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## 5 Emergency Department Series of Acute Conditions of the Scrotum

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**Introduction:** Acute scrotal pain comprises 0.5% of annual emergency department (ED) visits. Determining the etiology of acute scrotal pathology by history, exam and laboratory studies alone can be challenging. Radiology department-performed sonography (RDPS) is the imaging test of choice for scrotal pathology but may be time consuming and result in treatment delays and poorer outcomes. If accurate, ED-performed sonography (EDPS) may shorten time to diagnosis and treatment and result in quicker disposition and improved outcomes for scrotal pathology.

**Methods:** This retrospective cohort study evaluated the accuracy of EDPS for predicting the presence of scrotal pathology as established by RDPS. A composite endpoint consisting of testicular or testicular appendix torsion, epididymoorchitis, scrotal abscess or mass, varicocele, spermatocele, and epididymal cyst was used to define scrotal pathology. Subjects included a convenience sample of all patients presenting to our ED with acute atraumatic scrotal pain who received both EDPS and RDPS during a five-year period.

**Results:** During the study period 146 patients underwent EDPS, 49 of whom went on to receive RDPS. The sensitivity and specificity of EDPS for recognizing radiographic pathology as determined by RDPS were 0.93 (95% CI 0.81-0.98) and 0.33 (95% CI 0.02-0.87).

**Conclusions:** This study demonstrated relatively high sensitivity and low specificity for EDPS in predicting scrotal pathology. The low specificity in this study may have resulted from a selection bias affecting which patients underwent RDPS. These results indicate that all patients with abnormal EDPS should undergo RDPS. However, the low specificity of this study prevents conclusions regarding treatment of patients with negative EDPS. We conclude that EDPS is not currently accurate enough to recommend its use as a final diagnostic modality for patients presenting with a painful scrotum.

## 6 Availability of Standardized Chest Pain Order Sheet Improves Compliance with American College of Cardiology and American Heart Association Guidelines for the Treatment of Acute Coronary Syndromes

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**Objective:** The American College of Cardiology (ACC) and the American Heart Association (AHA) publish guidelines for the treatment of specific conditions within the spectrum of acute coronary syndromes (ACS). We hypothesized that, when available, implementation of a standardized chest pain order sheet for treatment of patients with ACS in our emergency department would improve adherence to the ACC/AHA guidelines.

**Methods:** This was an IRB-approved prospective observational study in an urban emergency department with 46,000 visits per year and an affiliated emergency medicine residency training program. The study involved three phases. During the first phase (3/04-9/04), charts of patients with the complaint of chest pain were reviewed for compliance with ACC/AHA guidelines. Two persons reviewed charts during a brief training session. To improve agreement between reviewers, five charts were reviewed in a trial run and again weekly. A third reviewer acted in cases of disagreement. In the second phase (9/04-12/04), a chest pain order sheet based on ACC/AHA guidelines was made available for physicians to use in evaluation and treatment of patients presenting with chest pain. The third phase (5/06-12/06) the chest pain order sheet was not available for physician use due to technical and logistical misadventures. In a similar fashion, charts were reviewed for compliance with guidelines. A kappa score for inter-observer agreement, Fisher's exact and Chi-Square tests were used to compare groups. In a retrospective review, charts were evaluated for continued compliance with guidelines in an analogous fashion.

**Results:** The kappa for inter-observer agreement was 0.91 (95% CI:0.883 to 0.990) Patients Administered Medication / Patients Eligible to Receive Medication ASA Beta-Blocker Heparin 2B, 3A GP-inhibitor Phase 1 213/221 (96%) 166/221 (75%) 55/221 (70%) 4/10 (40%) (no order sheet available) Phase 2 117/117 (100%) 112/117 (96%)\* 110/117 (94%)\* 4/6 (67%) (with use of order sheet) Phase 2 205/214 (96%) 163/214 (76%) 135/214 (63%) 3/7 (43%) (without use of order sheet) Phase 3 194/204 (95%) 147/199 (74%) 138/201 (68%) 3/9 (33%) (without use of order sheet) (\* P,0.001 compared to Phase 1)

**Conclusions:** The use of a standardized chest pain order sheet was associated with improved adherence to the ACC/AHA guidelines for administration of beta-blockers and heparin in ACS but returned to baseline when the guideline was no longer available. Limitations of this study include, but are not limited to, non-randomization and selection bias.

## 7 A Look at Pre-Hospital Practice Patterns Following the Introduction of Drug-Facilitated Intubation

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