The Silfverskiold Test: Are we all doing it the same?

Adam Carr OMS III\textsuperscript{1}, Kyle Rockwell OMS III, MS\textsuperscript{1}, Joseph Long\textsuperscript{2}, John Weis\textsuperscript{3}, Dylan Lewis OMS II\textsuperscript{1}, Nicholas A. Cheney DO\textsuperscript{4}, Timothy Law DO, MBA\textsuperscript{1}

1. Ohio University Heritage College of Osteopathic Medicine, Dublin, Ohio
2. Ohio State University, Columbus, Ohio
3. University of Dayton, Dayton, Ohio
4. OrthoNeuro, Dublin, Ohio
Disclosures

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Adam Carr OMS III - none
Kyle Rockwell OMS III, MS - none
Joseph Long, BS - none
John Weis - none
Dylan Lewis OMS II - none
Nicholas A. Cheney DO - Consultant: BESPA Global & Flower Orthopedics
Timothy Law DO, MBA – none

We have no potential conflicts with this presentation.
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• Abstract
  – The Silfverskiold test is used to evaluate the gastrocnemius-soleus complex and ankle equinus.
  – Performing the Silfverskiold test in an inappropriate manner may cause a missed diagnosis of gastrocnemius contracture.
  – Thirty consecutive patients meeting the inclusion criteria had Silfverskiold tests performed on them in both the correct and incorrect manner.
  – Measurements taken with a goniometer showed an average 12.1 degree difference between performing the test correctly and incorrectly.
  – Failing to make the diagnosis of gastrocnemius contracture, which has been shown to be a major contributing factor in many foot and ankle pathologies, will likely lead to increased patient morbidity.
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• Introduction
  – Gastrocnemius equinus has been associated with a wide range of foot and ankle pathologies in the literature; however, many still question its involvement or existence.
  – A recent response in Foot & Ankle International pointed out an incorrect demonstration of the Silfverskiold test in a prior study. With a growing body of literature supporting gastrocnemius equinus as a contributing factor in foot and ankle pain, why do many feel that it still does not exist?
  – It was our hypothesis that, unless the examination is performed correctly, the diagnosis can be missed and could be the potential cause for disbelief in its existence or effect on foot and ankle pain.
  – We sought to demonstrate the difference in examination findings when performing the test correctly and incorrectly.
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- Methods
  - This study included 30 consecutive patients with conditions associated with gastrocnemius equinus in the literature including plantar fasciitis and achilles tendonitis.
  - Each patient consented and had a Silfverskiold test performed correctly by inverting and locking the subtalar joint, as well as stabilizing the talonavicular joint in order to isolate the ankle joint.
  - The Silfverskiold test was then performed incorrectly without stabilizing the same two joints, allowing motion through the ipsilateral hind foot and mid-foot joints.
  - A long arm goniometer was used to measure the angles with respective arms along the length of the fibula and fifth metatarsal.

Figure 1. Correct demonstration of the Silfverskiold test. Notice that the subtalar and talonavicular joints are locked in place in order to isolate motion through the ankle joint.

Figure 2. Incorrect demonstration of the Silfverskiold test. Hind foot and mid-foot joints are unlocked and free to travel through their respective ranges, causing an additive effect to the ankle joint.
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• Results
  – We found that when the subtalar and talonavicular joints were stabilized, there was almost 15 degrees less dorsiflexion than when the same joints were not stabilized. This is significant because the threshold for a positive Silfverskiold test is 10 degrees.
  – The average dorsiflexion, when performed in the correct manner, was 76.3 degrees, while the average dorsiflexion with the exam performed incorrectly was 88.4 degrees.
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• Conclusion
  – We demonstrated that if the examination is not performed correctly, the equinus contracture could go undiagnosed as motion through the hind foot and mid-foot joints can alter the findings.
  – It is important to understand and perform the technique correctly to evaluate for contracture as it has been shown to be a contributing factor in many foot and ankle problems.
  – If we standardize the examination, there may be less disagreement about its existence or affect on foot and ankle pain.
  – By screening asymptomatic patients and instituting calf stretches early in treatment plans, the Silfverskiold test has potential to significantly decrease the number of patients suffering from common foot and ankle pathologies.
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• References