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Editorial

Reflections & Ruminations on Oral Exams: Cultivating Surgical Acumen in Cardiothoracic Residents

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Introduction

Education is not the learning of facts, but the training of the mind to think.

Albert Einstein[1]

Many, if not most, surgical and other interventional medical disciplines use both written and oral exams to evaluate a trainee's readiness to move from a training environment into independent practice. There is a consensus among educators in the training programs for these disciplines that oral exams are an important part of evaluating the capacity of their trainees to think on their feet in situations in which they may not be able to get help 'in real time', as they enter the independent practice of their discipline. After all, these exams are designed to evaluate a trainee's ability to synthesize information in a manner that is not always possible to assess with the use of multiple-choice written tests. I will outline strategies that can be useful to those who are preparing for and taking these exams, with a focus on the oral exams that are part of the board certification process of the American Board of Thoracic Surgery [2]. I have taken, given, and created questions for oral exams in many disciplines over the years, ranging from sailing to Surgery and in many realms between. I will review these strategies, with hope that my reflections will enhance both the education of various types of trainees and their eventual ability to demonstrate their mastery of the discipline in which they have trained on oral exams. Let's get started ….

A Brief History of Oral Examinations

Oral exams have been around at least since Socrates grilled Meno on the nature of virtue.

Molly Worthen [3]

As Molly Worthen wrote in a recent essay, "It's worth revisiting oral exams. This phrase brings to mind a stone-faced interrogation intended to expose a trembling student's skull full of mush, in the words of Professor Kingsfield in The Paper Chase. But, if done right, oral exams can be more humane than written exams. They are a useful tool in grappling with many problems in higher education, including the difficulties of teaching critical thinking and a student's struggles with anxiety…." [3]. After all, as Thomas Arnold once wrote, "Presence of mind is a quality which deserves to be encouraged [while] nervousness is a defect which [many] feel painfully, in many instances throughout life." [4].

Oral exams used to be fairly common throughout medical education, but in recent times they have become less common. I myself actually had oral exams in my third-year clerkships in medical school. I do not recall participating in oral exams, at least not formal ones, prior to that point in my own educational trajectory, other than an oral exam that was a part of my certification as a SCUBA Diver. However, since my classmates and I knew that we would be subjected to oral exams at our medical school, we prepared for those exams as best we could. Most people will have had experiences that are at least somewhat analogous to formal oral exams, such as being coached in a sport, involved in some type of scouting activities, participating in racing sailboats, or even being interviewed for a job.

When I was in my surgical residency training and, later when I became the Director of The Surgery Clerkship at the University of Virginia, oral exams were part of the final grade that medical students received in that clerkship. Some of the other clerkships at our institution used oral exams, as well. As my experience with student and resident education evolved, I eventually came to the conclusion that we educators were probably unable to make these high stakes exams consistently fair to our students, for a variety of reasons. Another factor we considered in whether to continue to give these oral exams was that they required a considerable time commitment for all involved. Eventually oral exams for students in our Surgery clerkship, and in the other clerkships at our institution, were abandoned. This evolution away from the use of oral exams in clerkships seemed to happen throughout the country around the same time. Whether this change was appropriate or not, it did mean that most medical students would often finish medical school without having experienced this form of testing, at least in a formal, relatively high stakes setting.

Of course, the best clinical teachers are conducting informal oral exams as they teach day to day on the wards, in the clinics, and in the operating rooms. Still, these days many Thoracic Surgery trainees may have had only minimal experience with formal oral exams. Those residents

who have not completed a General Surgery residency may well have never had the experience taking an oral exam, at least not a formal one, prior to taking their Thoracic Surgery oral board exams.

The History of The American Board of Thoracic Surgery

The American Board of Thoracic Surgery (ABTS) was founded in 1948, with the stated of goal of "protecting the public by establishing and maintaining high standards in Thoracic Surgery". The ABTS became a primary board in 1971. Between 1971 and 2024, I was one of only two Thoracic Surgeons at my institution to have been a member of the ABTS, each for a seven-year term. Having spent countless hours creating and evaluating the scenarios used in the ABTS oral exams, as well as giving the actual exams, I have some reflections on this process that I believe will be of use to those preparing to undergo these oral examinations [2].

Why Have Oral Exams?

All doctors are book smart, but they don't cut us open with books.

Kurashiki Central Hospital Promotional Video [5]

When creating multiple-choice tests, those developing the questions for these tests must try to trick or distract the test takers or, at least, make the correct answers not entirely obvious [6]. However, oral exams test knowledge and decision making in a more realistic manner than do written tests. Medical and surgical educators know that if a trainee can speak plainly, accurately, and in an organized manner about a clinical scenario, they probably know what they are talking about. In other words, oral exams are fair and are likely a more accurate evaluation, not only of what the examinee knows but also of how they think, than are multiple choice written exams. The examiners can judge, reasonably well, if the oral exam test taker is organized, thorough, efficient, knowledgeable, and able to think 'on their feet'.

Knowledge almost never arises at the moment of its application…. You learn CPR years before saving a drowning man.

Joshua Rothman 2024 [7]

While some might question the somewhat artificial testing regimen of oral exams in Thoracic Surgery and other disciplines, those who take issue with testing of this sort must acknowledge that all exams do contribute to the creation of a broad and comprehensive training environment. On a tangentially related note, The Thoracic Surgery Residency Review Committee considers the pass rates of graduates of Thoracic Surgery residencies, on both the written and oral exams, to be a valid metric for evaluating those residency programs. Finally, it is worth noting that tests of any kind do create an impetus, if not inspiration, to study broadly in any discipline.

There Are No Tricks in Oral Exam Questions

As noted earlier, when creating multiple-choice exams, the best test makers have to try to trick the test takers, at least to some degree. With oral exams there really is no such 'trickeration'. We know that if you can talk plainly, accurately, and in an organized manner about a clinical scenario, you probably know what you are talking about. In other words, oral exams are fair and are likely an accurate evaluation, not only of what the examinee knows but also of how they are able to think through clinical scenarios.

What Do You Want from Your Mentors?

As a learner, do you want your teachers to push you? Do you want them to make you smart? Your answer to that question may be similar to what Pat Conroy wrote about teachers in his novel, The Lords of Discipline:

Great teachers had great personalities, and the greatest teachers had outrageous personalities. ..... I wanted my teachers to make me smart…. Bad teachers do not touch me; the great ones never leave me. They ride with me during all my days, and I pass on to others what they have imparted to me…. I steal from the great teachers. And the truly wonderful thing about them is that they would applaud my theft, laugh at the thought of it, realizing they had taught me their larcenous skills well. [8]

Every Day is a School Day

It was the job of a school to produce young people who would be acceptable at a dance [and] invaluable in a shipwreck.

JF Roxburgh, Headmaster of Stowe School [9]

While, as an old saying goes, "every day is a school day", trainees and their mentors need to ensure that all are ready for the less commonly encountered issues that the examinees will be expected to understand for clinical practice and to be able to discuss in an oral exam. Furthermore, it is apparent that some form of 'practice oral exams' have value to trainees, since the 'feel' of this type of practicing is considerably different from the conversations that are part of the everyday work of caring for patients during one's residency training.

Instincts for Preparing for Oral Exams

I do suspect that most successful learners, in any discipline, have developed instincts for thinking about what might turn up on their exams.

Furthermore, I believe that Thoracic residents (as well as their future patients) will benefit from preparing for these exams. In my mind, that preparation, however one goes about it, will contribute to the stated goal of the ABTS, which is to improve and ensure the optimal delivery of care to Thoracic surgical patients.

How can individual resident learners prepare for these oral exams? They should, of course, be encouraged to prepare, for every case in which they will be participating, with a mindset more focused on improving the outcome for a particular patient, while considering questions that might be asked on an exam will be a secondary consideration. It is in this way that training in procedural disciplines differs from many of the prior learning environments of the trainees. Obviously, the stakes for knowledge acquired for treating one's future patients are higher for those clinical issues than would be true, say, for memorizing the Krebs cycle.

Reflecting on Your Own Cases

It is important that our trainees also be encouraged to reflect on the cases they have done and on the lessons learned from them after each case. When I was in my own residency training, my father, a Thoracic Surgeon himself, sent me an article written by Dr. Frank Spencer, in which Dr. Spencer described his practice of dictating, for himself, some notes of reflection on each case, immediately after dictating the actual operative note. In his essay Dr. Spencer noted that this practice often led to more introspection about and learning from each case completed than might have been true if these reflections were not made and recorded 'in the moment' [10].

I followed this advice myself for years, though I later evolved to writing notes by hand in a bound notebook after every case, throughout the rest of my career. I did realize that the value of this habit derived as much from the process itself as from the resulting written notes. In other words, I did not, all that often, refer to my written notes at a later time, finding that the process of reflection, in "nearly real time", just after an operation was completed, provided most of the value of this habit [11].

Learning by Thinking in Questions

I have long suspected that most successful learners and test takers, in any medical discipline, have developed instincts for thinking about what questions or topics might turn up on their exams, as well in their eventual clinical practices. Furthermore, I am confident that Thoracic residents (as well as their future patients) will benefit from their preparation for these exams. Therefore, I believe that preparing for exams, however one goes about it, will contribute to the stated goal of the ABTS, which is to improve and ensure the optimal delivery of Thoracic surgical care to patients.

Issues Specific to 'Tracked' Trainees (GTS vs. CT)

Finally, while one aspect or another of our discipline may have been your focus during your training, you must still must pass the ABTS exams. The examiners will not know of your interests or focus, nor will they ask you about those issues. In fact, the examiners will not know anything about where you trained, and the same exam will be given to each examinee in a given exam cycle, regardless of the focus of their training, and the questions will be evenly divided between cardiac (adult and congenital) questions and general thoracic questions. On a related note, it stands to reason that you might consider focusing more of your study time on the area, or areas, of Thoracic Surgery that was NOT the primary focus of your training.

More Granular Approaches to Preparing for Oral Exams

In addition to learning from your everyday experiences, there is a fairly wide array of approaches and adjuncts to preparing for, or helping others prepare for, oral exams. We will touch on some of those approaches.

The faculty surgeons at The University of Colorado, led by their Chair of Surgery at the time, Dr. Ben Eiseman, created a series of decision-making books in the late 1970's, with the first of these books entitled Surgical Decision Making, which was co-authored by Dr. Eiseman and his faculty colleague, Dr. Roger Wotkyns [12]. This series eventually included over 30 titles covering a wide array of disciplines. When I myself first encountered these texts, I realized that they were more useful for creating a sort of 'flow' in thinking than they were for actual, granular advice for dealing with individual patients, each of whom will have their own set of conditions and circumstances. Eventually, I found that reading the footnotes provided in these books first, followed by studying the flow diagrams, was an excellent way to prepare for oral exams. I used the books in this series to prepare for my own oral exams in Surgery and in Thoracic Surgery. Here is one of the algorithms presented in the book in this series that is focused on Thoracic Surgery (Fig. 1) [13] .

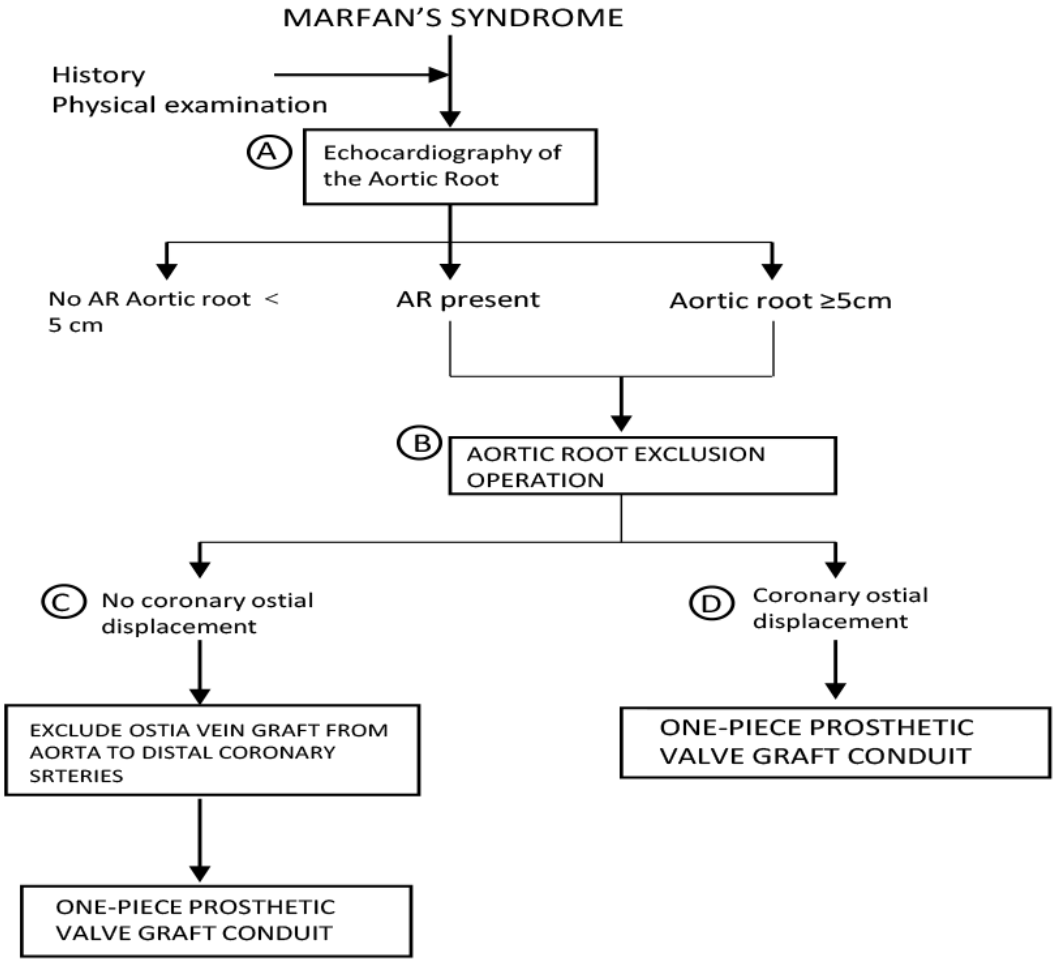

Fig. 1. More Granular Approaches to Preparing for Oral Exams [13].

The Bullet Point Project

It eventually dawned on me that, while these decision-making books did help me and, eventually, my proteges prepare for oral exams, taking the algorithms from books of this sort and creating a set of 'bullet points', or checklists based on them, was even more effective in recalling, in an organized way, the steps one should follow in discussing various clinical scenarios in the setting of an oral board exam. Creating bullet point lists of this sort can benefit from a communal effort, with residency colleagues working together to create and edit them. In summary, both algorithms and bullet point lists can facilitate your getting into 'a flow state' in answering oral exam questions.

The Value of Studying Sample Questions

You can also use sample questions to prepare for an oral exam. You should think, and speak (at least to some degree), in bullet points, as noted above. Consider timing yourself on practice questions, remembering that your answers should be five minutes or less in duration. If your training program conducts mock oral exams, you will benefit from that experience. If you do not have the opportunity to participate in mock oral exams given by your faculty mentors, you can practice with your resident colleagues. Some have found it instructive to record or even film themselves giving answers to practice questions, as reviewing recordings of this sort may provide some useful insights into how you are presenting yourself. However you prepare, you must be organized in answering questions in an oral exam, as you will not get much, if any, credit for answering in a disorganized 'stream of consciousness' manner.

Finding Practice Questions

There has long been a sort of "resident underground" in many disciplines that has encouraged recalling and recording the topics and questions covered in recently completed oral exams. While the ABTS and the Boards in other disciplines officially frown on this practice, I personally have never lost any sleep over it, either as a test taker or as a test creator. In essence I have always thought that these sample questions actually promote learning and almost certainly do not provide any unfair advantage to those taking the exams. After all, having access to banks of sample questions likely contributes to resident education, while not substantially detracting from the accuracy and usefulness of a formal oral exam process.

Experiences Analogous to Oral Exams during Surgical Training

While many programs conduct mock oral exams, it is generally challenging to conduct these sessions more than once or twice in an academic year. However, the experience of preparing for and presenting at your program's Morbidity and Mortality conferences can be a reasonable facsimile of oral exams [14].

Board Review Courses

There are a variety of board review courses available for most medical and surgical disciplines. I myself participated in these courses for the board exams in all three of the disciplines in which I had trained, including Surgery, Surgical Critical Care, and Thoracic Surgery, all of which I found to be very useful. These courses have come and gone over the years, but one that is still ongoing and widely respected is the Core Curriculum Course run by the faculty at The University of Utah, which is called 'The Intermountain CV & T Surgery Core Curriculum Review' [15].

As an aside, as I shifted from being a trainee myself to becoming a faculty educator, it occurred to me, that there was likely some benefit to sending residents to courses of this sort at the beginning of their training, as well as after completing that training, recognizing the validity of the old admonition that an educator is most effective when "you tell 'em what you are going to tell 'em, then you tell 'em, and, then you tell 'em what you told 'em". Some educators have used a more succinct description of this cycle, noting that 'learning happens best in the prepared mind'.

Logistics & Style Points for Taking Oral Exams

What about the logistics and 'style points' for performing well on the actual exam? You want to make a good first impression, of course. You must be dressed professionally, and you must turn off your phone during the exam. You should have a sense of the timing of the exam, even if you are not watching the clock. There will be four questions per room in the ABTS oral exams, and those questions will need to be covered in a thirty-minute time frame, which means that each scenario will need to be completed in about seven minutes. Your examiners will have a clock set up so that they can stay on time. So, doing the math, it is apparent that one examiner will take about two minutes to describe a clinical scenario, and you will need to complete your response in about 5 minutes [16]. The two examiners will alternate presenting the clinical scenarios that you will be expected to discuss in each exam room, and both of them will evaluate each of your responses.

An Oral Exam is a Performance

Does the way you feel affect the way you perform?

Doug Newburg PhD [17]

An oral exam is a performance as much as it is a test, a performance that is analogous to a sport or to a musical performance. You will virtually certainly have some understanding of these strategies from your own experiences, such as sports competitions, speaking in public, or, perhaps, musical recitals. Do not 'over caffeinate' prior to your exam. After all, you will certainly not fall asleep during an oral exam!

Style points will be awarded, even if they are awarded by the examiners subconsciously. Remember that your evaluation starts the minute you walk in the door of the exam room, with hope of conveying a sense of confidence. Shake hands with each examiner as you introduce yourself. Avoid being put off by the demeanor of your examiners, since they may have been instructed to emulate an Easter Island statue nursing a grudge when administering these exams. You must think about maintaining eye contact with the examiners, and you should avoid folding your arms across your chest. And, it is probably best to sit on or near the edge of your chair and to place your hands on your knees or the arms of that chair. And, above all, avoid rocking or swaying. Focus, at least at first, on your breathing, taking slow deep breaths, remembering the rhythmic breathing, through your nose, that you may have learned in a yoga class [18]. In fact, after each exam scenario is presented, you should take a long, deep breath prior to delivering your answer. Taking that breath will be at least somewhat calming, and it can give you at least a bit of time to organize your response.

Controlling the Conversation

You must listen carefully to each question as it is posed, gather your thoughts, and then launch into how you would approach and manage the issues of the patient described to you. You must avoid rambling and have a sense of the time allotted for each scenario. Avoid asking the examiners questions, if possible, but it is reasonable to ask for clarification, if necessary. You should speak directly to the examiner who presented the clinical scenario to you. You will want to be organized and accurate, while striving to be thorough but succinct.

Talk, talk, talk about it. Talk as if you care.

10,000 Maniacs, from 'Don't Talk' [19]

Try to control the conversation as much as possible, which will give your examiners less time to ask follow-up questions. I can assure you, from my many hours of actually giving these exams over the years, that your examiners will respect and even appreciate your controlling the conversation. Again, remember that while 'plodding along' is reasonable for written exams, 'flow' is best for oral exams. You can always ask for clarification of the scenario, if you are not entirely clear on some aspect of it. Above all, you must be logical, organized, confident, and, of course, accurate in your discussion of the cases presented to you. And, on a similar note, you should speak in the first person, saying "I would do this or that ….."

Do You Need to Cite Evidence in an Oral Exam?

A common question that trainees have for their mentors about oral exams, is whether they will be expected to cite evidence to support their answers to the questions that they will be asked on these exams. The examinees will NOT be expected to cite the literature to back up their answers to oral board questions. They merely need to give their examiners some version of "this approach is the one that I would use for a patient of the sort described in the scenario presented."

What Might You Do if You Don't Know the Answer?

It is reasonable to say something like "I'm not all that familiar with this scenario, but here's how I would approach a patient with this issue". And, then, describe how you would work to obtain the necessary knowledge and wisdom to care for that patient. After all, this strategy is much better than merely saying that you don't know anything about the scenario. Of course, you must hope that you will be able to avoid needing to say that more than once in each examination room!

How Can You Move on from an Answer You Perceive as Disappointing?

You know what the happiest animal on Earth is? It's a goldfish. It has a 10 second memory. Be a goldfish.

Ted Lasso [20]

You will need to be able to 'wipe the slate clean' after each question, as best you can. There will be time to contemplate your answers later, but you must be ready to focus all your attention on the 'question at hand.' After all, you can have a suboptimal performance on a few questions and still pass the overall exam.

Finishing Up the Exam

When you have finished discussing the clinical scenarios posed in a particular room, it is appropriate to thank the examiners for their time and attention. You can offer to shake the hands of your examiners, prior to making your way out of that room, leaving them with a sense of your own confidence and of your appreciation of their time.

What to Do after the Exam

First of all, you should exhale! And, you may well go celebrate with any colleagues who may have been at the same exam site. However, at some point in the near term, you should debrief and reflect on the exam, both to analyze your performance and to at least consider adding some notes to your own program's 'collection' of sample questions and to provide your reflections on the experience for your younger residency colleagues who will, soon enough, be preparing for their own oral exam experience.

Summary

Every sentence in my head, someone else has said.

All I know is what I need to know…..

905 by *The Who* [21]

Oral exams are more about demonstrating organized thinking and wisdom than they are about citing facts. Testing the knowledge of facts is accomplished with written tests while clinical wisdom is evaluated with oral exams. While understanding that oral exams will feel daunting to many, there are effective approaches to preparing for and performing well on these exams. In summary, you will be able to perform optimally on oral exams when you learn from algorithms, remember with bullet points, and speak in paragraphs.

Review Courses for Thoracic Surgery Exams

The Osler Institute — Thoracic Surgery Course. https://www.osler.org.

Oakstone — Thoracic Surgery. https://oakstone.com

Intermountain Health Core Reviews (‘The Utah Course’). https://intermountainhealthcare.org/health-information/ipce/other-activities/core-review/

Other Resources

TSRA Clinical Scenarios — https://www.tsranet.org/resources/tsra-clinical-scenarios/.

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