



The Art of the Clinician

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Abstract

Background: The promotion of clinical abilities could represent a significant factor leading the clinicians to in making the correct diagnosis in a timely matter. **Case:** Our patient is a 42-year-old African male with a history of Hypertension, ESRD on hemodialysis via right-sided Permcath (PC), Mastoidectomy & Right ear surgery due to trauma in childhood, AV Fistula (Needed intervention 4 times) in left upper extremity, admitted due to witnessed seizures in the setting of hypertensive emergency. The patient denied family history and toxic habits. While the patient was at the emergency room, CT head revealed stable curvilinear hyper-attenuation thought to be a thrombosed developmental vein more likely than small subarachnoid hemorrhage. He was loaded with levetiracetam, received Ativan 1mg IV and HD done as per Nephrology. The patient was transferred to the floor he was not in acute distress and was asymptomatic, the cardiovascular (CV) examination showed regular pulse, normal S1, S2, S4+ appreciated with 2/4 diastolic murmur at second right intercostal space (ICS); 2/6 pansystolic murmur at third right intercostal space left parasternal border (LPSB) radiated to the right parasternal border (RPSB) and right mid-clavicular line (MCL); 3/6 systolic murmur at 5LICS MCL radiated to the posterior axillar line (PAL). Point of maximal impulse (PMI) displaced to mid axillar line (MAL). Parasternal heave present; the neurological exam was preserved. Endocarditis was suspected and echocardiogram was expedited, it showed severe aortic regurgitation, 1.60cm x 1.68cm mass in the tip of the catheter in the right atrium, possible vegetation in the tricuspid valve with mild regurgitation, moderate mitral valve regurgitation. Later, staphylococcus epidermidis was identified in blood cultures twice, as well as the culture from the PC. The transesophageal echocardiogram found 2.41 X 0.62 cm mass appears to be a fibrin sheath, possibly remnant of a prior catheter, small perforation in the non-coronary cusp likely in the setting of healed endocarditis. Infectious disease onboard for antibiotic management. **Conclusion:** The art of the clinician goes beyond the available technology; it could prevent the loss of critical time as well as unnecessary studies, guiding a better assessment and treatment of our patients and potentially improving their outcomes.

Keywords: Heart, endocarditis, valve, clinician, clinical skills

Introduction

The concept of bedside teaching makes patients and illnesses tangible, helping physicians better comprehend the nature of the disease. The recent advances in imaging and laboratory testing have changed the diagnostic paradigm, bypassing the bedside evaluation for immediate testing, leading to the loss of an important ritual that can enhance the physician-patient relationship ^[1].

The promotion of clinical abilities has declined for various reasons, including increased patient volume and emphasis on electronic medical records (EMR). While technology has become an inexorable component of clinical practice, total dependence on technology and using it as a surrogate for an excellent clinical examination has unfortunately become an inseparable part of modern medicine ^[2].

Clinical skills are a powerful diagnostic tool, especially when paired with judicious use of technology, this in turn, could

help recover the dwindling skill set of the physicians boosting their confidence ^[3].

There is still debate over the superiority of science over skills and physicians. Besides recent days, doctors greatly rely on laboratory values and imaging studies, here we present the case of a middle-aged male whose bedside cardiovascular examination guided us in identifying significant valvulopathy with bacteremia and henceforth led us in making the correct diagnosis in a timely matter ^[4].

Case

Our patient is a 42-year-old African male with a history of Hypertension, ESRD on hemodialysis via right-sided Permcath (PC), Mastoidectomy & Right ear surgery due to trauma in childhood, AVFx4 in left upper extremity (Distal), admitted due to witnessed seizures in the setting of hypertensive emergency. The patient denied family history and toxic habits. While the patient

was at the emergency room, CT head revealed stable curvilinear hyper-attenuation thought to be a thrombosed developmental vein more likely than small subarachnoid hemorrhage. He was loaded with levetiracetam, received Ativan 1mg IV and HD done as per Nephrology. No further seizure activity was observed. ECG: Sinus rhythm, LVH and T wave inversions in leads V5, V6, II, III, aVF. When the patient was transferred to the floor he was not in acute distress and was asymptomatic. But in the cardiovascular (CV) physical examination (PE) he was found to have a regular pulse, normal S1, S2, S4+ appreciated with 2/6 diastolic murmur at second right intercostal space; 2/6 pansystolic murmur at third right intercostal space LPSB radiated to the RPSB and RMCL; 3/6 systolic murmur at 5LICS MCL radiated to the PAL. PMI displaced to MAL. Parasternal heave present; the neurological exam was preserved.

Chest x-ray showed Cardiomegaly with CHF or fluid overload. Due to the physical examination, significant valvopathy was suspected as well as possible infection due to Cath in place the reason why echocardiogram and blood culture were ordered. An echocardiogram showed G2DD, LVH, severe aortic regurgitation, 1.60cm x 1.68cm mass in the tip of the catheter in the right atrium, possible vegetation in the tricuspid valve with mild regurgitation, moderate mitral valve regurgitation. A pan-sensitive staphylococcus epidermidis was identified in blood cultures twice, as well as the culture from the PC. The transesophageal echocardiogram was performed and showed 2.41 X 0.62 cm mass appears to be a fibrin sheath, possibly remnant of a prior catheter, small perforation in the non-coronary cusp likely in the setting of healed endocarditis; no obvious vegetation or thrombus. Infectious disease onboard for antibiotic management.

Discussion

Medicine is as much poetry as there is science. A good physician has to have the alertness since the first glance, from unlocking the hidden mysteries in the stories that patients share through words and gestures, to peeking through the veil through competent examination; this art can never be replaced by technologies [5].

Studying the history of clinical reasoning from Hippocrates to Sir William Osler to Tinsley Harrison, clinical skills have always been emphasized [6,7]. Osler continuously epitomized clinical excellence; centuries after, various authors continue to discuss his teachings. Murthy et al summarize his bedside teachings and clinical skills to guide the physician in the modern era [8]. Though we have advances made in the diagnostic tests that are available now, that does not replace clinical skills and examination [7]. Mesko et al discuss the challenges of 21st-century health care providers where medicine is personalized and we are treating e-patients (referring 'e' to electronic, enabled, and empowered). The e-physicians of the century are supposed to use advanced technologies as 'aids' and not let them replace the clinical practice [9].

In contrast, a prospective observational study by Rodriguez et al at an urban emergency department showed that core physical exam findings are unusual and rarely lead to further testing or change in management. The study included only minor peripheral chief complaints away from the abdomen and torso on non-critically ill, non-ambulance transport patients. Thus, the finding from the study cannot be generalized. However, they also mention that the core examination findings may have affected management in a manner that was not documented, e.g.: verbally telling the wheezing patient to increase his medicines without

documentation or the use of medicines owing to the normal physical exam that otherwise would have been contraindicated [15].

While the literature has emphasized the importance of clinical skills and bedside manners, the practice has been shrinking. Various observational studies conducted over time show that the time spent in direct patient care has been declining continuously when seen from 1994 onwards [10,11,12,13]. A randomized control trial compared various internal medicine residency programs in the United States from July 2015- June 2016. The time spent by the interns in direct patient care was only 11.8 % and 13.0 % in standard programs and flexible programs, respectively [14]. Direct patient care in the study included evaluation and in-person communication with patients or their families. Thus, the time spent in the clinical examination is even less [14].

Also, patients appreciate when a clinician spends time on examination. In addition, to help with diagnosis, the physical examination also assist in building mutual trust and confidence between the patient and physician. Dr. Alpert writes about his patient who asked to be examined only because the patient felt better when being examined although there were no changes made to the management, he describes the advantage of physical examination as being not just limited to the finding of an abnormality [16]. Antoun et al conducted a qualitative study to assess patient perspectives in the use of computers by physicians. They found that while patients appreciated the EMR, they preferred if physicians balanced eye contact and computer use or if physicians did not use the computers during the encounter instead use it after they leave, recommended physicians be trained on communication skills specific instead to computer use to ensure proper patient satisfaction [17].

Asif et al shared a case report of embolic stroke due to infective endocarditis which was initially mistreated as Bell's palsy, in this case, the patient presented with left-sided facial weakness but a CT scan of the head was normal, while treatment for Bell's palsy was started the weakness progressed to involve the body; further examination revealed sparing of forehead muscles, pain systolic mitral murmur, Janeway lesions, and splinter hemorrhages, thus changing the management plan [18].

Dr. Yazdani, E'Town Lung specialist in Elizabeth, KY gives an example of a case of recurrent bilateral pleural effusion who was being treated with a diagnosis of congestive heart failure with bilateral effusions but after careful examination of nails, was diagnosed with yellow nail syndrome [19].

"What you do not actively look for in a physical examination you will most likely miss"; Seitz et al presents various physical manifestations of various cardiovascular pathologies, emphasizing that physicians need to be competent on examination skills. While they mention declining physical exam skills, they recommend looking actively for findings during the exam for prompt identification [20].

With unceasing literature being published emphasizing the importance of clinical skills and analyses showing the practice deviating away from it, physicians should learn to guide themselves with competent skills rather than only relying on laboratory tests and computers. Although relying on the tests looks tempting, using technologies as mere aids and mastering both the art and science admixture of medicine is the challenge to the physicians in our era.

Several examples of missed diagnoses are being shared in literature and needless to say experienced by each physician during their practice. Our case is one of many examples of how a competent clinical examination saves time and guides further

evaluation; We would have missed the critical part of the diagnosis if the focus was only made on the presenting complaint of seizures and not on cardiovascular examination. If the physical examination was performed earlier would have saved us time. Or even more, if we had missed completely would have been tragic- stressing that technologies alone would have failed us as physicians.

Conclusion

The art of the clinician goes beyond the available technology; it could prevent the loss of critical time and unnecessary studies, guiding a better assessment and treatment of our patients and potentially improving their outcomes.

Ethics approval and consent to participate

This is a retrospective review of record, accordingly with the Institutional Review Board rules.

List of abbreviations

Permcath (PC), electronic medical records (EMR), cardiovascular (CV), physical examination (PE), second right intercostal space (ICS), third right intercostal space left parasternal border (LPSB), right parasternal border (RPSB), right mid-clavicular line (MCL), posterior axillar line (PAL), Point of maximal impulse (PMI), mid axillar line (MAL)

Data Availability

The actual information is available in MR system of our hospital

Conflicts of Interest

The authors declare that there is no conflict of interest regarding the publication of this paper.

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Authors' contributions

All authors contributed equally to this study and also read and approved the final report."

References

- [1] Rodriguez-Guerra Miguel, Singh Tushi, Vittorio Timothy J (2021) The Dilemma of the Physician, Going Back to The Clinician, Back to Basics. *Medical & Clinical Research* 6(5): 518-521.
- [2] Honavar SG. Back to the bedside. *Indian J Ophthalmol.* 2019;67(11):1789-1791. doi:10.4103/ijo.IJO_1922_19
- [3] Verghese A, Brady E, Kapur CC, Horwitz RI. The bedside evaluation: ritual and reason. *Ann Intern Med.* 2011 Oct 18;155(8):550-3. doi: 10.7326/0003-4819-155-8-201110180-00013. PMID: 22007047.
- [4] Costanzo C, Verghese A. The Physical Examination as Ritual: Social Sciences and Embodiment in the Context of the Physical Examination. *Med Clin North Am.* 2018 May;102(3):425-431. doi: 10.1016/j.mcna.2017.12.004. PMID: 29650064.
- [5] Francis, G. (2020). Medicine: Art or science? *The Lancet*, 395(10217), 24-25. doi: [http://dx.doi.org.eresources.mssm.edu/10.1016/S0140-6736\(19\)33145-9](http://dx.doi.org.eresources.mssm.edu/10.1016/S0140-6736(19)33145-9)
- [6] Asif T, Mohiuddin A, Hasan B, Pauly RR. Importance Of Thorough Physical Examination: A Lost Art. *Cureus.* 2017 May 2;9(5):e1212. doi: 10.7759/cureus.1212. PMID: 28589061; PMCID: PMC5453739.
- [7] Yazdani A. Physicians Should Always Perform a Physical Examination. *Am J Med.* 2018 Jan;131(1): edition 37. doi: 10.1016/j.amjmed.2017.09.016. PMID: 29224619.
- [8] Seitz MP, Minhas S, Khouzam A, Khouzam N, Harper Y. The Face Is the Mirror of the Soul. The Cardiovascular Physical Exam Is Not Yet Dead. *Current problems in cardiology.* 2021;46(3):100644-100644. doi:10.1016/j.cpcardiol.2020.100644
- [9] Custers EJFM. Training Clinical Reasoning: Historical and Theoretical Background. 2017 Nov 7. In: ten Cate O, Custers EJFM, Durning SJ, editors. *Principles and Practice of Case-based Clinical Reasoning Education: A Method for Preclinical Students [Internet]. Cham (CH): Springer; 2018. Chapter 2. PMID: 31314453.*
- [10] T. The Practice of Medicine. In: Jameson J, Fauci AS, Kasper DL, Hauser SL, Longo DL, Loscalzo J. eds. *Harrison's Principles of Internal Medicine*, 20e. McGraw-Hill; Accessed May 19,2021. <https://accessmedicinehmedicalcom.eresources.mssm.edu/content.aspx?bookid=2129§ionid=181950641>
- [11] Murthy VK, Wright SM. Osler Centenary Papers: Would Sir William Osler be a role model for medical trainees and physicians today? *Postgrad Med J.* 2019 Dec;95(1130):664-668. doi: 10.1136/postgradmedj-2019-136646. PMID: 31754059.
- [12] Mesko B, Györfly Z. The Rise of the Empowered Physician in the Digital Health Era: Viewpoint. *J Med Internet Res.* 2019 Mar 26;21(3): edition 12490. doi: 10.2196/12490. PMID: 30912758; PMCID: PMC6454334.
- [13] Guarisco S, Oddone E, Simel D. Time analysis of a general medicine service: results from a random work sampling study. *J Gen Intern Med* 1994; 9: 272-7. [PubMed: 8046530]
- [14] Fletcher KE, Visotcky AM, Slagle JM, Tarima S, Weinger MB, Schapira MM. The composition of intern work while on call. *J Gen Intern Med.* 2012 Nov;27(11):1432-7. doi: 10.1007/s11606-012-2120-7. Epub 2012 Jun 27. PMID: 22865015; PMCID: PMC3475836.
- [15] Block L, Habicht R, Wu AW, et al. In the wake of the 2003 and 2011 duty hours regulations, how do internal medicine interns spend their time? *J Gen Intern Med* 2013;28: 1042-7. [PubMed: 23595927]
- [16] Mamykina L, Vawdrey DK, Hripcsak G. How Do Residents Spend Their Shift Time? A Time and Motion Study with a Particular Focus on the Use of Computers. *Acad Med.* 2016 Jun;91(6):827-32. doi: 10.1097/ACM.0000000000001148. PMID: 27028026; PMCID: PMC4879085.
- [17] Desai SV, Asch DA, Bellini LM, Chaiyachati KH, Liu M, Sternberg AL, Tonascia J, Yeager AM, Asch JM, Katz JT, Basner M, Bates DW, Bilimoria KY, Dinges DF, Even-Shoshan O, Shade DM, Silber JH, Small DS,

- Volpp KG, Shea JA; iCOMPARE Research Group. Education Outcomes in a Duty-Hour Flexibility Trial in Internal Medicine. *N Engl J Med.* 2018 Apr 19;378(16):1494-1508. doi: 10.1056/NEJMoa1800965. Epub 2018 Mar 20. PMID: 29557719; PMCID: PMC6101652.
- [18] Rodriguez RM, Phelps MA. An evaluation of the core physical exam in patients with minor peripheral chief complaints. *Emerg Med J.* 2007 Dec;24(12):820-2. doi: 10.1136/emj.2007.050336. PMID: 18029511; PMCID: PMC2658350.
- [19] Alpert JS. Will Physicians Stop Performing Physical Examinations? *Am J Med.* 2017 Jul;130(7):759-760. doi: 10.1016/j.amjmed.2017.03.013. Epub 2017 Apr 1. PMID: 28373113.
- [20] Antoun J, Hamadeh G, Romani M. Effect of computer use on physician-patient communication using interviews: A patient perspective. *Int J Med Inform.* 2019 May; 125:91-95. doi: 10.1016/j.ijmedinf.2019.03.005. Epub 2019 Mar 7. PMID: 30914186.