Thinking outside the (check) box

A physical exam leads to a rare diagnosis—and a pivotal lesson.

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Shortness of breath. Chest pain. Abdominal pain. As a medical student, I study, practise, and apply approaches and physical exams for these common complaints, and I have slowly gained confidence in my skills and knowledge. I had not thought about my approach or examination for a patient whose chief complaint upon presenting was "swooshing in ears." Before I went into the room, my supervisor reminded me to approach the case exactly as I would any other, with a solid history and thorough physical exam. With no mental OSCE checklist for this history and physical (OSCE stands for objective structured clinical exam—a common form of examination in medical school), I realized I would need to think hard and be very purposeful with my questions and exam. One of our goals during this period of clinical exposure was to complete our transition from memorizing and mimicking OSCE checklists to fulfilling the same checklists with purpose and reason, as clinicians.

On taking the history, I discovered that this "swooshing" was heard in her left ear in sync with her heartbeat. It occurred only when she was lying down; for instance, while trying to fall asleep at night. It was so loud it would often keep her awake, and she had been struggling with this for over a year. She also experienced moderate pain to pressure behind her left ear, which she experienced when she had her ear on the pillow. Her past medical history was significant for breast cancer treated by a bilateral mastectomy 10 years prior, as well as antithrombin 3 deficiency whereby she had suffered from two previous DVTs during pregnancy and for which she took heparin for long flights. She was a nonsmoker, a nondrinker, and an active, healthy woman.

I reviewed the history with my supervisor and confided in him that I had no idea how to approach the physical exam for this patient. I think subconsciously my keenness to come up with a physical exam was dampened by the referral note stating that the physical exam was normal.

"What is on the top of your differential?" he asked.

"It sounds like a vascular etiology based on the timing and her medical history of hypercoagulability," I said.

He agreed. "How are you going to approach the physical?"

I stumbled, "I don't really have much of an approach… I guess I'll do a cranial nerve exam and look in her ear."

"Those are all are good ideas, but what's your approach? What's your approach to every physical?"

"Inspection, palpation, percussion, auscultation?" Of course.

"Good. Yes, you are going to look in her ear, do your cranial nerves, but always keep your approach and differential in mind when you examine any patient."

My supervisor decided to use this opportunity to observe my physical exam skills or—in my mind—supervise me while I floundered. I inspected her face, both ears, and surrounding posterior area bilaterally—all normal. I looked inside both ears—normal. I did a cranial nerve seven and eight exam—normal. When I palpated the ear and the occipital scalp there was moderate pain on the left side, and the swooshing was reproduced with the palpation… interesting! Auscultation over the left occiput identified a loud bruit—amazing! I listened to the other side to compare, and heard nothing. I paused and looked at my supervisor, wide eyed. "I think I hear a bruit!" I said. "Really?" he responded. This was clearly new territory for him too. While standing next to our incredibly cooperative patient, we both put our stethoscopes over our own occiputs to confirm there was no bruit to be heard. We then stepped back and explained what we were thinking to the patient. This physical exam had told us a lot.

We sent a report to her family doctor outlining our findings and our working diagnosis of either a dural AV fistula or a superficial thrombus. We recommended a CT-angiogram, which confirmed the diagnosis of a transverse-sigmoid dural AV fistula. The patient underwent complete occlusion with transvenous and transarterial embolization.

This case was pivotal in developing my approach to physical exams and informing how I think about cases. It enhanced my skills in detecting and gathering clues, and helped me move away from blindly following OSCE checkboxes. It also emphasized the importance of not cutting

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corners. It would have been easy to do a quick superficial physical exam, especially as a previous doctor had said that the exam was normal. Doing this physical gave us all a sense of the diagnosis and a solid reason for the patient to agree to undergo an invasive investigation.

I've had multiple discussions with my classmates about the physical exam—how sometimes it seems so arbitrary in a world of advanced tests and imaging studies. I think we all know and agree with the various arguments for why doctors should do thorough physical exams. As medical students I think it is even more crucial that we keep our exams thorough: for all the same reasons that any doctor should, but also because it solidifies an important habit of not cutting corners and forces us to develop our clinical approach, our reasoning, and our ability to think outside the OSCE boxes.

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