

**PASIG PERFORMING ARTS**  
SPECIAL INTEREST GROUP



**ORTHOPAEDIC SECTION**  
AMERICAN PHYSICAL THERAPY ASSOCIATION



**PASIG MONTHLY CITATION BLAST: No. 100**

**December 2014**

Dear Performing Arts SIG members:

**CSM 2015 is just around the corner!**



CSM 2015 will be in Indianapolis, IN, at the Indiana Convention Center. The dates are February 4-7, 2015. Registration has been open since September.

<http://www.apta.org/csm/>

**The Orthopaedic Section Performing Arts SIG is pleased to announce this year's PASIG speaker is Dr. Clare Frank, PT, DPT, OCS, FAAOMPT.** Dr. Frank serves as a clinical instructor for both Spine & Sports Rehabilitation Fellowship programs at Kaiser Permanente, Los Angeles. She served on the injury prevention & rehab team for the National Training Center in Beijing, China (2010-2013) and the medical team for the 2009 World Figure Skating Championships held in Los Angeles. Dr. Frank is a certified instructor for Janda's Approach to Musculoskeletal Pain Syndromes, and Kolar's Approach to Dynamic Neuromuscular Stabilization.

Dr. Frank will speak on and demonstrate *Dynamic Neuromuscular Stabilization in Spinal Rehabilitation & Performance*. It will be an informative and helpful session, as Dr. Frank will teach clinically applicable use of Dynamic Neuromuscular Stabilization in evaluating and treating performing artists.

The above PASIG programming will be **Saturday, Feb 7, from 8-10 AM, in the Indiana Convention Center, Wabash Ballroom 1.**

**Important note:** Our Performing Arts SIG business meeting will be the same day, **before the PASIG speaker, from 7-8 AM, in the Indiana Convention Center, Wabash Ballroom 1.** While this is early, all APTA members are welcome. This is a great opportunity to connect, meet others, investigate how you might become involved, and voice your ideas.

**WE NEED MORE CONTRIBUTORS TO OUR MONTHLY CITATION BLASTS!!!!**

Past Monthly citation blasts are available, with citations and EndNote file, listed on the website:

[http://www.orthopt.org/content/special\\_interest\\_groups/performing\\_arts/citations\\_endnotes](http://www.orthopt.org/content/special_interest_groups/performing_arts/citations_endnotes)

**TOPICS THAT HAVE BEEN COVERED RECENTLY INCLUDE:**

*Posterior ankle impingement (this month)*

*TMD in Musicians*

*Concussions*

*Bone Mineral Density in Dancers*

*Serratus Anterior Strengthening for Dancers*

*Focal Dystonia*

*Gymnastics: Update on Injuries and Movement Strategies*

*Dancers: Jumps, Landings, and Associated Injuries*

*Work-Related Injuries in Retired Dancers*

*Hip Labral Tears*

**If you are interested in contributing by writing a citation blast, contact Brooke Winder: [BrookeRwinder@gmail.com](mailto:BrookeRwinder@gmail.com)**

PASIG Membership is free! All Orthopaedic Section members are welcome:

[http://www.orthopt.org/sig\\_pa\\_join.php](http://www.orthopt.org/sig_pa_join.php)

Current PASIG members: update your profile here:

[https://www.orthopt.org/login.php?forward\\_url=/surveys/membership\\_directory.php](https://www.orthopt.org/login.php?forward_url=/surveys/membership_directory.php)

**Performing Arts resources are available to members for free:**

[https://www.orthopt.org/content/special\\_interest\\_groups/performing\\_arts/pasig\\_resources](https://www.orthopt.org/content/special_interest_groups/performing_arts/pasig_resources)

The resource pages full of art-specific information on

- Artist-specific Terminology (i.e., jumps, spins, instruments, turns)
- Genre Specific Terminology and Definitions
- Common Injuries
- Artist-specific Evaluations
- Performing Arts-specific Interventions

- Patterns of Regional Interdependence Association with Specific Injuries/Pathologies
- Return to Arts Progressions

**Tweet Tweet! We have a Twitter page!**

<https://twitter.com/PT4Performers>

Post your articles, info on your site, let's get connected!

Check out the Orthopaedic section Facebook page, where you can find and post PASIG info: <https://www.facebook.com/pages/APTA-Orthopaedic-Section/121020534595362>

If you are currently using a dancer screen, please contact Sarah Wenger, as she is seeking input on a single screen that she will make available to our members: [Sbw28@drexel.edu](mailto:Sbw28@drexel.edu)

If you are seeking a more formal method of continuing education on performing artists, there is an independent study courses available through the APTA website: [https://www.orthopt.org/content/c/20\\_3\\_physical\\_therapy\\_for\\_the\\_performing\\_artist](https://www.orthopt.org/content/c/20_3_physical_therapy_for_the_performing_artist)

Last, the quarterly publication of Orthopaedic Practice Magazine is a fun and useful source of clinically relevant information in the form of case reports, case series, clinical pearls, and original research. Please consider submitting your case report or research on performing artists to the PASIG pages. If you are interested in submitting your writing, please contact Annette Karim: [neoluvsonlyme@aol.com](mailto:neoluvsonlyme@aol.com)

Best regards,

*Brooke*

Brooke Winder, PT, DPT, OCS

Chair, PASIG Research Committee

*Director of Physical Therapy, The Cypress Center, Pacific Palisades, CA*

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PERFORMING ARTS CONTINUING EDUCATION, CONFERENCES, AND RESOURCES

Musician Health Series, Janice Ying, PT, DPT, OCS  
Glendale Adventist Therapy and Wellness Center, Los Angeles area (Eagle Rock), CA  
<http://www.musicianshealthcorner.com/>  
Healthy Musician Series - Overuse

Orthopaedic Section Independent Study Course. *20.3 Physical Therapy for the Performing Artist.*

Monographs are available for:

- Figure Skating (J. Flug, J. Schneider, E. Greenberg),
  - Artistic Gymnastics (A. Hunter-Giordano, Pongetti-Angeletti, S. Voelker, TJ Manal),
- and
- Instrumentalist Musicians (J. Dommerholt, B. Collier).

Contact: Orthopaedic Section at: [www.orthopt.org](http://www.orthopt.org)

Orthopaedic Section-American Physical Therapy Association,  
Performing Arts SIG

[http://www.orthopt.org/content/special\\_interest\\_groups/performing\\_arts](http://www.orthopt.org/content/special_interest_groups/performing_arts)

Performing Arts Citations and Endnotes

[http://www.orthopt.org/content/special\\_interest\\_groups/performing\\_arts/citations\\_endnotes](http://www.orthopt.org/content/special_interest_groups/performing_arts/citations_endnotes)

ADAM Center

<http://www.adamcenter.net/>

Publications:

<http://www.adamcenter.net/#!vstc0=publications>

Conference abstracts:

<http://www.adamcenter.net/#!vstc0=conferences>

Dance USA

<http://www.danceusa.org/>

Research resources:

<http://www.danceusa.org/researchresources>

Professional Dancer Annual Post-Hire Health Screen:

<http://www.danceusa.org/dancerhealth>

Dancer Wellness Project

<http://www.dancerwellnessproject.com/>

Becoming an affiliate:

<http://www.dancerwellnessproject.com/Information/BecomeAffiliate.aspx>

Harkness Center for Dance Injuries, Hospital for Joint Diseases

<http://hjd.med.nyu.edu/harkness/>

Continuing education:

<http://hjd.med.nyu.edu/harkness/education/healthcare-professionals/continuing-education-courses-cme-and-ceu>

Resource papers:

<http://hjd.med.nyu.edu/harkness/dance-medicine-resources/resource-papers-and-forms>

Links:

<http://hjd.med.nyu.edu/harkness/dance-medicine-resources/links>

Informative list of common dance injuries:

<http://hjd.med.nyu.edu/harkness/patients/common-dance-injuries>

Research publications:

<http://hjd.med.nyu.edu/harkness/research/research-publications>

International Association for Dance Medicine and Science (IADMS)

<http://www.iadms.org/>

Resource papers:

<http://www.iadms.org/displaycommon.cfm?an=1&subarticlenbr=186>

Links:

<http://www.iadms.org/displaycommon.cfm?an=5>

Medicine, arts medicine, and arts education organization links:

<http://www.iadms.org/displaycommon.cfm?an=1&subarticlenbr=5>

Publications:

<http://www.iadms.org/displaycommon.cfm?an=3>

Performing Arts Medicine Association (PAMA)

<http://www.artsmed.org/>

<http://www.artsmed.org/symposium.html>

Interactive bibliography site:

<http://www.artsmed.org/bibliography.html>

Related links:

<http://www.artsmed.org/relatedlinks.html>

Member publications:

<http://artsmed.org/publications.html>

*(Educators, researchers, and clinicians, please continue to email your conference and continuing education information to include in future blasts)*

## **Posterior ankle impingement in dancers**

Many forms of dance, particularly ballet, place a high demand on the structures of the posterior ankle complex. This is usually due to the repetitive use of pointe and demi-pointe positions as well as frequent push-off movements at the ankle and foot. This month's citation blast shares research publications from 2012-2014 highlighting the presentation/diagnosis, management (conservative and surgical) and outcomes of posterior ankle impingement injuries. I hope these articles serve as a useful update on this topic.

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**Ahn JH, Kim YC, Kim HY. Arthroscopic versus posterior endoscopic excision of a symptomatic os trigonum: a retrospective cohort study. *Am J Sports Med.* May 2013;41(5):1082-1089.**

Background: Both subtalar arthroscopic and posterior endoscopic techniques are used to treat posterior ankle impingement syndrome (PAIS). However, there have been no studies comparing the 2 procedures.

Hypothesis: Both arthroscopic and endoscopic excisions of the os trigonum are safe and effective in treating PAIS.

Study Design: Cohort study; Level of evidence, 3.

Methods: Twenty-eight patients were treated with excision of the os trigonum either by an arthroscopic (16 patients) or endoscopic (12 patients) technique. The mean patient age was 29.8 years (range, 17-55 years), and the mean follow-up period was 30 months (range, 18-58 months). Preoperative and postoperative visual analog scale (VAS) score for pain, American Orthopaedic Foot and Ankle Society (AOFAS) score, and Maryland Foot Score (MFS) were used to analyze the functional results. Duration of surgery, time to return to sports (RTS), and patient satisfaction were evaluated as well. The size of the os trigonum was measured using T1-weighted sagittal magnetic resonance imaging (MRI). The clinical and MRI results were compared between the 2 groups.

Results: The VAS score, AOFAS score, and MFS for both the arthroscopic group (preoperative: 6.3, 63.8, and 61.5, respectively; postoperative: 1.2, 89.9, and 89.6, respectively) and endoscopic group (preoperative: 6.7, 64.8, and 62.5, respectively; postoperative: 1.2, 89.9, and 88.4, respectively) improved significantly ( $P < .01$ ). The mean surgery and RTS times were 39.4 minutes and 7.5 weeks in the arthroscopic group and 34.8 minutes and 8.0 weeks in the endoscopic group, respectively ( $P > .05$ ). All patients were satisfied with the results. There were no significant differences between the 2 groups in the preoperative and postoperative VAS score, AOFAS score, or MFS ( $P > .05$ ). The mean size of the os trigonum was  $11.1 \times 8.8 \text{ mm}^2$  in the arthroscopic group and  $12.6 \times 10.4 \text{ mm}^2$  in the endoscopic group, and the difference was significant ( $P < .05$ ). Two patients underwent both arthroscopic and endoscopic procedures because of technical difficulty in removing the large os trigonum arthroscopically.

Conclusion: Both arthroscopic and posterior endoscopic excisions of the os trigonum were safe and effective in treating PAIS. The arthroscopic procedure was more demanding, especially in cases of a large os trigonum. The posterior endoscopic approach had the advantage of addressing problems in the posterior ankle joint and allowed a more extensive release of the flexor hallucis longus.

**Donnenwerth MP, Roukis TS. The incidence of complications after posterior hindfoot endoscopy. *Arthroscopy*. Dec 2013;29(12):2049-2054.**

*Purpose*

The purpose of this systematic review was to determine the incidence of complications after posterior hindfoot endoscopy.

*Methods*

Ovid/Medline and Google Scholar were systematically searched for pertinent references to be included. In addition, we hand-searched common American and European orthopaedic and podiatric surgical journals for relevant articles. Articles considered for inclusion were published in peer-reviewed journals, described complications after posterior hindfoot endoscopy using a standard 2-portal technique, and involved 25 or more patients treated.

*Results*

We identified 335 potentially relevant publications, of which 5 met our inclusion criteria. A total of 452 ankles (452 patients) were included in this study. Overall, 17 complications (3.8%) occurred, with only 8 (1.8%) requiring additional treatment or operative intervention.

*Conclusions*

The endoscopic approach for the treatment of hindfoot and ankle pathology is safe with a low incidence of complications. However, additional studies with prospective designs should be undertaken to determine the long-term patient outcomes using validated scoring systems.

**Giannini S, Buda R, Mosca M, Parma A, Di Caprio F. Posterior ankle impingement. *Foot Ankle Int*. Mar 2013;34(3):459-465.**

Posterior ankle impingement is a common cause of chronic ankle pain and results from compression of bony or soft tissue structures during ankle plantar flexion. Bony impingement is most commonly related to an os trigonum or prominent trigonal process. Posteromedial soft tissue impingement generally arises from an inversion injury, with compression of the posterior tibiotalar ligament between the medial malleolus and talus. Posterolateral soft tissue impingement is caused by an accessory ligament, the posterior intermalleolar ligament, which spans the posterior ankle between the posterior tibiofibular and posterior talofibular ligaments. Finally, anomalous muscles have also been described as a cause of posterior impingement.

**Kao H-K, Gamble JG. Painful Ununited Fracture of the Posterior Process of the Talus in an Adolescent Dancer. *The Journal of Bone and Joint Surgery Case Connector*. 2014;4(4):e92-.**

Case: Fractures of the talus in children and adolescents are uncommon and generally involve the body or neck of the talus. We present a thirteen-year-old dancer with an ununited fracture of the posterior process of the talus that was initially thought to be a painful os trigonum.

Conclusion: This injury was confused with a painful os trigonum. We found that the size of the fragment, the extent to which the fracture line undercut the tibial plafond, and the findings on magnetic resonance imaging were helpful in clarifying the diagnosis of the fracture.

**Lee KT, Kim JB, Park YU, Chon JG, Lee JG. Ultrasonic evaluation of flexor hallucis longus tenosynovitis in sports players. *The Korean Journal of Sports Medicine.* 2013;31(2):51-54.**

The purpose of this study was to investigate the ultrasonographic features of flexor hallucis longus (FHL) tenosynovitis in sports players. High-resoluted ultrasound was used to measure the thickness and echogenicity of the flexor hallucis longus at the posteromedial ankle, especially the fibro-osseous tunnel, for 60 sports players (120 feet). They were compared with their asymptomatic feet. There were two groups; group 1 was symptomatic feet, 2 was asymptomatic. The 36 males (72 feet) and 24 females (48 feet) had an average age of 21.3 years (range, 18.23 years). Thickness, echogenicity of the tendon on each group were evaluated by the ultrasonography and the results were statistically analyzed. The mean thickness of the FHL on group 1 was  $3.4 \pm 1.2$  mm,  $2.1 \pm 1.3$  mm on group 2. There was significant difference between two groups ( $p=0.002$ ). The thickness of FHL based on gender and location was not significantly different ( $p>0.05$ ). For group 1, increased thickness of the FHL and reduced echogenicity, peritendinous fluid collection were observed in ultrasonographic findings. Increased thickness ( $>3$  mm) and hypoechoic lesion, peritendinous fluid collection of the tendon were sonographic findings at the posteromedial ankle in the FHL tenosynovitis. The authors suggested that Ultrasonography is a valuable and alternative tool for the evaluation of FHL tenosynovitis.

**Luk P, Thordarson D, Charlton T. Evaluation and management of posterior ankle pain in dancers. *Journal of Dance Medicine and Science.* 2012;17(2):79-83.**

Posterior ankle pain is a common complaint in dancers. There are multiple structures in the posterior ankle that have the potential to be the source of pain. The objective of this article is to review several of the most common causes of posterior ankle pain: peroneal tendon subluxation, posterior impingement syndrome secondary to a painful os trigonum, posterior talusosteocondritis dissecans, flexor hallucis longus tendinopathy, and posterior tibial tendinopathy. For dancers, we offer typical clinical presentations of these disorders to increase awareness and provide guidance regarding when to seek professional medical attention. For medical personnel who are responsible for optimizing dancers' health and training, we include a discussion of pertinent physical exam findings, diagnostic imaging options, non-operative and operative management, as well as surgical suggestions and postoperative rehabilitation guidelines.



**Nault ML, Kocher MS, Micheli LJ. Os Trigonum Syndrome. *J Am Acad Orthop Surg.* Sep 2014;22(9):545-553.**

Os trigonum syndrome is the result of an overuse injury of the posterior ankle caused by repetitive plantar flexion stress. It is predominantly seen in ballet dancers and soccer players and is primarily a clinical diagnosis of exacerbated posterior ankle pain while dancing on pointe or demi-pointe or while doing push-off maneuvers. Symptoms may improve with rest or activity modification. Imaging studies, including a lateral radiographic view of the ankle in maximal plantar flexion, will typically reveal the os trigonum between the posterior tibial lip and calcaneus. If an os trigonum is absent on radiography, an MRI may reveal scar tissue behind the posterior talus, a condition associated with similar symptoms. Os trigonum syndrome is often associated with pathology of the flexor hallucis longus tendon. Treatment begins with nonsurgical measures. In addition to physical therapy, symptomatic athletes may need surgical excision of os trigonum secondary to unavoidable plantar flexion associated with their sport. This surgery can be performed using open or arthroscopic approaches.

**Ribbans WJ, Ribbans HA, Cruickshank JA, Wood EV. The management of posterior ankle impingement syndrome in sport: A review. *Foot and Ankle Surgery: Articles in Press.* 2014.**

A literature review has been undertaken to assess the efficacy of management of Posterior Ankle Impingement Syndrome with an emphasis on sport. The evidence is confined to Level IV and V studies. There is a lack of prospective studies on the natural history of this condition and the outcomes of conservative treatment. Dance dominates the literature accounting for 62% of reported sports. Forty-seven papers have reported on the surgical outcomes of 905 procedures involving both open and arthro-endoscopic techniques. 81% of patients required excision of osseous pathology and 42% soft-tissue problems resolving. There is a lack of standardisation of outcome reporting particularly in the open surgery group. However, the complication rates are relatively low: 3.9% for open medial, 12.7% for open lateral and 4.8% for arthro-endoscopic surgery. Return to sport appears quicker for all activities in the arthro-endoscopic group but comparison of long term outcomes is more difficult with no evidence supporting superior long term results of one technique over another. Soccer players appear to return more quickly to activity than dancers.

**Smyth NA, Murawski CD, Levine DS, Kennedy JG. Hindfoot arthroscopic surgery for posterior ankle impingement: a systematic surgical approach and case series. *Am J Sports Med.* Aug 2013;41(8):1869-1876.**

**Background:** Hindfoot arthroscopic surgery has been described as a minimally invasive surgical treatment for posterior ankle impingement syndrome. The current article describes a systematic approach for identifying relevant hindfoot structures as well as the clinical results of a case series.

**Purpose:** To present a structured systematic surgical approach for identifying relevant anatomic structures and abnormalities during hindfoot arthroscopic surgery. In addition, we report the clinical results of a case series.

**Study Design:** Case series; Level of evidence, 4.

**Methods:** The systematic surgical approach divides the extra-articular structures of the hindfoot into quadrants as defined by the intermalleolar ligament. Twenty-two patients underwent hindfoot arthroscopic surgery for the treatment of posterior ankle impingement syndrome. The mean follow-up time was 25 months (range, 14-35 months). Standard patient-reported outcome questionnaires of the Foot and Ankle Outcome Score (FAOS) and Short Form-12 (SF-12) general health survey were administered at standard time points after surgery. Return to sporting activities was also calculated as the time period from the date of surgery until the patient was able to participate at their previous level of activity.

**Results:** The mean FAOS score improved from 59 (range, 22-94) preoperatively to 86 (range, 47-100) postoperatively ( $P < .01$ ). The mean SF-12 score showed similar improvement with a mean of 66 (range, 42-96) preoperatively to 86 (range, 56-98) postoperatively ( $P < .01$ ). Nineteen patients reported competing at some level of athletic sport before surgery. All patients returned to their previous level of competition after surgery. The mean time to return to sporting activities was 12 weeks (range, 6-16 weeks). Two complications were reported postoperatively: 1 wound infection and 1 case of dysesthesia of the deep peroneal nerve.

**Conclusion:** Hindfoot arthroscopic surgery is a safe and effective treatment strategy for posterior ankle impingement syndrome. In addition, it allows the patients a rapid return to sporting activities.

**Smyth NA, Zwiers R, Wiegerinck JI, et al. Posterior hindfoot arthroscopy: a review. *Am J Sports Med.* Jan 2014;42(1):225-234.**

In recent years, minimally invasive surgery has developed and progressed the standard of care in orthopaedics and sports medicine. In particular, the use of posterior hindfoot arthroscopy in the treatment of posterior ankle and hindfoot injury is increasing rapidly as a means of reducing pain, infection rates, and blood loss postoperatively compared with traditional open procedures. In athletes, hindfoot arthroscopy has been used effectively in expediting rehabilitation and ultimately in minimizing the time lost from competition at previous levels. Van Dijk et al were the first to describe the original 2-portal technique, which remains the most commonly used by surgeons today and forms the basis for this review. The current evidence in the literature supports the use of 2-portal hindfoot arthroscopy as a safe, primary treatment strategy for symptoms of posterior ankle impingement, including resection of os trigonum, treatment of flexor hallucis longus

and peroneal tendon injury, treatment of osteochondral lesions of the ankle, and the resection of subtalar coalitions. In this review, we present where possible an evidence-based literature review on the arthroscopic treatment of posterior ankle and hindfoot abnormalities. Causes, diagnosis, surgical technique, outcomes, and complications are each discussed in turn.

**Vila J, Vega J, Mellado M, Ramazzini R, Golano P. Hindfoot endoscopy for the treatment of posterior ankle impingement syndrome: a safe and reproducible technique. *Foot Ankle Surg.* Sep 2014;20(3):174-179.**

**Introduction**

Posterior ankle impingement is a clinical syndrome characterized by posterior ankle pain that is mainly presented on plantar flexion. The aim of this study is to compare and evaluate the results of posterior ankle impingement treated by endoscopic hindfoot posterior portals.

**Materials and methods**

Between 2004 and 2009, a total of 38 endoscopic hindfoot procedures were performed to treat posterior ankle impingement. The indication for procedure was posterior ankle impingement syndrome in all cases. There were 38 patients, 17 females and 21 males. Mean age was 27.6 years (16–59 years). Mean follow-up was 27.6 months (12.5–52 months). The results were evaluated following the AOFAS score. Data statistical analysis was performed using the Student's *t*-test.

**Results**

The main preoperative AOFAS score increased from 67.42 (range 41–91) to 97.13 (range 84–100) at follow-up. No complications were reported in any case.

**Conclusion**

Hindfoot endoscopy is a reproducible and safe procedure which offers excellent outcomes in posterior ankle impingement syndrome.

**Wiegerinck JI, Vroemen JC, van Dongen TH, Sierevelt IN, Maas M, van Dijk CN. The posterior impingement view: an alternative conventional projection to detect bony posterior ankle impingement. *Arthroscopy.* Oct 2014;30(10):1311-1316.**

**Purpose**

The purpose of the current study was to clinically evaluate the diagnostic value of the new posterior impingement (PIM) view in the detection of an os trigonum, compared with the standard lateral view, using computed tomography (CT) as a reference standard.

**Methods**

Three observers, 2 experienced (orthopaedic surgeon and radiologist) and one inexperienced (resident), independently scored 142 radiographic images for the presence of an os trigonum. The diagnostic performance was assessed using the computed tomographic scan as the reference standard. Accuracy, sensitivity,

specificity, positive predicted value (PPV), and negative predicted value (NPV) were calculated.

#### Results

The PIM view had significantly superior accuracy compared with the lateral view for each observer: orthopaedic surgeon, PIM view = 90 versus lateral view = 75 ( $P = .013$ ); radiologist, PIM view = 80 versus lateral view = 64 ( $P = .019$ ); resident, PIM view = 90 versus lateral view = 79 ( $P = .039$ ). The mean sensitivity and specificity of the lateral view for all observers was 50% and 81%, respectively. For the PIM view, this was 78% and 89%, respectively. The PPV was 50% for the lateral view and 70% for the PIM view. The NPV was 84% for the lateral view and 93% for the PIM view.

#### Conclusions

The PIM view has significantly superior diagnostic accuracy compared with the conventional lateral view in the detection of an os trigonum. In cases of symptomatic posterior ankle impingement, we advise that a PIM view be used instead of or in addition to the standard lateral view for detection of posterior talar pathologic conditions.

