

Strong Medicine Interview with Alicia Quesnel, 4 September 2014

ILACQUA: Hello. This is Joan Ilacqua and today is September 4th, 2014. I'm here with Alicia Quesnel at Mass Ear and Eye Institute [sic], and we're going to record an interview as part of the Strong Medicine Oral History Project. Do I have your permission to record this interview?

QUESNEL: Yes, you do.

ILACQUA: Excellent. So my first question for you is if you could begin by telling me about yourself, where you're from, where did you go to school, that sort of stuff.

QUESNEL: So I grew up in Upstate New York. I went to both college and medical school at Northwestern University in Chicago and then I actually came to Boston right after that in 2005 for residency training in ear, nose, and throat surgery, head and neck surgery, here at the Mass Eye and Ear Infirmary in the Harvard combined program. So I've rotated around most hospitals in Boston as a result of that. And then I stayed on here at the Mass Eye and Ear Infirmary for a fellowship in what's called otology and neurotology and lateral skull base surgery, which was based here at the Mass Eye and Ear Infirmary and Mass General. I joined the faculty here at Mass Eye and Ear Infirmary in 2012 as an otologist and neurotologist, and so my specialty

is really the ear, hearing, tumors related to the ear and skull base, and any related medical issues.

ILACQUA: All right. Excellent. And so on a typical day, what would that look like for you?

QUESNEL: So My typical day is either -- can -- there's actually three parts to my job. So it's either what I could call a research or administrative day, in which I have time to pursue some projects that I'm interested in -- an area called otopathology, which is the study of human temporal bones, from people who have died and donated their temporal bones to science, to learn more about ear and hearing health issues through that. The other part of my job is the clinical aspect, which involves both seeing patients in clinic, or operating. And I see a range of patients, including pediatric and adult patients, and see patients with a range of problems, ranging from problems that are not so serious, like effusions or fluid in the ear, to problems that are more serious and potentially life-threatening, including tumors of the skull base, and everything in between, related to the ear.

ILACQUA: Excellent. So -- actually, could you tell me -- so what's your official title here?

QUESNEL: My official title is an instructor in otology and laryngology with the Harvard Medical School and I'm an attending surgeon at the Mass Eye and Ear Infirmary.

ILACQUA: Excellent. And so we're going to turn to talking about the marathon in Boston. Do you usually work on Marathon Monday?

QUESNEL: I do. I -- it was a clinic day for me, but in general, it would've been a regular work day for me. So Monday happens to be my clinic day.

ILACQUA: Hmm. And so had you worked on Marathon Monday here in the past? Could you describe sort of what it looks like at Mass Ear and Eye on marathon Monday?

QUESNEL: Yeah, there certainly -- I think the biggest thing that I remember about the marathon -- I don't run marathons myself, and I have to say I have not paid nearly as much attention to the marathon as obviously I have going forward from last year. But in general, it was a -- really a regular work day, and we would hear about it sometimes from patients as they came in, who had been spectators in the course of the day, or knew somebody who was running in the marathon, but really, otherwise, was not that involved in it. At the Mass Eye and Ear, we have a team, the Mass Eye and Ear team, that runs in the marathon, help raise money for typically various research related to ear, nose, and

throat medicine, and so we hear a lot about it leading up to the marathon with that team, and most of us help contribute in that way. But other than that, it really was not otherwise something that I took time off for, or was particularly involved in.

ILACQUA: OK. So you had mentioned that marathon Monday 2013 was a clinic day for you. Could you talk about how that day began?

QUESNEL: So it was a typical clinic day, except that, obviously, traffic patterns are very difficult, so the patients coming in were few and far between, I would say, that day, as compared to a typical day, in which it's usually very rapid pace. So it was a little bit slower of a day than usual, but other than that, it started off [05:00] like a regular clinic day, just seeing patients with ear-related problems. I was in clinic with a colleague of mine, Dr. Dan Lee, who sits in the same office, who's also an otologist, neurotologist, and skull base surgeon, which we can talk about later. And certainly everything was what you would've expected for Marathon Monday.

ILACQUA: And so as the day went on, when did you know something had occurred?

QUESNEL: So pretty shortly after the bombing occurred, we started to hear about it, I believe, through the hospital systems. So my assistant actually came into the office to ask us if we had heard about what had just happened, and from there, the news quickly rolled out, and certainly everybody in the office was talking about it and was aware of it pretty quickly after that.

ILACQUA: OK. And so what did you do - did Mass Ear and Eye enact a disaster plan, or anything to that extent?

QUESNEL: Yeah. I think, you know, their first thought -- as an ear surgeon, I have to admit, my first thought was, well, what would my role be in helping these victims or patients as they came into the hospital? And certainly, the first thing you think about with a bombing is that there's going to be more severe injuries and life-threatening injuries that may involve chest injuries, abdominal injuries, limb-threatening injuries, things that would, in general, require a general surgeon and a standard trauma team. But pretty soon after that, we started to think about, you know, a lot of these patients probably are going to be affected by hearing and ear-related problems, because that's certainly one of the most pervasive injuries in a bombing, given the huge explosive waves, pressure waves, and trauma that it can occur related -- can occur to the

ear, related to that. So we began thinking about how we were going to manage those patients. And simultaneously, it was certainly -- the staff had decided on their own, but it was also communicated through the hospital system that the intent was for all of the staff, really, to stay on standby at the hospital, everybody who was there already, to be available for whatever potential overflow of patients arrived at the Mass General Hospital, so that we could help in that way. We certainly have our own operating rooms here at the Mass Eye and Ear Infirmary, and so we can mobilize a large staff in that way. And I know the entire staff in the operating room stayed to be available for that. Everyone in the emergency room certainly stayed at that point, and it was a change of shift, and really it was an amazing thing to see how there was no questions asked, but really, everybody stayed to pitch in. I know our whole resident team also stayed to see what was going to occur in the afternoon, and what way we could provide help, either by assisting some of the staff of the Mass General Hospital, or by helping to manage some of the patients who had head and neck injuries or ear-related injuries.

ILACQUA: Excellent. And so on that -- did you receive patients that day? Did -- you know, was there overflow from Mass General?

QUESNEL: So we received patients through the Mass Eye and Ear emergency room itself, and so there were some patients who actually came into the emergency room in the hours right after the bombing with complaints of hearing loss, bleeding from the ear, ringing in the ear. Those were the main issues that patients had walked into the emergency room, and I would say they were probably on the round -- around the order of 10 or so patients that walked in that way. And then I was on call that day as the otologist on call, and later that night was really when we started hearing about the patients who had been admitted to the Mass General Hospital who had ear-related injuries that needed to be seen.

ILACQUA: Mm-hmm. And actually, had you ever personally dealt with victims of that nature? People who were involved in a bombing, people who had ear injuries as a result of that?

QUESNEL: So I've never dealt with anything of this extent, with this number of patients all arriving at the same time, with the same injury, from the same bombing. Certainly, in the course of training, most of us have seen some patients, generally military personnel, who have come back and have had ear-related injuries, such as holes in the eardrum, or hearing loss related to military service, in which they may have been exposed to a blast injury. Unfortunately, that

has become a more common mode of warfare [10:00] with recent conflicts. And so I've seen some patients related to that. But certainly never -- I've never seen patients in this volume arriving to the hospital, and certainly haven't seen civilians affected by a bombing. And there are so many other complexities in managing that type of patient, than managing a patient who had an injury that was maybe several months old, and they've actually had time themselves to heal and to cope and to deal with that. They may be trained to deal with that as military personnel, as well.

ILACQUA: Mm-hmm. Well, sort of as the afternoon was going on here, were you in contact with anyone outside of Mass Ear and Eye? Did you know what was going on in the city at the time?

QUESNEL: I can't say that I was in contact with anybody in the area of the marathon.

ILACQUA: But, like, anyone at home, like, did you -- I've heard a lot about people getting tweeted, that sort of thing. Did you -- was any of that going on for you?

QUESNEL: I didn't know anybody personally running the marathon. I knew of our team here, and certainly through the Eye and Ear, people were asking about the team of runners and how they were doing, and we were certainly worried for them.

But there wasn't anybody else that I was personally in contact with who was running the marathon.

ILACQUA: OK. So let's turn to actually -- as that week played out, could you describe a bit of what else was going on at Mass Ear and Eye? What was Tuesday like?

QUESNEL: So Tuesday -- so the -- one of our chief residents was on call overnight, and you're going to interview him, I believe, later this week, Dr. Aaron Remenschneider. And he began to receive -- he's -- receives the first calls about patients having ear-related injuries that were admitted to the Mass General for other more serious injuries, like limb-threatening injuries, loss of limbs, other chest and abdominal injuries. And as the night went on, and they were -- continued to be evaluated, it was clear that they had -- also had ear injuries. And so he was called first to go and see those patients, and really began seeing those. And on Tuesday, when I came in the morning, we began to go see those patients together, to evaluate them together, and many of those patients did have tears in the eardrum, called the tympanic membrane. So they had ruptures of the tympanic membrane. Some of them had shrapnel, which needed to be removed. Many of them still had symptoms of hearing loss or tinnitus, and so we began the process of asking our audiology colleagues to test

their hearing and to perform audiograms. And that's really what Tuesday was about. And so really the entirety of Tuesday, which was -- happened to be a research day for me, and so I had the day actually clear -- was able to be devoted, really, to going around, to seeing all those patients. And we probably saw between probably around 15 patients that day.

ILACQUA: Wow. So I'm curious about -- so do you start a certain type of care right then with ear injuries? Or --

QUESNEL: Right. What can you do to help these patients?

Right.

ILACQUA: Exactly.

QUESNEL: So it depends what the injury is. There's external injuries that were related to -- for example, shrapnel that was embedded, and that needs to be really meticulously removed with a microscope, to make sure you're not leaving foreign bodies behind, that can potentially be -- get infected in the ear. Some patients -- many patients, actually, had holes in the eardrum. And sometimes, depending on the way that the eardrum ruptures, if there are edges that can be roughly approximated, that may lead to a better outcome with healing for those patients. And so in those cases, we, with a microscope and micro-instruments, just re-approximated the edges, and sometimes

put a little -- what we call a paper patch on top of it, to hold the edges in place, to allow for healing. Other injuries included injury to the inner ear, with what's called sensory-neural hearing loss. And that's something that we can measure on an audiogram. And for patients with sensory-neural hearing loss, or symptoms of what probably indicates damage to the ear, such as tinnitus, ringing in the ears, for those patients, we [15:00] had a discussion with them about whether or not they wanted to start on oral steroids, which is a medication that can reduce inflammation. And I would say that it has not been born out in our literature, but it is suggested, at least, by animal work and by studies involving other forms of hearing loss, that there may be some benefit to starting these patients, early on, on steroids. That's obviously complicated by the fact that many of these patients had other medical issues ongoing at the same time, and the discussion with them was whether or not this, overall, was beneficial to them, or if because of their other related injuries, it was not beneficial to start them on steroids. And so those are really the things that you can do at -- in the immediate time period. They were also assessed for dizziness, to look for etiologies of dizziness, some of

which could be treated, and some of which was probably concussion-related or the form of mild TBI.

ILACQUA: And so it sounds like a lot of the healing processes, at least with your injuries, take a lot longer than the week. Usually when we talk about the Boston Marathon, it starts with Monday and ends with Friday in the lockdown. But this is certainly something that's going on far past that time. Could we turn and talk a bit about what you're doing now and how you got to that point?

QUESNEL: Right. So we actually began talking to colleagues around Boston when this occurred, since many otologists really had not had direct experience with treating a large number of blast-injured victims. And so we began talking to our colleagues around Boston, who also specialize in ear and hearing, and also spoke with some of our colleagues in the military, to get their advice and recommendations on how to best manage these patients, and to make sure we weren't missing any opportunities early on. Ultimately, many of these patients who had eardrum perforations did require surgeries, because they did not heal on their own. In those surgeries are, in general, performed in a similar way to surgeries that we perform all the time, that's very standard care for repairing an eardrum, with a few small exceptions. And that includes, for example, looking for

shrapnel in the ear, making sure there's no skin that has been embedded in the ear. Perhaps using an endoscope to look around to be sure of that.

So there's a few nuances to it, which we certainly all talked about as a group, and really our experience and learning went on even as the weeks went on from this. But the basics of how to repair it, and decisions about when to repair it, certainly are based on, you know, very well-known standard clinical medicine. So really, we began continuing to take care of these patients, and we actually formed a collaboration among the Boston area hospitals to coordinate our efforts in taking care of these patients. And we actually began a study in which we began prospectively enrolling patients to gather data on several things: one, their subjective complaints, related to the ear, so determining how they were affected by the bombing. For example, many patients have said that they -- even though they may have normal documented hearing, have said that they still continue to subjectively notice trouble hearing after the bombing. So we collected information like that.

We also collected objective data on the patients, in terms of their physician assessments, their audiometric data, which is their hearing test data, and information on

their thresholds of hearing, for example, at different frequencies. And we also collected quality of life data, by asking patients to fill out validated surveys on how their hearing-related quality of life, tinnitus-related quality of life, and dizziness-related quality of life was affected by the bombing. And so those patients were prospectively enrolled, and have been followed, as a group, among all of these Boston hospitals going forward. We opted not to ask patients to come in for any additional testing or any additional appointments, because we felt that that would have been a burden. But as we go forward, when they do come to the office for clinical care and follow-up, most patients have been more than willing to continue to fill out some of these surveys, so that we can continue to learn about [20:00] the impact of the bombing on these patients from an ear perspective and hearing perspective.

ILACQUA: Hmm. And could you describe a little bit about what you're learning from all of these surveys and tests, and where that's going?

QUESNEL: Yeah. So we've reviewed -- about a couple months ago. It's a little after the one year anniversary. We sat down and looked at all of the information that we had collected. Together, among all the Boston area hospitals, over 100

patients had been seen for ear-related complaints. So they had either walked into the clinic or the emergency rooms, or had been referred by having gone to the hospital for other bombing-related injuries for ear and hearing issues. And the vast majority of those patients had participated in the study. And so we looked back at the results from that, and what we found was that the majority of the patients did suffer tympanic membrane perforations, so they had holes in the eardrum. We looked at how many of those patients healed over time and how many of those patients required surgery. And what we found is that there was a variety of different injuries to the eardrum. Some had very small holes, and those tended to heal over time, and some had very large perforations, which were less likely to heal over time.

In general, the surgical outcomes were good, and they were similar to what you might expect from standard practice, although there was a concern, initially, that they might have had much poorer outcomes, given that it was a different mechanism of injury than the standard reason for which people get holes in the eardrum. So we learned that overall, they did well with surgery. We found that most people actually had normal hearing when you measure hearing on an audiogram, even after the bombing, which was

surprising, actually, given that this bomb certainly caused explosions with an incredibly high sound level that you would have expected to cause some long-term damage. But the majority of these patients actually ended up with normal inner-ear-related hearing, is what I should say. They have hearing loss related to the holes in the eardrum, but the inner ear was not particularly damaged from what we could measure on a hearing test.

That being said, as I mentioned before, many of these patients noted that they had a lot of difficulty hearing, even though their hearing was normal on the hearing test. And that certainly indicates that there probably is some hearing damage that's just below the level of what we can measure on a hearing test. And really, that has become something interesting that has emerged from this group of patients, and something we're going to pursue by offering these patients more testing that could maybe elicit and draw out differences in normal hearing, versus what has happened with these patients, in which they probably have trouble hearing in background noise, and hearing in noisy environments.

ILACQUA: Hmm. And so -- actually, do you think that the studies that you're doing and the -- well, really, do you think the studies that you're doing are going to -- change

the standard of care for patients who have ear injuries after bombing, or after having -- ? Yeah. After a bombing.

QUESNEL: I don't know yet.

ILACQUA: (laughs)

QUESNEL: (laughs) That's a big -- it's a big request, is change the standard of care, I think. I think, as a community, we certainly learned a few things that I alluded to before, in terms of how to manage these patients from a surgical standpoint, for example, and things that our military colleagues are very well versed in. And some of those things were discussed with our military colleagues, and that, we certainly learned going forward. I'm not sure how the study is going to change the standard of care. I think the point where we're at now is that we need to understand more about how hearing loss occurs, what the exact damage is at the level of the inner ear. And some of this is very well understood in animal models. And some of that work has been done right here at the Mass Eye and Ear Infirmary. But obviously, we don't see that in humans, and so where we're at now is to try to understand more about what the mechanisms of injury are, specifically, in terms of how the ear may be injured in a different way, related to a bomb, which is a single large blast that goes off, as opposed to,

for example, noise-induced hearing loss, which occurs over a patient's lifetime, and is cumulative over a long period of time.

So I think our first goal would be to try to understand more about what the -- what has been injured in the inner ear, and we're attempting to do that by offering some more testing, which hopefully will validate what these patients are telling us, to be able to tell them, yes, there is a difference in your ear than in a perfectly normal, healthy ear for someone your age. [25:00] So hopefully we can validate that, but that's really where we're at, in terms of changing what could then be offered for managing these patients going forward.

ILACQUA: Excellent. So I'm curious, actually. Could you talk about the One Fund Center?

QUESNEL: Yes, so the One Fund -- I think everybody has heard of, at this point -- which is a philanthropic organization that has given some financial systems to the victims of the marathon bombing, has now decided to move forward as what's called the One Fund Center. And that is going to be a three-pronged effort to offer services to victims of the marathon bombing for mental health-related injuries. And there is a group at the Mass General psychiatry department who is going to be managing that. The second prong is to

manage tinnitus, which has been incredibly prevalent in these patients. And again, tinnitus is a ringing sound in the ear that usually indicates some inner ear damage. And that is going to be overseen by Dan Polley, who is a PhD scientist here at the Mass Eye and Ear Infirmary. And then the hearing loss aspect for these patients is what I'm going to manage, going forward, along with colleagues including Dr. Dan Lee and our resident, Dr. Aaron Remenschneider, who has worked with us along the way, to try to offer these patients a better understanding and a deeper understanding of what the ear-related injuries are, what the hearing loss is, to offer counseling for these patients, going forward. There are some simple things that we can do, sometimes, to make hearing a little bit easier for these patients, depending on what the exact complaints are for them. And to make sure that they have access to every state-of-the-art hearing technology that we can offer and provide in this day and age. So that's really the goals of the One Fund Center, going forward, and that's going to be open its doors in just a week or two.

ILACQUA: Oh, wow. Well, so, really, we've gone through my list of questions. So at this point, do you have any other thoughts or stories that you'd like to tell us, that you'd like us to record?

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ILACQUA: [00:00] All right.

QUESNEL: I don't think I have any other stories.

ILACQUA: Yeah, that's no problem. So, on that note, I'm going
to thank you for taking the time to speak with me tonight.
And we're going to end the recording.

QUESNEL: Thank you.

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