CHEST PAIN IN THE EMERGENCY DEPARTMENT: ADEQUACY OF HISTORY-TAKING AND DOCUMENTATION

by LTC FRANK T. FLANNERY, MC, USA, RICHARD L. GRANVILLE, MD, JD, LEE GOLDMAN, MD, MPH, THOMAS H. LEE, MD, THOMAS O. STAIR, MD, ROBERT J. ROTHSTEIN, MD, MICHAEL ROLNICK, MD, AND COL JAMES G. ZIMMERLY, MC, USA (RET.)

From the Department of Medicine, Brigham and Women's Hospital, the Departments of Emergency Medicine, Georgetown University School of Medicine and Suburban Hospital, Bethesda, Maryland, and the Department of Legal Medicine, Armed Forces Institute of Pathology

The goal of the medical record is to facilitate continuity and quality of care through serial documentation of clinical presentation, diagnosis, treatment and response. Incomplete and illegible entries may frustrate the achievement of this goal.[1]

Despite the recent advances in diagnostic technology, the patient's history often remains the preeminent source of diagnostic information.[2] Chest pain patients reporting to the emergency department offer no exception, and an evaluation of the pertinent history represents one of the primary bases on which to premise a decision regarding admission or discharge.[3] The medicolegal importance of adequate history-taking and documentation is highlighted by the fact that, in a ten-year study, 19.7 percent of total dollar losses in emergency medicine claims related to the diagnosis and treatment of myocardial infarction.[4]

Successful defense of a malpractice suit for negligent discharge of a chest pain patient may well depend upon a showing that an adequate history was obtained, and that, based upon this and other factors, a reasonable discharge decision was made.[5]

Empiric data as to what reflects adequate history-taking and documentation is, however, difficult to find. To obtain such data, a questionnaire was devised containing 21 items of clinical history, drawn from standard medical text books, which could be obtained from a hypothetical 50-year-old chest pain patient.[6] The purpose was to query practicing physicians as to what they considered to be essential in their everyday history-taking and documentation involving chest pain patients. The assumption was that a consensus position regarding certain historical items would suggest that adequate evaluation should include such items. For purposes of this exercise, it was assumed that the patient had a nondiagnostic electrocardiogram.

Historical items included the location of the pain, its duration, any radiation, and any history of a myocardial infarction (*See Appendix I*). Two columns were printed to the right of these items. In the first column, respondents were to indicate the importance of securing a response from this hypothetical patient regarding the item. A scale of zero to five was used, with five indicating most important, one indicating least important, and zero indicating no importance. A second column was provided with a similar scale to allow respondents to indicate those historical items that should be recorded.

On the reverse side of the questionnaire, respondents were asked to list both the five most important and the five least important items of history (*See Appendix II*). Respondents were then asked to consider how often an electrocardiogram should be performed on a hypothetical subset of patients, both male and female, over 30 years of age who presented to the emergency department with a chief complaint of chest pain. It was assumed, for the purposes of this hypothetical subset, that there was neither an obvious history of trauma nor radiographic evidence of pneumonia or a pneumothorax.

Finally, the respondents were asked to report the type of internship training (first postgraduate year) that they had received, and any residency training beyond the first postgraduate year (e.g., Emergency Medicine, Internal Medicine). They were also requested to indicate the total years of postgraduate training that they had received, and any specialty board certification.

Three thousand questionnaires were mailed to members of the American College of Emergency Physicians (ACEP) who practice in hospital emergency departments. An endorsing cover letter from the then President of ACEP accompanied each questionnaire and encouraged participation. The initial mailing was followed by a second mailing to those who failed to respond.

A total of 1529 responses were received, and 59 were excluded for reasons such as incomplete or illegible data. The study population of 1470 physicians included 982 (66.8 percent) with three or more years of postgraduate medical training, and 488 (33.2 percent) with less than three years training. Eight hundred and four respondents (54.7 percent) were Diplomates of the American Board of Emergency Medicine, while 172 (11.7 percent) were Diplomates of the American Board of Family Practice and 159 (10.8 percent) were Diplomates of the American Board of Internal Medicine. Seventy-five respondents (5.1 percent) were board certified in both Family Practice and Emergency Medicine, 69 (4.7 percent) in both Internal Medicine and Emergency Medicine, and two were Diplomates of all three boards. Other specialties represented included General Surgery (41 or 2.8 percent) and Pediatrics (23 or 1.6 percent). Almost a third of respondents (443 or 30.1 percent) were not board certified in any specialty. A demographic analysis of members to whom questionnaires were mailed revealed that respondents and nonrespondents were similar in terms of gender, training, and geographical location.

In response to the first question regarding items of history that "should be **asked**", the ten most important items selected most frequently by the respondents were (in descending order):

1) past history of a myocardial infarction or angina; 2) time elapsed since chest pain began; 3) quality of pain (e.g., pressure-like or sharp); 4) principal location of pain; 5) comparison of this pain with past anginal pain; 6) presence of diaphoresis; 7) radiation of pain; 8) presence of dyspnea; 9) risk factors (e.g., smoking, hypertension, family history); 10) duration of longest episode of chest pain that prompted the current visit

Regarding historical items that "should be **recorded**", the ten most important items selected most frequently were (in descending order): 1) past history of a myocardial infarction or angina; 2) quality of pain; 3) time elapsed since chest pain began; 4) principal location of pain; 5) radiation of pain; 6) presence of diaphoresis; 7) presence of dyspnea; 8) response to therapy; 9) comparison of this pain with past anginal

pain; 10) risk factors. In response to the second question, the single most important item of history selected most frequently to be both ascertained and recorded was a past history of a myocardial infarction. With regard to specialty differentiation, eight categories, some of which overlapped, were established for respondents: four categories consisted of Diplomates of the American Board of Emergency Medicine, Internal Medicine, Family Practice, and Surgery; a fifth consisted of physicians who were not board certified in Emergency Medicine; a sixth category consisted of those who were not board certified in any specialty; a seventh category was those physicians with less than three years of postgraduate education; and an eighth category consisted of those with postgraduate education of three years or greater. Examination of the categorical data among specialists and nonspecialists, regardless of years of training, revealed fairly close agreement on the relative importance of recording certain historical items.

When asked the five "most important" items of history, respondents listed these five items most frequently: 1) quality of pain; 2) principal location of pain; 3) past history of a myocardial infarction or angina; 4) duration of longest episode of chest pain that prompted the visit; and 5) risk factors such as smoking, hypertension, and family history.

The five "least important" historical items listed most frequently were: 1) presence of dizziness; 2) presence of palpitations; 3) presence of orthopnea; 4) relation of pain to position; and 5) relation of pain to palpation of chest.

Finally, the questionnaire described a patient over 30 years of age who presented to the emergency department with a chief complaint of chest pain, without an obvious explanation such as trauma or an abnormal radiograph revealing a pneumothorax or pneumonia. In response to the question of the frequency for the performance of an electrocardiogram, the responses, when averaged, indicated that the respondents would perform an electrocardiogram 87.8 percent of the time.

Although respondents possessed diverse specialty training backgrounds, there was broad agreement as to which historical items should be obtained from patients and documented. Regardless of specialty background, the number of years of postgraduate training, or board certification status, both Diplomates of the American Board of Emergency Medicine and the other seven individual categories of respondents ranked most frequently the following five items as the most important to document: 1) past history of a myocardial infarction or angina; 2) time elapsed since chest pain began; 3) location of pain; 4) quality of pain; and 5) radiation of pain.

A similar, but somewhat less striking, agreement was found with regard to which items should be asked by a practitioner.

Overall, respondents most frequently ranked these historical items as the least important to record on the medical record: 1) presence of dizziness; 2) presence of palpitations; 3) presence of orthopnea; 4) relation of the pain to position; and 5) frequency of the pain.

In conclusion, both Diplomates of the American Board of Emergency Medicine and other emergency medicine practitioners with diverse backgrounds and training consider the collection and documentation

of certain historical items to be essential in making a determination whether to discharge a chest pain patient. Moreover, all categories of respondents agree as to which specific five items are the most important items to record. There is also very close agreement among these specialists as to what constitutes the ten most important items.

APPENDIX I

In a 50-year old male chest pain patient with a non-diagnostic EKG, the following items of history could be obtained in determining whether to admit a patient to rule out a myocardial infarction.

In Column 1, which of the characteristics listed do you consider important to ask the patient?

In Column 2, which characteristics should appear on a chart to constitute an acceptable medical record?

IN EACH COLUMN, CIRCLE THE NUMBER WHICH YOU BELIEVE REFLECTS THE IMPORTANCE OF THE ITEM, WITH 0 INDICATING NO IMPORTANCE, 1 INDICATING LEAST IMPORTANCE, AND 5 INDICATING HIGHEST IMPORTANCE.

	COLUMN 1 SHOULD BE ASKED						**COLUMN 2** SHOULD BE RECORDED					
a. Time elapsed since chest pain began	0	1	2	3	4	5	0	1	2	3	4	5
b. Duration of longest episode of chest pain that prompted this visit	0	1	2	3	4	5	0	1	2	3	4	5
c. Principal location of pain	0	1	2	3	4	5	0	1	2	3	4	5
d. Radiation of pain	0	1	2	3	4	5	0	1	2	3	4	5
e. Quality of pain (e.g., pressure-like or sharp)	0	1	2	3	4	5	0	1	2	3	4	5
f. Presence of nausea	0	1	2	3	4	5	0	1	2	3	4	5
g. Presence of vomiting	0	1	2	3	4	5	0	1	2	3	4	5
h. Presence of diaphoresis	0	1	2	3	4	5	0	1	2	3	4	5
i. Presence of dyspnea	0	1	2	3	4	5	0	1	2	3	4	5
j. Presence of dizziness	0	1	2	3	4	5	0	1	2	3	4	5
k. Past history of M.I. or angina	0	1	2	3	4	5	0	1	2	3	4	5
l. Comparison of this pain with past anginal pain	0	1	2	3	4	5	0	1	2	3	4	5
m. Risk factors (e.g., smoking, hypertension, family history)	0	1	2	3	4	5	0	1	2	3	4	5
n. Relation of pain to position	0	1	2	3	4	5	0	1	2	3	4	5
o. Relation of pain to exertion	0	1	2	3	4	5	0	1	2	3	4	5
p. Relation of pain to palpation	0	1	2	3	4	5	0	1	2	3	4	5
q. Precipitating factors	0	1	2	3	4	5	0	1	2	3	4	5
r. Response to therapy (e.g., antacids, nitro)	0	1	2	3	4	5	0	1	2	3	4	5
s. Frequency of pain	0	1	2	3	4	5	0	1	2	3	4	5
t. Presence of orthopnea	0	1	2	3	4	5	0	1	2	3	4	5
u. Presence of palpitations	0	1	2	3	4	5	0	1	2	3	4	5
v. Other (please list)												
_____	0	1	2	3	4	5	0	1	2	3	4	5
_____	0	1	2	3	4	5	0	1	2	3	4	5
_____	0	1	2	3	4	5	0	1	2	3	4	5

APPENDIX II

2. What do you consider to be the five most important items of history [listed in Appendix I]?

   a. _____
   b. _____
   c. _____
   d. _____
   e. _____

   What do you consider to be the five least important items of history [listed in Appendix I]?

   a. _____
   b. _____
   c. _____
   d. _____
   e. _____

3. Consider all the patients, both male and female, over age 30, who present to the Emergency Department with a chief complaint of chest pain (assuming there is no obvious history of trauma or an abnormal radiograph revealing pneumothorax or pneumonia, for instance). Please state in what percentage of these cases you would perform an EKG:_____%

4. Please complete for statistical purposes only:

   a. Type of Internship (First Postgraduate Year): _____.
   b. Type of Residency beyond First Postgraduate Year (e.g., Emergency Medicine, Internal Medicine): _____.
   c. Total Years of Postgraduate Training, including Internship: _____ .
   d. Board Certified in: _____.

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