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Case Presentation—the Key Which Unlocks the Diagnosis

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Abstract:
The student of medicine spends a lifetime presenting patient cases to others in a variety of formats: communicating to other physicians in the emergency department and other parts of a medical center, on rounds, in handoffs, in formal conferences, and in electronic medical records. Presentations should be organized, yet succinct with sufficient detail to help patients who are the main beneficiaries. The ability to present well can be taken to the bedside or in clinic with the same organizational approach and can focus a detailed physical examination of the culprit organ system which greatly assists diagnosis. The satisfaction of unraveling a diagnoses is potentially a lifelong hedge against physician burnout.

Key Words:
Organized Case Presentations, Expert Diagnoses

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The student of medicine spends a lifetime presenting patient cases to others. Learning to present well ordinarily has a very rough beginning and likely peaks as a senior resident or sub-specialty fellow. After I had been an attending physician on Internal Medicine or on the consultation service for Infectious Diseases and had listened to thousands, I began to ponder why case presentations are such a mandatory and integral part of the training of young physicians. I came up with many of the usual explanations:

1. To communicate to other healthcare workers about a patient in the emergency department (ED), an intensive care unit (ICU), the hospital wards, or a clinic setting in a clear, concise fashion. Such a presentation should expeditiously help a suffering individual.
2. To briefly describe the problem in the medical record in a consult request and the reason for the consultation.
3. For a succinct daily report of the progress of previously admitted patients on rounds on the general wards or ICU.
4. For "handoffs" about patients from a physician going off-service or off-call to ensure that the physician coming on-service or on-call is aware of crucial follow-up needs for sick patients.
5. To demonstrate to an attending that a presentation by a student is organized, confident, concise, but contains the necessary details about the patient to whom he or she is assigned.
6. To give a formal, organized, high-quality summary to an audience in a conference setting as an introduction to a speaker's planned topic.

Over the many years I have been in medicine I have heard countless presentations by physicians and trainees of all levels of experience. Some were frankly awful, blow-by blow accounts containing unnecessary, disjointed, and extraneous information which had the listeners stealing furtive glances at their watches. Some were acceptable, but still chaotic and verbose. I found myself in awe of that rare trainee who could give such a concise and clear enough description that the listener could almost picture the suffering individual and develop at least a brief list of possible diagnoses immediately. I had noticed for years that one of the key elements of those great presentations is organization. I remembered back with embarrassment to my own presentation struggles as a medical student. I was initially totally lost when presenting to my superiors and was very haphazardly providing too much distracting detail far distant from the problem at hand. Presenting at conferences made me hone my skills somewhat, but in my PGY 2 year I heard several outstanding presentations by one of my interns in particular who wounded my pride and showed me how far I had to go as a communicator. Whether I taught him any internal medicine is debatable, but I thank him for his contributions to my own case presentations. Usurping much of his technique yielded me an occasional, "That's one of the best presentations I've ever heard" from other physicians at a conference. I still cringe at my failure

to tell those physicians that I commandeered his method and that he deserved the credit. (Vanity vanity, did ever I offend thee?). One of the tools I expropriated from him was to provide the most detail about the patient's chief complaint for the listeners. This made me arrive at the realization that the history of present illness is principally a detailed exposition of some system of the body which has gone afoul. While other systems can be affected by the culprit organ, cramming too much detail about them in the HPI is distracting for the listener or reader. That information is best provided later in the review of systems (ROS) section if relevant.

As I continued to ponder, I had an epiphany as a young attending which some of my colleagues likely discovered years before I did. The six reasons listed above are all important, but it suddenly dawned on me that the principle value of being able to present well arguably begins at the patient's bedside, in the ED, or in the clinic. Skillful case presentation is a powerful tool which can be adapted to the initial patient encounter to enable a physician to think clearly and in an organized way about a patient's problem. Such clarity of thought is the beginning of the diagnostic pursuit.

From this belated revelation, I then conceived of a template previously stolen from some of the great presenters I had heard into which a new patient could be entered in the taking of the history and in the performance of the physical examination. It could be done with little note taking, more eye contact, and, most importantly, would organize the thinking of the interviewer as the history unfolds. Furthermore, if the same template were to be followed later, it would be very easy to remember and communicate to another physician, almost immediately after the encounter if necessary. So let's begin at the bedside.

Before meeting with the patient, it is prudent to quickly scan any medical records available to give an overview of the health of the person about to be interviewed. The template for the HPI, I reasoned, could be divided into three paragraphs. Paragraph #1 is the most important and involves the comprehensive unravelling of the patient's chief complaint. In patients with multiple complaints, a tactful and polite physician could make them choose among their troubles to identify their principle concern. For example, the physician might begin by acknowledging the patient's many symptoms like this: "Mr. Jones, you have really been through it recently. I want to hear about all of your troubles, of course. For a moment, could you pretend that I was a doctor who had trouble dealing with many symptoms all at once, but could do pretty well with just one? Which of all your symptoms would you have me fix first?" Having chosen one, the patient would then enter my HPI template with *that chief complaint*.

Once the physician decides what the patient's chief complaint is, the one and only focus should be to thoroughly understand it before proceeding. Unlike an office-visit questionnaire, it should be elucidated in the patient's own words as much as possible. Most physicians typically interrupt the patient's story in a matter of seconds perhaps because of pattern recognition, bias, or in the interest of time. Such an approach may yield a diagnosis for some very common conditions, but a life threatening or unusual illness could be missed and progress resulting in the demise of the patient. The remorse felt by the physician in a hurry may last an entire career and beyond.

In a safer diagnostic strategy, the physician could begin by asking about the duration of the chief complaint. For example, headache of one hours' duration might result in the patient's death whereas a headache of 40 years' duration has not killed them yet. Learning the duration gives the physician a working overview and urgency of the problem. Next, an open-ended, "Tell me about your pain, Mr. Jones" and listening carefully in silence until the patient finishes the initial description is an appropriate beginning. When it is the physician's turn to speak, a simple, "What were you doing when the pain came on?" is an important part of the early inquiry. Many patients use the term, 'suddenly' to describe the onset. For an expert diagnostician, this term needs further clarification to distinguish 'instantaneous' from a crescendo onset over a few seconds to minutes or longer. A follow-up and open -ended question might then be, "What did you try to do about the pain?" to begin to discover aggravating or relieving factors. The character of the pain or discomfort should be carefully sought after. Some patients have difficulty with pain description often defaulting with words like 'hurt'. Here a physician may transition from listening to suggesting further clarification of what the pain might have been like, ie any of the following: 'aching, throbbing, burning, pressure-like, tearing, or cramping.' An all-important query is to find out precisely the spot where the discomfort is localizing, that is, the exact area of the body in centimeters if necessary and determining if it remained localized or moved in any direction. (It is extremely important to ask whether a patient with chest pain has it at the time of the interview since any description even hinting of an acute coronary syndrome is an emergency requiring a specific protocol which includes limiting the history to a matter of minutes.) The duration and frequency of the discomfort and its relationship to activity, meals, and time of the day should help the

listener identify the culprit system. Nocturnal pain is important to note and suggests a more serious cause. Another important fact to discern is whether the discomfort has changed since it began. To that end, the physician might ask the patient to compare the present to that of its beginning: "Mr. Jones, is your pain staying the same, getting better, or getting worse?" These questions may seem elementary, but the reader is reminded that Paragraph #1 is still being detailed and the physician must endeavor to keep the patient on-point and not allowed to stray to associated symptoms or other possibly distracting information. If patients do try to stray, a polite, "Hold that thought, Mr. Jones. I want to hear about it in a moment, but let's get back to your pain. I still don't completely understand it." is not likely to offend. The purpose is to enable the physician to think in an orderly fashion and easily remember the finer details of the discomfort without distraction. An exhaustive understanding of the chief complaint should suggest or begin to suggest which organ system is the primary cause for the patient's presentation. It is recognized that the offending system may well impact other organs negatively.

Once the interviewer is reasonably certain of all the facts surrounding the chief complaint, but not before, Paragraph #2 of the interview can commence. Its purpose is to take an inventory of the associated symptoms. The physician might begin with, "Okay, Mr. Jones. I think I understand the main thing bothering you pretty well. What other symptoms were you having besides the discomfort you were experiencing?" While silence in a conversation can be awkward at times, a keen diagnostician should not be afraid to wait without speaking for an answer. The associated symptoms often confirm the suspicion of the causative organ system, but might take the history in a different direction altogether. Keeping them in a separate paragraph from that dealing with the chief complaint facilitates orderly thinking and is easier to remember in an oral presentation which might follow the encounter. Furthermore, it makes for a very organized written note. Readers of such a note will also benefit from such organization.

The final paragraph (Paragraph #3) should complete the HPI whereby the physician takes inventory of the symptoms in the suspected system which were not spontaneously mentioned. For example, if the suspected system based on Paragraphs #1 and #2 in a patient with chest pain was the cardiovascular system and the patient described only the chest pain and accompanying dyspnea, the physician should specifically ask about palpitations, orthopnea, paroxysmal nocturnal dyspnea, diaphoresis, pre-syncope, syncope, and edema. Should the patient confirm one of these symptoms, it would be placed for logical thinking and communication later into Paragraph #2. Thus, Paragraph #3 should principally contain a list of symptoms in the culprit system which were denied by the patient. Many physicians-in-training presenting such a patient make the listener or the reader wait until later in the section formally labelled ROS to list these when they are most pertinent in the HPI and belong there.

Since approximately 70% of diagnoses can be made from history, the three-paragraph approach is one method which can assist a physician to think in an orderly way while listening to the patient. Being relatively certain which organ system has caused the patient's presenting symptoms, it follows that it should also be the principal focus of the ensuing physical examination. Pertinent findings are less likely to be missed because of such an emphasis, especially if the examiner tries to anticipate and predict what should be present in persons with that history. For example, if the history suggests an acute pulmonary embolism, the right ventricle should reveal evidence of a sudden increase in pulmonary pressure. Inspecting neck veins and endeavoring to hear a loud S2 and P2 are suggestive. Discovery of a confirmatory S3 or a holosystolic murmur both of which increase with inspiration is likely to generate much more satisfaction and enthusiasm than a typical cursory auscultation of the heart, not to mention altering the direction of the workup in a sick patient. Likewise, in an adolescent with two weeks of fatigue and a sore throat, a conscientious physician expecting to palpate an enlarged spleen is unlikely to miss it if it is present and can confidently advise against contact sports temporarily and perhaps save a life.

It is obviously impossible to perform a detailed examination of every organ system in the body with this focus, nor is there time in a busy ED or clinic. The same is true for hospital physicians with many assigned patients. However, one could convincingly argue that a thorough examination of the organ system which is likely causing the problem is the least a doctor owes a patient.

The HPI taken from a patient using a three-paragraph template and the focused examination are easier to remember and recount verbally to another physician immediately if necessary. In addition, it should facilitate the entry of a succinct and orderly note into the electronic medical record. Evaluating physicians will very likely grade students whose presentations and notes are of this quality very favorably.

A few additions to the template for the oral presentation on rounds or in a conference which

could raise the quality from solid to outstanding are appropriate. One of these is the introductory sentence of the HPI which gives the listener (or reader) a quick overview of the patient's health status prior to evaluation. An introductory sentence might begin with, "Mr. Jones is a 38-year-old man who was in his usual state of good health until three days prior to admission when he…" For the more complicated patient, the presentation could start with, "Ms. Smith is a 72-year-old woman with type II diabetes, hypertension, and a coronary artery bypass graft in 2017 who was in her usual state of fair health until three days prior to admission when she…" Such an introductory sentence is the start of the thinking process for the listeners (or readers) and is an attention-grabber.

Oral presentations can be further enhanced by providing only details in the past medical history, family history, and social history which are relevant to the HPI. Giving a complete list of medications along with doses is not only unnecessary, but makes the listeners impatient to "get on with the case." These details belong in the medical record.

For the expert diagnostician the main purpose of the ROS is to identify symptoms which might be more important than what the patient came in for and taking the workup in an altogether different direction. For example, if the patient presented for evaluation of low-back pain, but gave the history of hematuria, the presenter should provide the listeners with other accompanying symptoms in the genitourinary system (ie. urgency, frequency, dysuria, hesitancy, nocturia, or pyuria). As to presenting the ROS orally or in writing, it may be summarized quickly by saying, "The review of systems was completely negative or was negative except for the following system."

The description of the physical examination of the organ system causing the problem should be given in the same high-quality detail as the history. The remainder of the exam can be summarized with some familiar cursory terms.

Pertinent, positive laboratory values and imaging findings should be presented just prior to giving an assessment of the patient's problem and plan for evaluation and treatment.

In the event that the listener(s) to an oral presentation could have lost concentration or were distracted by a page or message from another provider, another component of a quality oral presentation is to provide a one-paragraph summary of the case just presented. It might begin with, "So in summary, the patient is a 36-year-old diabetic man who presented with three days of fever, cough, dyspnea, and pleuritic chest pain. Pertinent findings were a temperature of 39C, a respiratory rate of 24, and consolidative changes in the right lower lung field, leukocytosis, and an infiltrate on chest x-ray in the right lower lobe. Sputum Gram's stain was a good quality specimen and revealed Gram-positive diplococci. Our working diagnosis is pneumococcal pneumonia and our plan is to begin ceftriaxone until improved and transition to oral therapy at discharge.

Finally in an oral presentation the assessment of the problem should be given with conviction stating what the presenter believes is the most likely diagnosis. Following that, other diagnoses to be considered should be listed along with the plan for evaluation. All too often, presenters give only a list of possibilities and no one listening really learns anything. Committing oneself to a specific diagnosis is an important lesson for the presenter-- right or wrong. Furthermore, figuring out the problem from the HPI, physical exam, and basic labs is akin to Sherlock Holmes solving a murder and helps keep enthusiasm for diagnosis high. The daily challenge of diagnosis can be one of the best hedges against physician burnout.

Other important problems, related or unrelated, should be listed with an appropriate plan for management and will complete the presentation and write-up.

As previously indicated, the patient is the principle beneficiary of the physician or trainee who has the ability to skillfully present a new patient verbally or in writing, but the diagnostic dividends which it pays the presenter will accrue for an entire career.

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