Findings

- NO detectable inguinal hernia
- Inguinal canal tenderness
- Dilated superficial inguinal ring
- Pubic tubercle tenderness
- Hip adductor origin tenderness

Physical Examination Findings

- Key physical finding may be pubic tubercle tenderness and inguinal floor tear that can possibly be palpated creating pain inside the external inguinal ring
 - Pain may radiate to testicle or laterally to upper thigh
 - Aggravated by sudden movement, Valsalva, sexual activity, resisted sit up, or hip adduction

Imaging

- Traditional X-ray views include:
 - AP Pelvis
 - AP and lateral of affected hip
- X-rays can yield changes associated with:
 - FAI
 - OA
 - Ostitis Pubis
 - Avulsion Fracture

Imaging

- Traditional ultrasound is useful modality to diagnose INGUINAL HERNIA
- CT is often used to diagnose INGUINAL HERNIA
- MSK Ultrasound identifies tendonopathies and tendon/muscle tears but incomplete in looking at inflammatory and degenerative bony processes

Imaging

- MRI of Athletic Pubalgia series
 - 1.5 Tesla unit with phased array, multichannel coil gives best imaging

MRI of Athletic Pubalgia Series

- Sequences include the following:
 - Entire bony pelvis including high resolution sequences over the pubic symphysis
 - Standard coronal, sagittal and axial planes, but also coronal oblique imaging plane from anterior margin of the iliac crest forming a sagittal localizer sequence (along the arcuate line of the pelvis) needed to see the rectus abdominus/adductor longus aponeurosis and its attachment at pubic tubercle

MRI of Athletic Pubalgia Series

- Sequences include the following:
 - Large field of view sequence from umbilicus to mid thigh
 - Smaller field of view sequences focused on pubic symphysis extending through the pubic rami bilaterally

MRI of Athletic Pubalgia Series



Treatment

- Conservative:
 - Rest
 - Ice
 - NSAIDs
 - Discontinuation of offending activity

Treatment

- Conservative:
 - Physical Therapy
 - Modalities that may assist in recovery include
 - E-stim
 - Deep tissue massage
 - Active Release Therapy
 - Graston Technique
 - Iontophoresis

Treatment

- Conservative:
 - Physical Therapy
 - Focused progressive hip adductor stretching and strengthening exercises as well as extensive core muscle strengthening
 - Exercise to improve strength, endurance, coordination and appropriate hip and abdominal muscle balance as well as core stability
 - Abduction, adduction, flexion and extension exercises
 - Sit-ups
 - Wobble board
 - Sliding board
 - Fitter exercises

Treatment

- Conservative:
 - OMT
 - Focused treatment on hip/pelvis and often sacrum/SI joint
 - Physical Therapy
 - Return to sports is generally after 8-12 weeks of treatment with athlete pain free in PT and with exertion therapy
 - Athlete must be able to successfully pass sport-specific activity – cutting and smooth directional change are critical

Treatment

- Conservative:
 - Corticosteroid Injection
 - Usually done at insertion of rectus abdominis or adductor longus tendons usually at pubic tubercle
 - Prolotherapy Injection
 - Sclerosing agent injected at one of the following sites:
 - Adductor attachments
 - Conjoined tendon at pelvic rim
 - Pubic symphysis

Treatment

- Surgical
 - Exploration and repair considered when rest and non surgical treatment has been attempted
UNLESS
 - True pathology elicited on MRI and conservative treatment would not be conducive to a high level athlete – i.e. compete disruption of pubic plate in ice hockey player

Treatment

- Surgical
 - Open or laparoscopic approaches can provide good results
 - Most repairs address repair of abdominal muscles, adductor muscles, or both, or fascia near the inguinal ligament.
 - Repairs that do not address forces causing pathology are often unsuccessful
 - Whether open or laparoscopic, repair rates vary from 63 to 95%

Treatment

- Surgical
 - Laparoscopic repair usually associated with quicker return to sports
 - Training at 4 weeks
 - Full activity at 6 weeks

Treatment

- Post-Surgical Rehabilitation
 - Good data lacking for return to activity following surgery
 - Some physicians do not do PT after surgery

Treatment

- Post-Surgical Rehabilitation
 - PT post-surgical generally consists of the following:
 - Avoidance of sharp, sudden, cutting movements
 - Lower extremity inflexibility, weakness, and lack of coordination is corrected
 - Running straight ahead at day 21
 - Sprinting without cutting at week 3
 - Full activity after laparoscopic repair in 6 to 8 weeks
 - Full activity after open repair at approximately 18 weeks

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Photo References

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