RISK MANAGEMENT IN PODIATRIC SPORTS MEDICINE

PICA RISK MANAGEMENT WEBINAR      APRIL 13, 2016
DR BRIAN W. FULLEM

- Private Practice: Elite Sports Podiatry
- Clearwater, FL
- Fellow, American Academy of Podiatric Sports Medicine
- Fellow, American College Foot and Ankle Surgeons
- Doctorfullem@gmail.com
- www.EliteSportsPodiatry.com
CASE PRESENTATION

• 31 year old baseball player with achilles pain.
• Pain since injuring his foot a year prior after a bad ankle sprain
• Team is competing for the World Series championship
• September 18th a cortisone injection was performed by the team orthopedist
• What are the implications of a cortisone injection in the achilles?
• How many attending this webinar would inject any athlete in the achilles area?
• October 7 – playing in the NLDS
• Last out made by Ryan Howard
• As he started to run to first base he described the following: "I was trying to run and I just felt this pop. The whole thing went numb, like it was on fire.
• That's what they think it is [achilles]. I'm probably going to have to have surgery."
ACHILLES TENDON REPAIR

- Howard undergoes surgery October 12, 2011 to repair the achilles tear
- Develops an infection which requires a second surgery Feb 27, 2012
- 1st game back was July 6th – only played in 77 of 162 games in 2012
- 2013 only plays in 80/162 games and has knee surgery
- Team owes the player $125 million until 2016
- Ryan Howard’s HR’s before the achilles rupture: 58, 47, 48, 45, 31 and 33 with 3 years over 140 RBI’s 3 times!
- HR’s since the Achilles rupture: 14, 11, 23, 23
"There wouldn't be any way that you would back me into the corner on anybody [with an Achilles problem] to go ahead and inject them," said Dr. Michael Schafer, an orthopedic consultant to the Chicago Cubs and chairman of the orthopedic surgery department at Northwestern University Hospital. "I've been in practice since 1974 and been involved in sports all my life. When it comes to the risk of an Achilles tendon tear, I'm concerned about cortisone."

"It really depends on your comfort level" said Dr. Rob Raines, an orthopedic specialist with the Cincinnati Reds. "It certainly can be done safely. I'm comfortable [with the procedure] and commonly do inject the Achilles bursa. That's likely because I'm a foot and ankle orthopedic surgeon and feel very comfortable with the anatomy around the Achilles tendon."
In 1996, even though the San Diego Padres' medical staff initially balked at injecting the drug so close to his Achilles, Tony Gwynn had at least one cortisone shot near the tendon. A year later, Cincinnati's Barry Larkin had two injections.

Both players ended those seasons with a partially torn Achilles.
HOW ACCURATE IS OUR NEEDLE PLACEMENT?

- Yun JSI, Chung MJ1, Kim HR1, So JII, Park JE1, Oh HMI, Lee JII.

- To compare the accuracy rates of non-guided vs. ultrasound-guided needle placement in four lower limb muscles (tibialis posterior, peroneus longus, and short and long heads of the biceps femoris).
- A 71.9% accuracy rate was achieved by blind needle placement vs. 96.9% accuracy with ultrasound-guided needle placement (p=0.001). Blind needle placement accuracy ranged from 50% to 93.8%.
WHAT IS MALPRACTICE

• A person who alleges negligent medical malpractice must prove four elements:

• (1) a duty of care was owed by the physician;

• (2) the physician violated the applicable standard of care;

• (3) the person suffered a compensable injury;

• (4) the injury was caused in fact and proximately caused by the substandard conduct.

The burden of proving these elements is on the plaintiff in a malpractice lawsuit.
CORTICOSTEROID INJECTIONS

• Complications associated with the use of corticosteroids in the treatment of athletic injuries.
• Nichols AW1.

• Of the total 95 subjects in these case series or reports, all 95 (100%) developed complications. Plantar fascia rupture was the most common complication, as reported in 51 subjects (53.7%). Less frequent complications included patellar/quadriceps tendon rupture in 9 (9.5%), Achilles tendon rupture in 8 (8.4%), biceps tendon rupture in 8 (8.4%), and subcutaneous atrophy in 7 (7.4%).
SHOULD WE PERFORM WRITTEN INFORMED CONSENT PRIOR TO CORTICOSTEROID INJECTIONS?

- Current practice of obtaining informed consent for local steroid injection among the shoulder and elbow surgeons in United Kingdom.
- Lim CS1, Miles J, Peckham TJ.
- Survey of 176 orthopaedics surgeons in UK who were members of the British Elbow and Shoulder Society.
- The most common risk mentioned by the surgeons is short term increase of pain.
- Majority of the surgeons used verbal consent only for local steroid injection. The consent discussion was not regularly documented in case notes and the information delivered varies.
HISTORY OF CORTISONE

- Dr. Edward C. Kendall, a biochemist at Mayo Clinic who was studying the adrenal cortex, had extracted a number of substances that he named by letters of the alphabet starting with the letter “A.”

- Some compounds had metabolic activity, such as compound E. Hench was anxious to try compound E in rheumatic diseases, when it could be obtained in adequate quantities.

- Compound E, later named cortisone, became available for trial in 1948 as a result of a chemical synthetic process developed by Dr. Lewis H. Sarett at Merck & Co, Inc. The company agreed to supply Mayo Clinic with the drug for a trial.

- In 1950, Hench and Kendall were awarded the Nobel Prize in Physiology and Medicine “for their discoveries relating to adrenal cortical hormones, their structure and biological effects.”

- Dr. Tadeus Reichstein of Switzerland, who had spent his career studying adrenal hormones, was a co-recipient. The publicity of this event and other awards increased the number of patients coming to Mayo Clinic for cortisone.

CORTISONE INJECTIONS FOR INFLAMMATION

- Injection of hydrocortisone and later its analogues into joints causing local symptoms was pioneered by Mayo Clinic orthopedists. Frequent injections were avoided because of concern about infections and excessive use of the injected joint after reduced pain and swelling caused by the corticosteroid.
COMPLICATIONS OF INJECTIONS

- Complications of plantar fascia rupture associated with corticosteroid injection.
  - Acevedo JL, Beskin JL.
  - Foot Ankle Int. 1998 Feb;19(2):91-7.

- Are injections related to the dosage and type of corticosteroid used?

- From 1992 to 1995, 765 patients with a clinical diagnosis of plantar fasciitis were evaluated by one of the authors. Fifty-one patients were diagnosed with plantar fascia rupture, and 44 of these ruptures were associated with corticosteroid injection.

- The authors injected 122 of the 765 patients, resulting in 12 of the 44 plantar fascia ruptures. (10% rupture rate!!!)

- 40mg of Triamcinalone Acetate used
INJECTABLE TREATMENTS OF ACHILLES

• Foot Ankle Int. 2013 May;34(5):619-28.

• Injectable treatments for noninsertional achilles tendinosis: a systematic review.

• Gross CE, Hsu AR, Chahal J, Holmes GB Jr.

• The interventions of interest:
  - platelet-rich plasma (n = 54)
  - autologous blood injection (n = 40)
  - sclerosing agents (n = 72)
  - protease inhibitors (n = 26)
  - hemodialysate (n = 60)
  - corticosteroids (n = 52), prolotherapy (n = 20).

• Only 1 study met the criteria for a high-quality randomized controlled trial. All of the studies were designated as having a low quality of evidence.

• Most studies revealed that certain injectables were no better than a placebo.
HOW TO PROTECT YOURSELF

• 1. Be careful how you speak about other Doctor’s surgical outcomes and treatments
• 2. Communicate with your patients – keep the lines of communication open and go the extra step if someone is having a complication
• 3. Obtain and maintain informed consent for every surgical procedure
• 4. Keep and maintain good notes and records. NEVER CHANGE OR ALTER YOUR NOTES AFTER A SUIT IS INITIATED
COMMUNICATION


• Speaking and interruptions during primary care office visits. Rhoades D, et al.

• Patients only speak for 12 seconds on average before being interrupted

• Listen to the patient – they may tell you’re their diagnosis
CONFLICT OF INTEREST WITH BEING A TEAM DOCTOR?
CURT MARSH

- All American Offensive lineman from U. Washington
- 6’5” – 285 pounds
- 1st round pick of Oakland Raiders in 1981 draft (2nd round pick was Howie Long)
- Made All Rookie team in 1981

- Ankle injury in 1986 season -2 surgeries in offseason to “remove bone spurs” based on x-rays alone
- Orthopedist was best friends with the owner
- CT scan revealed a fractured talus after the 1987 season
- Underwent many surgeries including 3 failed fusions of the ankle before having an amputation in 1990
GREAT TO BE A TEAM DOCTOR

• Your duty is to the patient
• Get the athlete back to competition as fast as is SAFE
• Patients must understand the risks of all the treatments and implications for competing
STRESS FRACTURES

- X-rays are often not conclusive
- Do not completely rule out a fracture with a patient based only on the x-rays
- MRI is not always the next best test to do
- Don’t forget about Bone scans
- Look at the actual images – do not just go by the Radiology report
MAKE THE PROPER DIAGNOSIS
X-RAYS ARE NOT THE END

Glucocorticoid-induced osteonecrosis develops in 9–40% of patients receiving long-term therapy although it may also occur with short-term exposure to high doses, after intra-articular injection, and without glucocorticoid-induced osteoporosis.
NSAIDS

- Ziltener JL, Leal S, Fournier PE.
- Athletes takes NSAIDS for preventative purposed prior to competitions
- High relative risk of GI bleed after 1 month of use
- Renal dysfunction – John Mortimer
- Liver problems
- 60% of triathletes from Brazil Ironman enrolled in a study took NSAIDS – most did not know the possible side effects
Table 2
The conclusions of the authors about using NSAIDs in sports medicine.

<table>
<thead>
<tr>
<th>Type of injury</th>
<th>NSAID Impact</th>
<th>Comments</th>
</tr>
</thead>
<tbody>
<tr>
<td>Ligament: acute sprain</td>
<td>Possibly and potentially useful in the short-term</td>
<td>Reduces pain and swelling</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Faster return to athletic activities</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Long-term residual laxity (????)</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Short-term use (&lt; 5 days)</td>
</tr>
<tr>
<td>Tendon: true acute tenosynovitis</td>
<td>Possibly and potentially useful</td>
<td>Reduces acute inflammations</td>
</tr>
<tr>
<td>Tendon: overuse tendinopathy</td>
<td>Probably not useful</td>
<td>Helps recovery</td>
</tr>
<tr>
<td>Bone: fracture</td>
<td>Contra-indicated</td>
<td>Analgesic effect only, no benefit for healing</td>
</tr>
<tr>
<td>Bone: stress fracture</td>
<td>Contra-indicated</td>
<td>Probable harmful effects on bone formation</td>
</tr>
<tr>
<td>Muscle: acute muscle tear</td>
<td>Probably not useful and perhaps not indicated</td>
<td>Probable harmful effects on bone formation</td>
</tr>
<tr>
<td>Muscle: contusion</td>
<td>Potentially useful</td>
<td>Inhibits protein synthesis and inflammatory reaction</td>
</tr>
<tr>
<td>Muscle: DOMS</td>
<td>Potentially useful</td>
<td>In case of deep contusion or history of ossifying myositis</td>
</tr>
</tbody>
</table>

NSAIDs: non-steroidal anti-inflammatory drugs; DOMS: Delayed Onset Muscle Soreness.
FLUOROQUINOLONES AND ATHLETES


- Fluoroquinolones and tendinopathy: a guide for athletes and sports clinicians and a systematic review of the literature.

- Lewis T1, Cook J.

- Cipro, Levaquin, Floxin, Avelox

**CONCLUSIONS:** Fluoroquinolone tendinopathy may not respond well to the current popular eccentric training regimes and may require an alternative, staged treatment approach.

- Clinicians, athletes, athletic trainers, and their medical support teams should be aware of the need to discuss and possibly discontinue these antibiotics if adverse effects arise.
Main statements about ESWT based on the RCTs on rESWT and fESWT listed in the PEDro database

1 ESWT is effective.

2 ESWT is safe.

3 For certain orthopedic conditions, RCTs on ESWT were the predominant type of RCT listed in the PEDro database and/or obtained the highest PEDro scores among all investigated treatment modalities.

4 There was no difference in the ‘quality’ of RCTs on ESWT in PEDro with positive or negative outcome.

5 Application of local anesthesia adversely affects outcome of ESWT.

6 Application of insufficient energy adversely affects outcome of ESWT.

7 There is no scientific evidence in favor of either rESWT or fESWT with respect to treatment outcome.

8 The distinction between radial ESWT as ‘low-energy ESWT’ and focused ESWT as ‘high-energy ESWT’ is not correct and should be abandoned.

9 There is no scientific evidence that a certain fESWT technology is superior to the other technologies.

10 An optimum treatment protocol for ESWT appears to be three treatment sessions at 1-week intervals, with 2000 impulses per session and the highest energy flux density that can be applied.
PLATINUM LEVEL OF EVIDENCE

- With so many positive Level I-III studies, Cochrane Reviews has designated beyond “Gold Standard”
- Nothing else this rigidly studied in musculoskeletal medicine
SPORTS MEDICINE

• 1. Make a diagnosis and treat the cause not the symptoms
• 2. Get the athlete back as fast as is safely possible
• 3. Listen to the athlete and understand the importance of upcoming competitions and seasons
• 4. Sometimes we have to be the bad guy and tell them they can’t compete or practice
• 5. Communication is the key, understand RTA’s
THANK YOU