ABDOMINAL EXAMINATION

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Derivation of a clinical guideline for the assessment of nonspecific abdominal pain: the Guideline for Abdominal Pain in the ED Setting (GAPEDS) Phase 1 Study.

OBJECTIVE: The purpose of this study was to identify a clinical guideline for the evaluation of nonspecific abdominal pain (NSAP) using history, physical examination, laboratory analysis, acute abdominal series (AAS) radiographs, and nonenhanced helical computed tomography (NHCT) clinical predictor variables (CPVs). SETTING: The setting of this study was at an urban emergency department (ED) with 70,000 yearly visits. METHODS: This is an institutional review board-approved, prospective, observational study. The primary outcome variable was urgent intervention (UI), defined as a diagnosis requiring surgical or medical treatment to prevent death or major morbidity. Subjects underwent prompted history, physical, laboratory studies, AAS, and NHCT and were followed up to 6 months for ultimate diagnosis and outcome. CPVs were subjected to classification and regression tree analysis. RESULTS: One hundred sixty-five subjects were analyzed. Thirteen percent of subjects required UI within 24 hours of presentation; an additional 34% underwent elective interventions that mitigated morbidity or mortality. Four guideline models were generated. Model 1 consisted of history and physical, with a sensitivity of 25%, a specificity of 92%, a positive likelihood ratio of 3.17, and a negative likelihood ratio of 0.81. Model 2 consisted of model 1 with laboratory, with a sensitivity of 39%, a specificity of 88%, a positive likelihood ratio of 3.25, and a negative likelihood ratio of 0.69. Model 3 consisted of model 2 with AAS, with a sensitivity of 56%, a specificity of 81%, a positive likelihood ratio of 2.94, and a negative likelihood ratio of 0.54. Model 4 comprised all inputs, including NHCT, with a sensitivity of 92%, a specificity of 90%, a positive likelihood ratio of 9.2, and a negative likelihood ratio of 0.089. NHCT was the single most accurate CPV for UI. CONCLUSIONS: No clinical guideline was identified exclusive of NHCT that possessed adequate sensitivity for exclusion of UI. NHCT is a rational choice for decision support in the evaluation of NSAP and is likely the single most useful diagnostic adjunct available to augment the clinical evaluation.
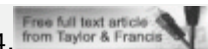
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Accuracy of abdominal examination in the diagnosis of non-ruptured abdominal aortic aneurysm.

BACKGROUND: Early detection of abdominal aortic aneurysms (AAA) is paramount to reducing the very high mortality rates associated with rupture. This literature review was undertaken to assess the accuracy of abdominal examination in the detection of

non-ruptured AAA. METHOD: A comprehensive literature search was performed to retrieve prospective studies comparing the accuracy of physical examination (PE) in the diagnosis of non-ruptured AAA confirmed by the gold standard, ultrasonography. RESULTS: The sensitivity of PE in the diagnosis of AAA ranges from 33% to 100%, the specificity from 75% to 100%, and the positive predictive value from 14% to 100%. Detection rates increase with increasing aortic diameter, increasing age, male sex, presence of recognisable risk factors, examination by an experienced clinician, PE directed specifically towards the detection of AAA, prevalence of AAA in study population, and thin patients. CONCLUSION: Clinical examination cannot be relied upon to exclude AAA. Larger aneurysms are usually palpable and more likely to be detected on examination especially in thin patients. Due to the poor sensitivity of PE together with the high sensitivity and specificity of ultrasound, obese patients in whom there is difficulty palpating an aneurysm, despite a history suggestive of possible non-ruptured AAA, should be referred for ultrasound examination to assist with the diagnosis.

3: Scand J Prim Health Care. 2000 Jun;18(2):99-104. Free full text article from Taylor & Francis   Links

GPs' ability to diagnose dyspepsia based only on physical examination and patient history.

OBJECTIVES: To evaluate the diagnostic value of the general practitioner's (GP's) unaided working diagnoses in dyspepsia. To compare the proportions of final diagnoses and the characteristics of patients who would have been referred to gastroscopy or to empirical drug treatment. DESIGN: Clinical study. PATIENTS: 400 consecutive dyspeptic patients consulting their GPs. MAIN OUTCOME MEASURES: Sensitivity, specificity and positive and negative predictive values (PV+ and PV-) were calculated for the GP's working diagnoses in cases of dyspepsia. The outcome of his/her decisions on how to manage dyspeptic patients was also evaluated. RESULTS: Gastroesophageal reflux disease would have been diagnosed accurately, with a sensitivity of 0.59, specificity 0.83, PV+ 0.43 and PV- 0.90. GPs diagnosed functional disorders with a sensitivity of 0.43, specificity 0.69, PV+ 0.56 and PV- 0.54; peptic ulcer with a sensitivity of 0.37, specificity 0.83, PV+ 0.28 and PV- 0.88; and malignancy with a sensitivity of 0.13, specificity 0.97, PV+ 0.08 and PV- 0.98. Patients who would have been referred to gastroscopy had more often lost weight (p = 0.01), suffered from abdominal pain (p=0.03) and from symptoms partly suggesting irritable bowel syndrome (p< or =0.03). CONCLUSIONS: The clinical diagnosis of the causes of dyspepsia is unreliable. In selecting patients for gastroscopy, more attention should be paid to risk factors such as age, use of non-steroidal anti-inflammatory drugs and history of previous peptic ulcer.

4: Arch Intern Med. 2000 Mar 27;160(6):833-6. FULL TEXT AT ARCHIVES OF INTERNAL MEDICINE   Links

The accuracy of physical examination to detect abdominal aortic aneurysm.

BACKGROUND: Abdominal palpation during physical examination is an important means of detecting abdominal aortic aneurysm (AAA), but limited information is available on its accuracy. METHODS: Two hundred subjects (aged 51-88 years), 99 with and 101 without AAA as determined by previous ultrasound, each underwent physical examination of the abdomen by 2 internists who were blinded to each other's findings and to the ultrasound diagnosis. RESULTS: The overall accuracy of abdominal palpation for detecting AAA was as follows: sensitivity, 68% (95% confidence interval [CI], 60%-76%); specificity, 75% (95% CI, 68%-82%); positive likelihood ratio, 2.7 (95% CI, 2.0-3.6); negative likelihood ratio 0.43 (95% CI, 0.33-0.56). Interobserver pair agreement for AAA vs no AAA between the first and second examinations was 77% (kappa = 0.53). Sensitivity increased with AAA diameter, from 61% for AAAs of 3.0 to 3.9 cm, to 69% for AAAs of 4.0 to 4.9 cm, 72% for AAAs of 4.0 cm or larger, and 82% for AAAs of 5.0 cm or larger. Sensitivity in subjects with an abdominal girth less than 100 cm (40-in waistline) was 91% vs 53% for girth of 100 cm or greater (P<.001). When girth was 100 cm or greater and the aorta was palpable, sensitivity was 82%. When girth was less than 100 cm and the AAA was 5.0 cm or larger, sensitivity was 100% (12 examinations). Factors independently associated with correct examination findings included AAA diameter (odds ratio [OR], 1.95 per centimeter increase; 95% CI, 1.06-3.58); abdominal girth (OR, 0.90 per centimeter increase; 95% CI, 0.87-0.94); and the examiner's assessment that the abdomen was not tight (OR, 2.68; 95% CI, 1.17-6.13). CONCLUSIONS: Abdominal palpation has only moderate overall sensitivity for detecting AAA, but appears to be highly sensitive for diagnosis of AAAs large enough to warrant elective intervention in patients who do not have a large girth. Abdominal palpation has good sensitivity even in patients with a large girth if the aorta is palpable.

[Physical examination—rebound tenderness]

Rebound tenderness is generally practiced in the diagnosis of acute abdominal pain. It is a test that inflicts much discomfort to the patient. Literature data derived from reports assessing the reliability of the diagnosis of acute appendicitis indicate a sensitivity of 0.78-0.91 (pooled: 0.91) and a specificity of 0.48-0.60 (pooled: 0.60) of rebound tenderness. It would appear that rebound tenderness is a test of little specificity (leading to many false positive results) and that it has very little additional value, particularly in the presence of local tenderness and/or rigidity in patients with acute abdominal pain.

Usefulness of history-taking, physical examination and diagnostic scoring in acute renal colic.

OBJECTIVE: The accuracy of the clinical diagnosis of acute renal colic was studied in connection with the survey of acute abdominal pain by the Research Committee of the World Organization of Gastroenterology. The diagnostic efficiency of various clinical symptoms, signs and tests have not previously been analyzed in the diagnosis of acute renal colic, and therefore the study is of potential importance. METHODS: 1,333 patients presenting with acute abdominal pain were included in the study. The clinical findings in each patient were recorded in detail, using a predefined structured data collection sheet, and the collected data were compared with the final diagnoses of the patients. Twenty-three clinical history variables, 14 clinical signs and 3 tests were evaluated in a single variable and multivariate analysis. RESULTS: In multivariate logistic regression analysis, the most significant predictors of acute renal colic were urine, tenderness, renal tenderness, duration of pain and appetite. The sensitivity in detecting acute renal colic was 0.84, with a specificity of 0.99 and an efficiency of 0.98. To sum up the contributions of most significant diagnostic factors, a diagnostic score (DS) was built. This score incorporated independent variables, e.g. urine, tenderness, renal tenderness, duration of pain, appetite and sex. The DS reached a sensitivity of 0.89 in detecting acute renal colic, with a specificity of 0.99 and an efficiency of 0.99. CONCLUSIONS: The results clearly show that acute abdominal pain with normal appetite, short duration of pain ($\leq$12 h), loin or renal tenderness and hematuria (erythrocytes >10) are indicative of acute renal colic, and therefore, in this particular clinical question, careful history-taking and physical examination are of utmost importance. In our study, the DS system performed well considering the simple nature of its structure. However, to minimize the risk to the patient, we recommend that the DS is used only as an aid in decision-making when there is uncertainty as to the diagnosis of acute renal colic and the need for immediate treatment. In addition, the possibility of obstructive pyelonephritis in combination with renal colic should be considered clinically.

Abdominal aortic aneurysm screening in elderly males with atherosclerosis: the value of physical exam.

The purpose was 1) To assess the prevalence of abdominal aortic aneurysms (AAA) in elderly males with atherosclerosis and 2) to evaluate the value of physical exam (PE) by a vascular surgeon in detecting AAA. A total of ninety-six males older than 55 years referred to vascular surgery clinic with atherosclerotic disease were screened prospectively with PE by a vascular surgeon, followed by ultrasonography (US). Atherosclerosis was documented by ankle brachial index and duplex US. Patients who had recently undergone a vascular procedure, aortography, laparotomy, abdominal computed tomography, or US were excluded. Mean age was 67 years. Patients were 67 per cent Caucasian, 32 per cent black, and 1 per cent Hispanic. Presenting

complaints were related to claudication (83%), carotid disease (19%), both (3%), and subclavian stenosis (1%). Patient characteristics included cigarette smoking (85%), hypertension (67%), cardiac disease (51%), diabetes (45%), stroke (18%), and chronic obstructive pulmonary disease (8%). One (1%) 3.7 cm AAA was detected by US. Sensitivity of PE was 100 per cent and specificity 92 per cent. Twenty-two (23%) patients were too obese for us to feel the aortic pulse. Screening cost was $14,250. The prevalence of AAA in this population is very low. AAA screening should be reserved for patients with a positive PE or who are too obese for the examiner to feel the aortic pulse.

Assessment of peritonism in appendicitis.

The aim of this study was to evaluate the accuracy of different methods of demonstrating right iliac fossa peritonism in appendicitis. The methods used were cat's eye symptom (pain on going over a bump in the road), cough sign, right iliac fossa tenderness, percussion tenderness, rebound tenderness and guarding. A series of 100 consecutive patients with a median age of 25 years (range 4-81 years), presenting with right iliac fossa pain were studied prospectively; the male:female ratio was 39:61. In all, 58 patients underwent operation, 44 had appendicitis confirmed on histology. Fourteen patients had a normal appendix removed; 11 were women aged between 16 and 45 years. Cat's eye symptom and cough sign were sensitive indicators of appendicitis (sensitivity 0.80 and 0.82, respectively), but were not specific (specificity 0.52 and 0.50, respectively) and therefore inaccurate (accuracy 64%). Percussion tenderness was less sensitive (sensitivity 0.57) but more specific (specificity 0.86). Rebound tenderness proved to be sensitive (sensitivity 0.82), specific (specificity 0.89) and accurate (accuracy 86%). Thus, rebound tenderness had a positive predictive value of 86% compared with 56% and 57% for cough sign and cat's eye symptom, respectively. In the difficult diagnostic group of young women, the positive predictive value of rebound tenderness was 88% compared with 58% and 56% for cat's eye symptom and cough sign. Appendicitis remains a difficult diagnosis, particularly in young women. Rebound tenderness still has an important role to play in clinical assessment.

Contributions of history-taking, physical examination, and computer assistance to diagnosis of acute small-bowel obstruction. A prospective study of 1333 patients with acute abdominal pain.

BACKGROUND: The accuracy of clinical diagnosis of acute small-bowel studied in connection with the survey of acute abdominal pain by the Research Committee of the World Organization of Gastroenterology (OMGE). Criteria for inclusion and the

diagnostic criteria of this prospective study were those set out by the OMGE Research Committee. METHODS: The clinical findings in each patient were recorded in detail on a pre-defined structured data collection sheet, and the collected data were compared with the final diagnosis of patients. RESULTS: The most efficient symptoms in the diagnosis of acute small-bowel obstruction were previous abdominal surgery (relative risk (RR) = 12.1) and type of pain (colic/intermittent versus steady) (RR = 2.4). The most efficient clinical tests were abdominal distension (yes versus no) (RR = 13.1) and bowel sounds (abnormal versus normal) (RR = 9.0). The sensitivity of the clinical decision was 0.75, with a specificity of 0.99 and an efficiency of 0.98. The computer-based diagnostic score reached a sensitivity of 0.87 with a specificity of 0.95 and an efficiency of 0.95. CONCLUSIONS: Acute abdominal pain with distension, abnormal bowel sounds, and previous abdominal surgery are indicative of a small-bowel obstruction. A computer-based diagnostic score increases the sensitivity and usefulness index of the diagnosis of acute small-bowel obstruction in comparison with clinical decision alone.