

Sawbones Episode 96: The Unkillable Phineas Gage

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Intro (Clint McElroy):

Sawbones is a show about medical history. And nothing the hosts say should be taken as medical advice or opinion. It's for fun. Can't you just have fun for an hour and not try to diagnose your mystery boil. We think you've earned it. Just sit back, relax and enjoy a moment of distraction from that weird growth. You're worth it.

[theme song Medicines by The Taxpayers plays]

Justin:

Hello everybody welcome to *Sawbones*: A marital tour of misguided medicine. I'm your co-host Justin McElroy.

Sydnee:

And I'm Sydnee McElroy.

Justin:

Spleeeaaaagh!

Sydnee:

What was that?

Justin:

That's a sound I make for this week.

Sydnee:

This has been a rough week.

Justin:

It's been a rough week. If we could use-

Sydnee:

That's why our show is late and we're sorry.

Justin:

If we could use cursing on this show, we would be doing so.

Sydnee:

But we're not going to.

Justin:

It's not the worst problems in the world. People in the world got worse problems than this, but it doesn't seem like this when you're sleep deprived.

Sydnee:

That's right. Uh, poor Charlie has had strep throat this week.

Justin:

Oh.

Sydnee:

She's been sick and trying to talk an 11 month old into drinking when their throat is sore.

Justin:

Not, not tenable.

Sydnee:

It's very difficult.

Justin:

Untenable in fact.

Sydnee:

It's like she just doesn't understand.

Justin:

Hey kid.

Sydnee:

I'm like, look, this, this Motrin is gonna help and then dri- you gotta drink water, or-

Justin:

We got your best interest at heart.

Sydnee:

Boob milk, or something because you're gonna get dehydrated. And she just looks at me like I don't speak yet and I don't understand what you're saying, mother.

Justin:

Right. If you want me to stack some blocks on top of each other, hit me back. I will do that on command. No problem.

Sydnee:

But don't worry.

Justin:

You need me to ruin anything?

Sydnee:

[laughs].

Justin:

Do you have anything I can tear up or ruin?

Sydnee:

Would you like me to poop all over dad?

Justin:

No problem.

Sydnee:

'Cause I just did that.

Justin:

Oh, she did that this mo- oh, hatchi matchi.

Sydnee:

He was covered.

Justin:

Not-

Sydnee:

Justin was covered in poop.

Justin:

You think podcasting is all glamor, but my friends I'm here to tell you the life of-

Sydnee:

Yeah.

Justin:

... podcasting doctor and her, uh, lovable sidekick Podcasto the Clown.

Sydnee:

[laughs].

Justin:

[laughs] Is not all glamor. It's not all glitz.

Sydnee:

Poor, poor Podcasto. He, he picked up Charlie and her diaper was full of poop. And then he squeezed her tight and then he was covered in poop.

Justin:

Next week on *Sawbones*, I'm dead now. It's the worst.

Sydnee:

[laughs].

Justin:

So I have to bring you back. I don't know. The race is on, I, Sydnee just, here's all I want you to do with this. I don't want you to freak me out with hanging weird leg worms or anything. Just whisk me away.

Sydnee:

Mm-hmm [affirmative]. You just want a story, a story time?

Justin:

Just a, just a story. Just whisk me away.

Sydnee:

Okay.

Justin:

Transport me.

Sydnee:

I can do that. I can do, let's just, this isn't really about a disease or like a, a weird treatment. This is just a, how about a crazy story from the annals of medicine.

Justin:

The annals? [laughs].

Sydnee:

You gonna laugh about that?

Justin:

It's been a long week, gimme something.

Sydnee:

Okay. There you go.

Justin:

All right.

Sydnee:

Um, that is about, uh, a guy named Phineas Gage.

Justin:

I've never heard of Phineas Gage, Sydnee.

Sydnee:

That, see, and I'm glad that you say that. I think I get a warped perspective sometimes in medicine, because I assume that there are these stories that everybody has heard about.

Justin:

Mm-hmm [affirmative].

Sydnee:

And I think it's 'cause I heard it in medical school. I don't know, it just seems popular enough. Although most people who've done something in like psychology or psychiatry would probably know this as well. We'll certainly say psychiatry 'cause I said medical school, but psychology too.

Justin:

Okay.

Sydnee:

Maybe if you even just took some psych classes, you may have heard this story before.

Justin:

I'm ready. Tell me all about Mr. Phineas Gage.

Sydnee:

Okay. Well first of all, thank you to Catherine and Talia who both, uh, recommended this topic.

Justin:

Thanks y'all.

Sydnee:

Uh, this is a, a great, interesting story. So, um, so let's imagine-

Justin:

[making flash back noises]

Sydnee:

... [laughs] we are, it is 1823.

Justin:

Mm-hmm [affirmative].

Sydnee:

Uh, where things sucked worse than just your kid having strep throat to be fair.

Justin:

That's, that's although kids probably did also get strep throat.

Sydnee:

Well, I mean they did. Uh, you know who didn't get strep throat?

Justin:

Who?

Sydnee:

Young Phineas-

Justin:

Wow.

Sydnee:

... Phineas Gage, which is a great name.

Justin:

It's a good name.

Sydnee:

We didn't [crosstalk 00:04:20] good name. Phineas was the oldest of five children of Jesse and Hannah Gage and he lived in Grafton County, New Hampshire. And prior to the, the story that we're going to tell today, he was, I guess, just a regular healthy young kid.

Justin:

Average Joe.

Sydnee:

An average, well even maybe even an above average Joe.

Justin:

Oh yeah.

Sydnee:

Yeah. He, uh, so he, his family doctor, Doc Harlow, who is gonna take care of him through this whole crazy story that I'm gonna tell you, um, noted, had, had taken care of him since he was a kid and noted that before all of this, this stuff we're gonna talk about, he was in his words, a perfectly healthy, strong and active young man, 25 years of age. Uh, he noted that he had a nervo-bilious temperament.

Justin:

Nervo-bilious, uh, so nerve, something to do with nerves. And then bilious, like, bile? Is that the root?

Sydnee:

That's, great job, Justin. That's has, I mean that doesn't tell us anything about his temperament.

Justin:

Yep.

Sydnee:

But you figured out where those words came from.

Justin:

I think he's just nervy.

Sydnee:

No. It actually, this is a phrenology term and we've never, I don't think we've done...

Justin:

No.

Sydnee:

Did we do an episode on phrenology?

Justin:

I don't remember if we did.

Sydnee:

But, I don't think we did. If we didn't, we will. But anyway, a nervo-bilious temperament would mean that he was, um, it's probably a good thing. It meant that he was like energetic and very active and strong.

Justin:

Full of vim and vigor.

Sydnee:

Yeah. Vivacious, like, yeah, like that's the kind of guy he was, he was, um, 5'6, average weight. Um, and he, according to his family doc possessed an iron will and an iron frame, his muscular system being unusually well developed.

Justin:

Well, okay.

Sydnee:

He didn't even really have any, have any of the typical childhood illnesses. He survived most of the stuff that unfortunately wiped out the younger people in, in, back in the 1820s.

Justin:

So this, uh, this, uh, uh, this Doc Savage of a man, this, this hearty fellow, what was his, uh, what was his-

Sydnee:

He was a hearty fellow, I think that's fair to say.

Justin:

This hearty fellow. What was his, what was his thing?

Sydnee:

So, so as he grew up, he was not, he was not very well educated. He, uh, by all records was illiterate and instead he decided to pursue his, his strength, his natural, you know, vim and vigor as you put it.

Justin:

Mm-hmm [affirmative].

Sydnee:

Uh, to further himself in this world. And he worked in railroad construction working on the Hudson River railroad and he later became a blasting foreman.

Justin:

That sounds like a thrilling job.

Sydnee:

I thought it sounded like a thrilling job too. So I looked up what this was so I could understand better. I mean, I kinda, like, it's a, a guy who oversees like explosions and stuff, right?

Justin:

Yeah. I would, I would think so.

Sydnee:

So I wanted to like exactly what it entailed to be a blasting foreman especially back in the year, what are we talking about? Like the 1830s now.

Justin:

Mm-hmm [affirmative].

Sydnee:

And 1840s, okay?

Justin:

You have a special connection to this railroad, railroads run in your blood.

Sydnee:

That's true.

Justin:

You have, you have rail steel running through your veins.

Sydnee:

[laughs] That's true. My dad and my grandpa worked for CSX railroad, which of course was Chessie and Seaboard systems. Mm-hmm [affirmative].

Justin:

And the X nobody knows.

Sydnee:

The X, nobody... My dad used to tell me that when I was little, that they were, the C was for Chessie the S was for Seaboard. And then the X is like the mysterious factor that combines the two.

Justin:

[laughs].

Sydnee:

I think that was the way he explained it to me. And I used to think like, that's fascinating. When, I mean, it's really just probably like railroad, right?

Justin:

Probably. Yeah.

Sydnee:

Or something or-

Justin:

Or something, just X.

Sydnee:

I don't know. Just X.

Justin:

I don't know. Just they needed another one.

Sydnee:

[laughs]. Network.

Justin:

CS was taken.

Sydnee:

[laughs]. Um, so in order to construct a railroad, uh, especially back in the 1800s, there's gonna be stuff in your way and you're gonna have to get it outta your way. right?

Justin:

Sure.

Sydnee:

Like mountains and rocks and things-

Justin:

Yep.

Sydnee:

... that are not, that you can't like dig. So I mean, like, I guess if it was dirt, you could just dig it outta the way. But if it's rock, you gotta blow it up-

Justin:

Mm-hmm [affirmative].

Sydnee:

... to move it outta the way so you can build your railroad.

Justin:

This seems like pretty rudimentary, but go on.

Sydnee:

Okay. So in order to blow it up, what you would've done at this time was, uh, bore a hole into a rock.

Justin:

Okay.

Sydnee:

Whatever the rock that you wanna get rid of.

Justin:

Mm-hmm [affirmative].

Sydnee:

And then you would put gun powder down of the rock hole and you would, um, lightly tamp that down. Lightly.

Justin:

Okay.

Sydnee:

And then put a fuse in it. And then you would pour a bunch of sand, something inert over it. So that, then you could really pound that down into the hole with, and, and then you would, I guess, light that on fuse on fire and-

Justin:

And run.

Sydnee:

I would run and yell something probably. I'm assuming fire in the hole.

Justin:

Egads.

Sydnee:

Something like get out of the way.

Justin:

What did I, what'd I do?

Sydnee:

Run.

Justin:

Oh, no.

Sydnee:

"Everybody, ah, railroad coming, railroad coming."

Justin:

I think you should act like it's a surprise every time. And then just be like, I just kidding you guys.

Sydnee:

Oops.

Justin:

I knew, I knew that was gonna happen.

Sydnee:

Wha-oh!

Justin:

I'm a professional.

Sydnee:

Um-

Justin:

Just lighten things up. It's hard out there.

Sydnee:

Now, now in order to, to, to tamp down the gun powder in the sand, you would use something, um, called a tamping rod.

Justin:

Mm-hmm [affirmative].

Sydnee:

Makes sense, right?

Justin:

Okay.

Sydnee:

It's just a big iron rod, okay? So this is basically what Phineas was doing. He was boring holes in rocks, pouring in the gun, powder, the fuse, the sand, and then pounding it down with a rod. And then, like I said, lighting on fire and running.

Justin:

Got it.

Sydnee:

So on September 13th, 1848, he was hard at work, uh, building the Rutland and Burlington railroad in Vermont. And he was pretty well respected in his job he had been doing it for a while. He was good at it. Um, he even at some point made his own like custom tamping rods.

Justin:

Mm-hmm [affirmative].

Sydnee:

Just-

Justin:

Just with like cool flame decals on the side and like a skull on one end.

Sydnee:

[laughs] Let me pimp your rod.

Justin:

Pimp your rod [laughs].

Sydnee:

[laughs] Uh, so he, uh, yeah, I don't know. I don't know. He was not using one of his, his custom tamping rods at the time.

Justin:

Right. He was using one of brand X-

Sydnee:

He was actually doing one-

Justin:

... generic tamping rods.

Sydnee:

Now I read some accounts that this was one that was made just for him, but most agreed that this was something that a blacksmith made for somebody else 'cause it was a special kind of tamping rod.

Justin:

Mm-hmm [affirmative].

Sydnee:

And it was actually tapered at one end.

Justin:

Mm-hmm [affirmative].

Sydnee:

Um, and a, I don't know, he borrowed it. It was lent. I don't know. But anyway-

Justin:

It wasn't, it wasn't old tamping his classic tamping, his favorite tamp rod.

Sydnee:

His favorite tamping rod.

Justin:

Wonder boy his tamping rod that he-

Sydnee:

It was-

Justin:

... formed from a tree branch that was hit by lightning.

Sydnee:

[laughs] No. Are you, are you referencing *Teen Titans*?

Justin:

Well, no, I was referencing *The Natural*.

Sydnee:

Oh, okay.

Justin:

But probably also by extension *Teen Titans*, I guess.

Sydnee:

[laughs] So anyway, he, he did his usual routine. He made a hole in a rock. He filled it with gun powder and... Then the account gets a little fuzzy as to what went wrong 'cause something goes terribly wrong here. Terribly wrong.

Justin:

One quick point. I think I was actually referencing *The Simpsons* referencing *The Natural* because I re- I of course me I've never seen *The Natural*, but somewhere in there is something someone nod and if not laughed, perhaps nodded and smirked knowingly [laughs].

Sydnee:

[laughs] And there's somebody out there who just caught that *Teen Titans* episode with the staff and the tree and the staff tree and then, yeah.

Justin:

Yeah. It works on so many levels.

Sydnee:

[laughs].

Justin:

It's probably the best reference. Anybody who's not seen *The Natural* has ever made about *The Natural*. I think we can all agree on that point.

Sydnee:

What's *The Natural* now?

Justin:

Uh, moving on.

Sydnee:

So anyway-

Justin:

I don't know. I haven't seen-

Sydnee:

[laughs].

Justin:

Robert Redford hits a baseball so hard it breaks a light. That's literally all I know about it. And I think he's got a bat, a wonder boy, but that might have just been with Homer Simpson called his bat in *The Natural* parody of The Simpsons.

Sydnee:

Well, how did you even know it was a parody of *The Natural* if you've never seen *The Natural*?

Justin:

Culture osmosis. I think, I don't know. Like, I don't know. I, this is one of those things you pick up from watching, like, academy awards, recaps or something, like, when they have those montages about like, remember all the great times that baseball bats broke, broke lights.

Sydnee:

You remember all the p- people who had died?

Justin:

No, like not the memorial one. Like here's some great scenes of baseballs smashing lights.

Sydnee:

Oh, here's why we love movies.

Justin:

Yeah.

Sydnee:

Okay.

Justin:

Why we love movies.

Sydnee:

Do you wanna-

Justin:

And *The Simpsons* and the *Teens Titans*.

Sydnee:

[laughs] Do you want me to talk about Phineas Gage some more?

Justin:

I would give you anything to talk about. Phineas Gage some more.

Sydnee:

So Phineas Gage is, is hard at work, tamping down this, you know, this thing is, this stuff and this rock is gonna blow up. Anyway, at this point, something went wrong, either he, I think what, what is most likely he was distracted?

Justin:

Now, I, I feel like you're about to get to the meat of this story.

Sydnee:

Yeah.

Justin:

Are you sure you don't wanna stop and talk about who's tamping rod he was using for a few more minutes first.

Sydnee:

[laughs] shut up.

Justin:

I wanna regularly even visualize this.

Sydnee:

This, this tamping rod is important, okay?

Justin:

Okay. Okay. Got it. Check offs tamping rod.

Sydnee:

That's why I'm talking about the tamping rod, so it's important. And there are people who know this story who are going yes, obviously. Anyway-

Justin:

Listen to another podcast.

Sydnee:

He was, he was distracted.

Justin:

Go listen to *Stuff You Missed in History Class*. They, they cover stuff you don't know about.

Sydnee:

[laughs].

Justin:

This is intro level.

Sydnee:

He was distracted for a second and he looked away. And it is unclear if, when he looked away, he was doing the actual tamping and he knew that there was no sand in the hole yet and he was just trying to lightly tamp down the gunpowder or, 'cause you would lightly tamp gun- I mean, it's gunpowder.

Justin:

Mm-hmm [affirmative].

Sydnee:

You wouldn't be careful. Or if he had thought that the sand, 'cause there was another guy pouring the sand in the hole. If he thought that the other guy pour the in the hole and he wasn't really paying attention so he started tamping much more vigorously 'cause once the sand's in there, you can just really like-

Justin:

Just tamp away.

Sydnee:

... beat the crap out of it. Anyway, one way or another as he's tamping, he strikes the rock itself.

Justin:

Mm-hmm [affirmative].

Sydnee:

Now as anyone who has frantically tried to make a fire on *Survivor* can tell you your goal when you're striking, you know, flint and stone and all that stuff together.

Justin:

Coconut fibers.

Sydnee:

Yes. Is to make a spark, right?

Justin:

Right.

Sydnee:

Now your goal when you're tamping down gun powder in a hole that you're standing over-

Justin:

It's the inverse.

Sydnee:

Is not to make a spark.

Justin:

It's not that.

Sydnee:

Not unfortunately, when he struck the rock with his tamping iron, he did in fact make a spark.

Justin:

Bad job.

Sydnee:

Which of course hit the gun powder and caused an explosion.

Justin:

Sure.

Sydnee:

Now this tamping rod [laughs] that he's using-

Justin:

Mm-hmm [affirmative].

Sydnee:

... to give you a brief description is three feet, seven inches long, okay?

Justin:

Okay.

Sydnee:

It's an inch and a quarter in diameter.

Justin:

Got it.

Sydnee:

And it weighs about 13 and a quarter pounds. And it's tapered on the end. That is-

Justin:

That's a, that's a heck of a rod.

Sydnee:

Yes. And it's tapered on the end that is next to his head-

Justin:

Okay.

Sydnee:

... next to his face.

Justin:

Got it.

Sydnee:

That he is, you know, vigorously, pounding up and down next to his face. Um, the explosion caused the rod to spring back up out of the hole filled with gun powder.

Justin:

Okay.

Sydnee:

Uh, directly through the head of poor Mr. Gauge. It entered just below his left cheekbone-

Justin:

Mm-hmm [affirmative].

Sydnee:

... passing behind his eye and up through the top of his head.

Justin:

Mm-hmm [affirmative].

Sydnee:

It landed about 80 feet away covered in blood and some bits of brain.

Justin:

Well Syd that's gonna do it for us on *Sawbones*. I gotta say one of our shortest episodes and honestly, one of our most puzzling, not sure why that grim little anecdote was necessary the death of Phineas Gage.

Sydnee:

Nope. Nope.

Justin:

What a sad, sad tale it was. Anyway we're brought to you by Max-

Sydnee:

See, you would think, you would think that he died at this point.

Justin:

Mm-hmm [affirmative].

Sydnee:

But the story does not end here.

Justin:

He does not die here.

Sydnee:

He, he does not die at this time.

Justin:

Phineas Gage does not, not die at this time.

Sydnee:

[laughs] No. Uh, Phineas fell down, according to accounts, he fell down he convulsed a bit.

Justin:

Mm-hmm [affirmative].

Sydnee:

Um, and then after a few minutes he sat-

Justin:

He farted, probably.

Sydnee:

[laughs].

Justin:

Like probably, right? He probably evacuated his bowels. One would think.

Sydnee:

It's not documented.

Justin:

Okay.

Sydnee:

Then he sat back up.

Justin:

Well, who would tell? I would keep that secret.

Sydnee:

This is all well documented.

Justin:

Okay.

Sydnee:

There are many accounts of this.

Justin:

Got it.

Sydnee:

And who wouldn't have written about this?

Justin:

Right. Yeah.

Sydnee:

You won't believe what I saw at work today.

Justin:

I would invent live journal right there just so I would have that to post on it.

Sydnee:

So then he sat back up and started talking to people.

Justin:

Okay.

Sydnee:

I'm assuming saying something like, ow.

Justin:

When's lunch?

Sydnee:

Oh God, get me out of here. How did this happen? Um, he's alert and awake by all accounts, talking to people normally. And they, uh, pop him in an ox cart and take him back to the hotel.

Justin:

Mm-hmm [affirmative].

Sydnee:

Um, at this point he encounters Dr. Edward Williams, who is the, the local doctor. He's, he's not at home, remember, he's out in Vermont doing this work. Uh, and he, he describes when he found Gage sitting on the porch of this hotel.

Justin:

[laughs].

Sydnee:

And he says that when he drove up, Gage looked at him and said, "Doctor here is business enough for you."

Justin:

[laughs].

Sydnee:

He writes the, uh, Dr. Williams writes that, he noticed the wound, as soon as he alighted from his carriage, the pulsations of the brain being very distinct. He said, he described the top of, uh, Gage's head as appearing, somewhat like an inverted funnel.

Justin:

[laughs].

Sydnee:

So he examines him and Gage is telling him what's going, what happened? He's describing to him what, what went wrong and what just happened.

Justin:

Yeah.

Sydnee:

And he is not believing him at first. There's no way. There's no way that this giant iron rod just passed through this guy's head through his brain, and now he's sitting here talking to me.

Justin:

Right.

Sydnee:

It's impossible. And especially with as okay as he seems at first.

Justin:

Yeah.

Sydnee:

But then the doctor notes that at this point after he's told him some of his story, uh, Phineas decides to stand up. And at this point, Mr. G got up and vomited. This is the doctor's words, the effort of vomiting pressed about half a teacup full of the brain, which fell upon the floor and then he passed out.

Justin:

I just hope it wasn't the part that he had his ATM pin on. 'Cause man, that is such a pain in the patoot to get that reset. I would just, that would be really unfortunate.

Sydnee:

I really appreciate that the measurement we're using the standard of measurement for the brain at this point, the amount of brain is half a teacup full.

Justin:

Well, it fell into a teacup. That's the only reason that they...

Sydnee:

Eww.

Justin:

Gross.

Sydnee:

I think this says a lot about Dr. Williams. He seems, he seems like a very proper gentleman. "That's about half a teacup full." Uh, now at this point, um, Dr. Harlow is gonna get involved and Dr. Harlow, when he arrived, I

just love his description of this situation. This is a very typical doctor, uh, description of this.

Justin:

Mm-hmm [affirmative].

Sydnee:

He described it all as truly terrific.

Justin:

Syd I have three questions for you, blah? Huh? And whaaat?

Sydnee:

Justin I would love to answer.

Justin:

Whaaat?

Sydnee:

I would love to answer all three of these questions right after we visit the billing department.

Justin:

Let's go.

[ad break]

Justin:

Sydnee, I have been obsessed during that commercial break I've been trying to focus with all of my, uh, uh, uh, all of Pocasto's energy went into those, advert- advertisements, but back, in the back of my head, way, way, way, way, way deep, where I keep all of my, uh, knowledge about *EverQuest* from college, which by the way, should I, if this ever happen to me, I hope that's the part of my brain gets swooshed out. I don't need to remember that stuff. I don't need to remember where to get the Testament of Vanear, all that crap, get that squeezed out.

Sydnee:

Now what's *EverQuest*?

Justin:

Uh, so what, what's the deal?

Sydnee:

Okay.

Justin:

Dr. Harlow.

Sydnee:

So-

Justin:

That's where we left things.

Sydnee:

So this is not a sad story, like I, like I promised you, this is where, this is our happy fairytale story.

Justin:

Well, I, well it's our perspective isn't it Syd? I mean, oh, Phineas has probably had better days. I mean, it did it wasn't his last day, which is pretty sweet.

Sydnee:

It was not, it was not in fact his last day. Uh, so at this point, like I said, he, he has this big hole in his face and head where an iron rod passed through.

Justin:

Yeah.

Sydnee:

Uh, Dr. Williams is there Dr. Harlow arrives to assist. And I guess Dr. Harlow had even had a little bit of, of surgical training. Dr. Williams hadn't really. Um-

Justin:

For a second I thought you were about to say a little bit of rum to drink or a little bit, he'd been drinking a little bit that day, which made all this so much more frightening.

Sydnee:

I'm certain when he was done with his, with, with the procedures that are about to ensue, he had a little, a little bit of rum or something.

Justin:

Yeah.

Sydnee:

At the end of this-

Justin:

Take the edge off.

Sydnee:

I think, I think he'd earned it. So Williams and Harlow who are really just making all this up as they go-

Justin:

Mm-hmm [affirmative].

Sydnee:

... because this is, I mean, as you can imagine, this is kind of untread ground.

Justin:

Sure.

Sydnee:

This is not familiar territory. Um, they decide to, they're gonna clean up this wound. So they shave his head, they of all the stuff that's kind of in the way, the debris, the blood clots and bone bits. And they note that they take about an ounce or so of brain out.

Justin:

Mm-hmm [affirmative].

Sydnee:

I don't know how much that is in a teacup measurement, but about an ounce.

Justin:

Not a standard measurement.

Sydnee:

Um, and then they start kind of bandaging the whole thing up loosely.

Justin:

Mm-hmm [affirmative].

Sydnee:

Um, covering it, uh, they go ahead and, and bandage up the wound, uh, on his face, on his cheek, uh, same thing, leaving it loose so it can drain, they know to do that. Um, and then he also had some burns on his arms. And so they, they kind of take care of that too. He seemed okay at that point, he's still to talking to them.

Justin:

Hmm.

Sydnee:

He still seems like himself. He noted that he didn't really wanna see his friends at this point. He didn't want anybody to come visit him because he'd probably be, be back at work in a few days anyway and he would just talk to 'em then.

Justin:

Mm-hmm [affirmative].

Sydnee:

It was his plan at this point.

Justin:

Hmm.

Sydnee:

Now of course, that didn't happen.

Justin:

Sure.

Sydnee:

Things didn't go that smoothly. Uh, Phineas had a long and, and difficult recovery. These were in the days before we really understood infection and antiseptic technique.

Justin:

Yeah. Yeah. I was afraid of this.

Sydnee:

Uh, and he's got a big giant hole in his face, in his head. And so he develops infections, uh, a fungal infection at one point.

Justin:

Ooh.

Sydnee:

Um, at, uh, he begins to have granulation tissue, which is like a healing tissue that, that starts to form kind of sticking out of the head wound and-

Justin:

A scar tissue? It's a scar tissue?

Sydnee:

Sort of, sort of the healing stuff before scar tissue.

Justin:

Okay.

Sydnee:

And so it's kind of a good thing, but it's kind of sticking out of the head wound. So like periodically, like, Dr. Harlow is like cutting stuff out of his head wound. Um, at one point his eyeball was kind of poking out of his face a little bit, but Harlow actually seems to be pretty good with keeping up with all this stuff.

Justin:

All things considered.

Sydnee:

Yeah. I mean, I mean, the fact that the time period and like Harlow probably didn't have any training in this kind of thing, and how many patients had even had this happen?

Justin:

Mm-hmm [affirmative].

Sydnee:

You know, uh, this, this doc seems to be on top of things. He keeps everything open and draining. At one point he has to kinda cut open his face and drain a big abscess.

Justin:

Eugh.

Sydnee:

Like in, like over his forehead and eye area, um, he keeps trimming back like excess tissue and all this. And overall he does a pretty good job of keeping Gage alive. Um, and over time... Now, first things get really bad, right?

Justin:

Sure.

Sydnee:

So he is doing okay. And then he kind of is in a semi-comatose state for a while. It's real touch and go. His family actually even had him measured for a coffin and picked out clothes and stuff for his funeral, thinking that, I mean, that he probably wasn't gonna make it.

Justin:

Right.

Sydnee:

Um, but he starts doing better. Doc Harlow pulls him through and by November he's finally able to go back home. Um, and he is even up working around the farm.

Justin:

Oh.

Sydnee:

Now his mom notes that he can only work about a half day.

Justin:

Yeah.

Sydnee:

So, I mean, he's still pretty *lazy*, right?

Justin:

Yeah. Come on, man.

Sydnee:

Uh, but, but he's actually doing pretty good. Um, and he's returned to somewhat of like a, a functional state and he feels okay. And, and it's kind of a success story, uh, and word of this starts to spread.

Justin:

Sure.

Sydnee:

Right?

Justin:

Yeah.

Sydnee:

'Cause this guy had this big iron bar pass through his head and he's still alive. So, uh, at this point, um, other people in the medical world begin to take notice and he's invited to Harvard so that he can meet before one of the Boston medical societies and, um, he can meet the doctors and they can one, confirm that this really happened 'cause a lot of people were like, there's no way this is true.

Justin:

Right.

Sydnee:

There, there's no way this is possible. Um, but all the docs wanna look at him and look at his head and talk to him and see like did this really happen? And a lot of people, you know, end up believing him. Um, he at one point was presented in, in Barnum's American Museum, not the circus, which is-

Justin:

So, is very dignified.

Sydnee:

It was very dignified. He stood there, um, holding his tamping iron, this tamping iron by the way is with him all of his life.

Justin:

Yeah.

Sydnee:

He, I mean, who wouldn't want that souvenir?

Justin:

He's halfway to like a crime fighter at this point. I mean like seriously, this is an origin story.

Sydnee:

He gets it and he takes it with him. And so he, he appears in the, in Barnum's American Museum holding this tamping iron, um, and he's even paid various places for some like public appearance- appearances, um, you know, kind of like look at this guy who had a hole in his head and here's his tamping iron. And can you believe this-

Justin:

Can you believe it?

Sydnee:

... wild medical thing that happened. Um, but after people kind of lose interest in seeing that kind of thing, he decides, you know what? This really isn't where I wanna, um, I'm not into this as a way to make my living.

Justin:

Mm-hmm [affirmative].

Sydnee:

I don't wanna be this like kind of medical oddity show.

Justin:

Sure.

Sydnee:

Uh, and so instead he moves down to Chile.

Justin:

Okay.

Sydnee:

Uh, and gets a job as a stage coach driver.

Justin:

All right.

Sydnee:

And so he works there.

Justin:

Okay. That's fine. Great.

Sydnee:

Yeah. Continues for 12 years.

Justin:

Whoa!

Sydnee:

Doing fine. Now, 12 years later, things are not going so well. Um, for whatever reason, he begins to have some seizures at this point.

Justin:

Mm-hmm [affirmative].

Sydnee:

Uh, they prevent him from performing his job, after a while he has to return... Actually his family lives out in San Francisco at this point so he moves out that way to be with family. Um, he continues to have seizures, um, I think even Dr. Harlow came and visited him again and, and nobody could really help him at this point and-

Justin:

All in all though, that's a pretty good run, you know?

Sydnee:

Yeah. And he-

Justin:

That's a pretty darn good run.

Sydnee:

He, he did pretty well until then. So, so he died in May of that year. Um, but he lived 12 years after a, an iron rod passed through his face and head.

Justin:

Now what I wanna know is like, okay, so we know he lived, but like what, what sort of effect did, did it have on him?

Sydnee:

That's, see, that is the, the life after death that Phineas Gage has had. So, um, if you have heard about him, you have either, unless you're just interested in reading about this kind of stuff have, have heard about him in medical school or perhaps you took some psych course at some point, even introductory psych texts, two third of them, two thirds of introductory psycho- psychology books-

Justin:

Mm-hmm [affirmative].

Sydnee:

... tell this story. So you may have heard about this before, and that is because Phineas Gage, uh, frames a lot of what we think we know about the frontal lobe.

Justin:

Mm-hmm [affirmative].

Sydnee:

So at least part of, one of Gage's frontal lobes was blown away by this, by this explosion and the tamping iron, um, maybe part of his other temporal lobe. I'm not really sure. Um, and there were reports initially, and this is what I was taught actually, uh, when I first heard this story, there were reports about his behavior after he recovered, uh, that he was completely different that before he was a nice, normal, healthy guy, you know, polite, friendly, hardworking, and that after he, he covered from the incident and went back out into the world, the reason that he couldn't go back to his initial job is because of how inappropriate he was, how vulgar, how, uh, how much profanity he used. He was violent. He was, um, inappropriately sexual and just overall a big jerk.

Justin:

Yeah.

Sydnee:

Um, so a lot of people use this as evidence for the fact that the frontal lobe is, and, and we say this a lot, it's where the who of you exists.

Justin:

Mm-hmm [affirmative].

Sydnee:

It's where what makes you is your personality, um, not so much the what. Doesn't make you breathe and stuff, but it makes you, you know?

Justin:

Sure.

Sydnee:

Makes Justin, Justin.

Justin:

Gotcha.

Sydnee:

I'm sorry. Podcasto, Podcasto.

Justin:

Thank you. I appreciate it.

Sydnee:

Um, and then if you, if you damage the frontal lobe that you're going to drastically change someone's personality.

Justin:

Mm-hmm [affirmative].

Sydnee:

Um, and so there were some, some people who wrote that about Gage that later after it was all said and done, he was, he was really, you know, a jerk. Um, but that wasn't consistent, uh, as I read into this, actually there was still just as many people who say he really hadn't changed that much-

Justin:

Hmm.

Sydnee:

... after the injury. Um, and I had to, I had to read about what goes into becoming a stage coach driver-

Justin:

Mm-hmm [affirmative].

Sydnee:

... because this is the main or argument. That's why I mentioned that this is the main argument against him being, um, really, uh, unable to function after the incident, in order to be a stage host driver, you have to be extremely hard working and organized and driven. You have to work like 13 hour days, um, doing an incredibly difficult, like, physically and mentally demanding task, you know, guiding the horses and, and navigating. Um, he was also in a different country and, uh, there were no accounts that he spoke the language when he went there.

Justin:

Yeah.

Sydnee:

Um, and so he was able both to, kind of, you know, navigate that as well. So it seems unlikely that he was, you know-

Justin:

A disaster.

Sydnee:

... violent and yelling at people and, and cussing at everybody-

Justin:

Yeah.

Sydnee:

... and that kind of thing, because how would he have functioned? Um, so this may all be apocryphal. It may not be true, but this sparked conversations for, for, for decades since, um, phrenologists used it as evidence for their craft phrenology, that it destroyed his organs of benevolence and veneration. And so that's why he was such a jerk afterwards.

Justin:

Mm-hmm [affirmative].

Sydnee:

They also said that it destro- destroyed his organ of comparison. And so they said that afterwards, he couldn't tell you, like, he'd, he'd give you like a thousand dollars for something that would cost 5 cents.

Justin:

Yeah.

Sydnee:

I don't know some kind of *Rain Man* reference, I guess. Uh, psychologists have used this to explain that the, you know, the frontal lobes are where the personality sit. And so if you just destroy the frontal lobe, you know, then somebody changes drastically, uh, surgeons kind of saw this as like a challenge.

Justin:

Kind of a call to arms.

Sydnee:

Yes. Like, look, we can remove part of the brain and you can still be alive. So there's all kinds of brain procedures that we can try now.

Justin:

Huh.

Sydnee:

So this, this probably, uh, sparked a lot of more, a lot more interest in brain surgery 'cause we didn't even know if you could do this to the brain and people survive. Um, but all in all, a lot of what we know or what we have thought we knew about the frontal cortex throughout, you know, the last hun- um, you know, a hundred and almost 200 years is related to this, is related to this case.

Justin:

Wow.

Sydnee:

Which is really interesting and it, and it may be wrong. Although today we, we do note the, that people who have frontal lobe injuries, um, can cha- can be changed. They can have, uh, impulse control problems-

Justin:

Mm-hmm [affirmative].

Sydnee:

... and, and things like that. But, um, but it's been very interesting because this one man, this unfortunate circumstance that he manages to survive has, has shaped a lot of what we think we know about psychology and neurology and neuroscience.

Justin:

Thank all so much for listening to this episode of *Sawbones*. We hope you've, uh, enjoyed it. Thank you Sydnee for helping to distract me from how little, uh, we've slept this week. I appreciate that.

Sydnee:

Well, you're welcome.

Justin:

Uh, we're a part of Maximum Fun Network, which is a podcast networking fun at maximumfun.org. There's a ton of great shows there. If, uh, possible, I'd like to promote, uh, uh, one of my own programs this week, uh, *My Brother, My Brother and Me* there's an advice show that we do. Uh, we did an all, uh, a sponsored episode, uh, that was completely sponsored by Totino's makers of pizza rolls. It is a 45 minute show all about pizza rolls, which doesn't sound good.

Sydnee:

Now, do you also cover the crisp and tasty pizza and the party pizza?

Justin:

That's a Jen's product, J-E-N-O-S, which is also part of the Totino's family.

Sydnee:

Right.

Justin:

So you know we do dip in there. Absolutely.

Sydnee:

Okay. Good. Those are my favorites.

Justin:

Uh, you can find that at mbmbam.com or on iTunes, where you can find all the Maximum Fun shows, uh, thanks to the Taxpayers for letting us use their song *Medicines* for the intro natural of our program. Thank you, uh, to those of you who are already signed up to come see us when we go to the Pacific Northwest at the end of August, uh, if you live in Seattle or, uh, uh, Vancouver, or you can get there, go to, uh, bit.ly/mbmbamseattle or bit.ly/vanmbmbam. And uh, you can, uh, you can come see us live with *My Brother, My Brother and Me*. It's gonna be fun.

Sydnee:

Yeah. Come check us out. Also I forgot to mention, if you wanna see Phineas Gage's skull-

Justin:

Yeah.

Sydnee:

... and tamping iron, you can go to Harvard Medical Schools Warren Anatomical Museum.

Justin:

Well, I'm booking tickets, uh, and in the meantime, uh, until the next Wednesday, hopefully with any luck, our baby stays healthy. I'm Justin McElroy.

Sydnee:

I'm Sydnee McElroy.

Justin:

And as always, don't drill a hole in your head.

[theme music plays out]

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