ABSTRACTS IN URGENT CARE

- Achilles Tendon Rupture
- Predictive Value of Seamen's Sign
- PT and Meniscus Tears
- Managing ACS in Rural Areas
- Following Up on Radiology Recommendations
- Syncope and Motor Vehicle Accidents

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Surgical vs Nonoperative Management of Achilles Tendon Rupture

Take-home point: Surgery at 12 months postinjury was not associated with better outcomes compared with nonoperative treatment of Achilles tendon rupture.

Citation: Myhrvold S, Brouwer E, Andersen T, et al. Nonoperative or surgical treatment of acute Achilles tendon rupture. *N Engl J Med*. 2022;386(15):1409-1420.

Relevance: Nonoperative approaches to treatment of ruptured Achilles tendon have been described previously. Given risks and the cost of surgery, it is worthwhile to determine if patients benefit from this intervention.

Study summary: This randomized controlled trial at four centers in Norway compared two surgical treatments (open and minimally invasive) with nonoperative measures for Achilles tendon rupture in adult patients. Patients were randomly assigned in a 1:1:1 ratio. Equinus casting was used for the treatment of nonoperative patients for 6 weeks, followed by sequential heel-wedged walking boot.

The authors enrolled 532 patients. They found no significant differences among patients assigned to receive nonoperative treatment or undergo open repair or minimally invasive surgery. Nonoperative treatment was associated with a higher risk of re-rupture (6.2%) compared with surgical treatment (0.6% for both surgical approaches). Nerve injuries were more common with minimally invasive surgery (0.6% vs 5.2%). The re-rupture rate in this study was lower than that previously reported in other similar trials. At 12 months there was no significant difference in the physical performance of patients as measured by the Achilles tendon Total Rupture Score –17.0 points (95% confidence interval [CI], –20.0 to –14.0) in the nonoperative group; –16.0 points (95% CI, –19.0 to –12.9) in the open-repair group; and –14.7 points (95% CI, –17.9 to –11.6) in the minimally invasive surgery group (p=0.57).

Editor's comments: Patients with history of recent glucocorticoid injections, quinolone use, prior rupture, and age >60 were excluded. Therefore, the results of this study cannot be extrapolated to such patients. Ultimately, decision-making around operative risks vs benefits will be made by an orthopedic specialist, so patients with concern for Achilles tendon rupture all still warrant urgent referral. ■

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Seamens' Sign in Predicting Left Ventricular Hypertrophy on ECG

Take-home point: Seamens' Sign was noninferior in diagnosing left ventricular hypertrophy (LVH) on ECG when compared with both Sokolow-Lyon and Cornell criteria.

Citation: Walker P, Jenkins CA, Hatcher J, et al. Seamens' Sign: a novel electrocardiogram prediction tool for left ventricular hypertrophy. *Peer J*. 2022; 10:e13548.

Relevance: LVH can be a harbinger of more significant cardiac disease, most notably diastolic dysfunction. ECG is among the least invasive and expensive means of cardiac evaluation and can provide clues about structural heart disease. However, diagnosing LVH on ECGs can be tricky.

Study summary: This was a retrospective emergency department-based chart review at a quaternary care academic medical center in the United States. The study recruited consecutive patients with both an ECG and a transthoracic echocardiogram

(TTE) performed within 90 days of each other. It evaluated the test characteristics of the proposed Seamens' Sign and compared its ability to confirm an LVH diagnosis against the Sokolow-Lyon and Cornell voltage criteria. The authors identified 2,184 patients for analysis. Tests assessing noninferiority indicated Seamens' Sign was noninferior to all criteria ($p < 0.001$) except for the Cornell criterion for women ($p=0.98$). Seamens' Sign had 90% (0.81–1.00) inter-rater agreement, the highest of all criteria (attributed to its quick application and ease of use). This compared with Sokolow-Lyon 1 and Sokolow-Lyon 2 had inter-rater agreement of 65% (0.40–0.91) and 87% (0.75–1.00), respectively, while Cornell criteria for men and women had inter-rater agreements of 76% (0.56–0.96) and 79% (0.62–0.97), respectively. Seamans' Sign also had excellent specificity for confirming LVH (92%).

Editor's comments: This was a retrospective study at a single center, limiting its generalizability. Further studies are warranted to confirm the test characteristics of Seamans' Sign in other populations. ■

Physical Therapy for Degenerative Meniscal Tears

Take-home point: Physical therapy (PT) was noninferior to arthroscopic partial meniscectomy (APM) for patient-reported knee function in this 5-year follow-up series.

Citation: Noorduyn JCA, van de Graaf VA, Willigenburg NW, et al. Effect of physical therapy vs arthroscopic partial meniscectomy in people with degenerative meniscal tears: five-year follow-up of the ESCAPE randomized clinical trial. *JAMA Netw Open*. 2022;5(7):e2220394.

Relevance: Surgical intervention for orthopedic issues involves considerable risk and expense. It's important to verify that the benefits of operative intervention justify these risks.

Study summary: This was a 5-year follow-up assessment of patients in the ESCAPE (Early Surgery versus Conservative Treatment with Optional Delayed Meniscectomy for Patients over 45 years with nonobstructive meniscal tears) study, a multicenter RCT comparing arthroscopic partial meniscectomy with exercise-based physical therapy (16 x 30-minute sessions). The initial ESCAPE trial compared PT with APM, with both initiated within 2 weeks of randomization in a 1:1 ratio, reported in 2017. Those results indicated PT was noninferior to APM at 2 years.

The authors reviewed the initial patient set. After 5 years, 278 of the original participants (87.1%) completed the follow-up (139 in each group). They found that PT is noninferior to APM with respect to knee function during 5 years of follow-up in patients with a degenerative meniscal tear. They found comparable rates of progression of radiographic and symptomatic OA between both treatments. Patients maintained the improvements in knee function experience in the initial study at the 5-year follow-up.

Editor's comments: Thirty-two percent of the conservatively managed patients from the original study underwent APM within the first year of follow-up. COVID-19 hindered aspects of the review process for the present study, accounting for the loss to follow-up numbers. It is important to note that subjects of the study had degenerative meniscal defects and that patients with traumatic tears were not included. ■

ST Elevation MI and ACS Treatment in Rural Settings

Take-home point: The management of rural acute coronary syndromes [MORACS] intervention reduced the proportion of missed ST elevation MI (STEMI) and improved the rates of primary reperfusion therapy.

Citation: Dee F, Savage L, Leitch J, et al. Management of acute coronary syndromes in patients in rural Australia – The MORACS Randomized Clinical Trial. *JAMA Cardiol*. 2022;7(7):690-698.

Relevance: "Time is muscle" in the setting of myocardial infarction. For practitioners in rural settings where the full array of definitive treatments may not be available, timely identification of STEMI (and other forms of acute coronary syndrome [ACS]) is critical to ensuring patients are transferred to centers with capabilities for percutaneous intervention (PCI).

Study summary: This prospective multisite cluster randomized clinical trial aimed to evaluate the effectiveness of a centralized ACS diagnostic support system (MORACS) in rural Australia. The MORACS team comprised three specialist clinical nurses with expertise in ECG interpretation. They were contacted when patients presented with suspected ACS via text, initiating real-time review of ECGs and troponin to diagnose STEMI and decisions regarding patient transfers for angiography.

The investigators included 7,474 ED patients with suspected ACS over the study period. Missed STEMI occurred in 27 of 77 patients (35%) in the usual care hospitals and 0 of 46 (0%) in MORACS hospitals ($p < .001$). Among patients eligible for primary reperfusion, 48 of 75 (64%) in the usual care group and 36 of 36 (100%) in the MORACS group received reperfusion therapy ($p < .001$). Within the usual care group, patients with a missed STEMI diagnosis had a mortality of 25.9% (n=7 of 27) compared with 2.0% (n=1 of 51) with a correct diagnosis (relative risk, 13.2; 95% CI, 1.71-102.00; $p = .001$).

Editor's comments: Generalization of patient population is limited, as the study was set in rural Australia. However, these dramatic results strongly suggest that rural centers with limited expertise and capability for managing STEMI benefit (as do their patients) from assistance from remote specialists. To ensure more uniform care for patients with coronary occlusion presentations, rural acute care facilities should consider leveraging technology for real-time collaboration with their affiliated referral centers. ■

Do You Routinely Follow Up on Radiology Report Recommendations?

Take-home point: Following up on radiology report recommendations is important for ensuring patient safety and reducing malpractice risk.

Citation: White T, Arronson M, Sternberg S, et. al. Analysis of radiology report recommendation characteristics and rate of recommended action performance. *JAMA Network Open*. 2022;5(7): e2222549.

Relevance: Radiology reports often contain detailed comments that can be easily overlooked and disregarded. Doing so, however, may increase risks for patients and clinicians alike.

Study summary: This was a quality improvement study examining radiology reports generated from investigations performed on patients at a large primary care practice based in Massachusetts. Twenty common radiology examinations were identified, including CT, plain radiography, and MRI scans. Only radiology reports with a radiologist's recommendation (ie, recommendations field was not blank) were included in the final analysis. The authors divided the response to the follow-up recommendations into three categories: 1) recommended action was performed; 2) there was documented disagreement by the referring physician with the recommended action, in which case the action was classified as closed; and 3) the patient had died or there was documented patient refusal.

The authors found 4,911 eligible imaging studies with 532 reports (10.8%) generated by the radiology department, containing a specific recommendation. Recommendations were taken into consideration and acted upon accordingly 87.4% of the time. In 67.6% of all cases, the referring clinician felt that the recommended follow-up was unnecessary in the clinical context and the referring clinician took alternative actions (eg, referred patient to an endocrinologist in lieu of ordering an ultrasound to further characterize a thyroid nodule).

Loop closure on recommendations was less likely when the recommendations were not indicated separately (ie, recommendations were included in the body of the radiology report).

Editor's comments: As this was a hospital-based study, many radiology reports were for advanced imaging studies (eg, MRI, CT) that are unlikely to be ordered by urgent care clinicians. Nevertheless, ensuring that radiology recommendations are acknowledged and acted upon appropriately remains an important strategy to mitigate risk to patients and providers. ■

Subsequent Motor Vehicle Crash After a Syncopal Episode

Take-home point: Patients visiting the ED with a first episode of syncope had similar risks for a motor-vehicle crash (MVC) as matched control ED patients.

Citation: Staples J, Erdelyi S, Merchant K, et al. Syncope and the risk of subsequent motor vehicle crash: a population-based retrospective cohort study. *AMA Intern Med*. 2022 Aug 1:e222865.

Relevance: Practices for counseling patients about driving—and restricting driving—after a syncopal incident are variable and not based on extensive evidence.

Study summary: This was a population-based retrospective observational cohort study from British Columbia, Canada. The study cohort was based on administrative data of patients with one or more ED visits with a discharge diagnosis of syncope vs a control group of all patients who visited the ED. For patients with recurrent presentations, only the first visit was included in order to avoid oversampling.

The authors included 43,589 individuals (9,223 syncope patients and 34,366 age- and sex-matched controls) in the study. Most patients in the syncope group were judged to have definite or likely syncope, with the most common causes being vasovagal and orthostatic. There was no significant difference in MVC risk between the groups during the 30-day follow-up period (9.2% vs 10.1%). Among drivers with a commercial driver's license, vehicle crashes were no more common among the syncope group than among the control group. The hazard of MVC was similar between syncope and control groups in all examined time intervals. Crash risks among patients with syncope and control patients both exceeded rates of MVC of the general population.

Editor's comments: The authors' identification of syncope did not include more specific diagnoses that have the potential to cause syncope (eg, ventricular tachycardia, cardiac arrest, and others). Patients were followed for only 30 days after their ED visit. The authors also lacked data regarding levels of road use by subjects. The results should be considered with the caveat that there may be multifactorial reasons for MVCs in patients that are discharged from the ED. ■