Adult Scoliosis Treatment Options to Improve Your Quality of Life
Webcast
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Laura Osborn

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Introduction

Andrew Schorr:
Scoliosis or curvature of the spine affects about two to three percent of our American population. Usually it’s diagnosed during childhood, but sometimes the symptoms linger in adulthood or even show up then. What are the treatments for adults, and when does surgery come into play? We’re going to find out with our expert from OHSU next on our "Ask the Experts" program.

Hello and welcome to our "Ask the Experts" program sponsored by Oregon Health and Science University and produced by Patient Power. I’m Andrew Schorr. Thank you so much for joining us. We’ve previously discussed curvature of the spine or what’s called scoliosis in children and what can be done about it, and if that affects someone in your family I urge you to listen to our program with Dr. Matthew Halsey, but what about in adults?

First of all there could be children who grew up, and there are scoliosis problems that become more severe, more painful, interfering with their life. What do you do then? And then there are people who develop scoliosis as adults. What do you then?

Laura’s Story

Andrew Schorr:
We’re going to learn all about diagnosis, treatments, and complications to be aware of as we meet with a leading spine surgeon from Oregon Health and Science University in just a minute, but first let’s meet somebody who has been affected by scoliosis, and that is 58-year-old Laura Osborn who is from Portland.

Laura, growing up in the Bay area around San Francisco you did have scoliosis right?

Laura:
Right.
Andrew Schorr:
And so did it interfere with your life, or were you just aware of it, and how did you even become aware of it?

Laura:
I was aware of it just being told that I had it as a kid, but I was involved in a very physical fitness family, we’re all swimmers, so it just never bothered me.

Andrew Schorr:
So there you are back in Palo Alto, you’re a competitive swimmer, maybe there’s some curvature going on, but you just go on with your life. Let’s flash forward to you’re in your late 40’s, you’re married, you have kids who are grown, I know now you have nine grandchildren, and one day you are starting to have what, pain?

Laura:
The pain was the biggest factor, and I didn’t even realize then it was related to my back. I thought it was related to my leg and my knee.

Andrew Schorr:
Now I understand you had an old knee injury, so you go to the doctor about your knee, and what happens then?

Laura:
They sent me in and cleaned out my knee, and they thought it might just be a little arthritis, and I recovered from that but was still having this pain in the lower left part of my back where I couldn’t stand for more than 20 minutes or walk any long distances, that kind of thing, or sit in one position for more than about 20 minutes.

Andrew Schorr:
There are a lot of people in that situation. They say, ‘Hmm maybe I’ll go see a physical therapist or a chiropractor or get a massage.’ What did you do?

Laura:
I did all of those things and acupuncture. I did that for about, well probably a total of five years, but the last two years really intent as far as just zeroing in on the back and the lower back because we realized it was not my knee, it was my back. They had taken an x-ray, and it pretty much looked like a railroad that had been washed out.

Andrew Schorr:
That’s what I was going to ask you. So was it apparent to you and these providers you went to, the chiropractor, that there was scoliosis going on?

Laura:
Oh yes, and my back, the bones in my back actually jutted out for probably six inches towards the middle of my back down to the bottom of my back.
Andrew Schorr:
So you get to some point where something hits you that you’ve got to go further and maybe see an orthopedic specialist. Tell us about that moment for you.

Laura:
I couldn’t sit in a hard chair because the bones in my back would hit the chair, and I finally just got tired of it and went back to my orthopedist and said, you know, what can I do, and he suggested I go to the spine center and see Dr. Hart.

Andrew Schorr:
Now if you were looking at yourself in the mirror, and did you ever have a moment like that what did you see?

Laura:
Yes. I saw my bellybutton was crooked.

Andrew Schorr:
Oh goodness.

Laura:
Yes, it was going to the left.

Andrew Schorr:
So you go see a renowned spine surgeon who we’re going to meet in just a minute, Dr. Robert Hart at OHSU. So I know you’re not a fan of surgery or big interventions. Many of us would be very hesitant about that, but you went. So tell us about that because eventually you did have surgery, and you’ll tell us about that, but going were you scared? Where were you just about this whole situation?

Laura:
I was very scared. Maybe part of mine was just a fear of having somebody cut into my back, and that probably has a little bit to do with my age, and years ago back surgery was like you only did it as an absolute last resort. You could get paralyzed, you know, blah, blah, blah. So that was my fear and then recovery. You know, would it hurt, you know me being out of work that long, and would I recover? I mean I just, there were a lot of variables, which I like all my ducks in a row before I do anything, and Dr. Hart was absolutely wonderful in providing me any information I asked for.

Andrew Schorr:
So you go see Dr. Robert Hart, and we should mention he’s an Associate Professor of Orthopedic Surgery and a specialist in scoliosis surgery among his other areas of interest. So you go to him. You’re at the right guy. He’s not pushing you towards surgery. You’re consulting with him and e-mailing with him and talking about all this. What made you decide to go forward with surgery, which you did in the fall of 2007?
Laura:
I did not want to live like that anymore. I got tired of the pain. I got tired of my body turning, literally, my whole upper body I just felt like it was all turning to the left. My shoulders weren’t even. I was just out of whack, and I didn’t like that.

Andrew Schorr:
Now while you had been hesitant about surgical intervention, what was your husband saying and maybe some of these other people who had tried to help you along the way; the chiropractor, the massage people, the acupuncturist; what were they saying?

Laura:
My acupuncturist was totally into me getting this done. She felt that I would be a good candidate. She knows me real well. I’ve probably seen her now for nine years for all different issues, just overall wellness, and she just felt I would have a good recovery because I am kind of a positive thinker.

Andrew Schorr:
You husband, what was he saying?

Laura:
My husband said, ‘Whatever you want to do I’ll take care of you.’ and was totally supportive. My chiropractor was probably the biggest; I always thought that chiropractors were like, ‘Oh no, I can fix this. Don’t do that.’ you know; and he is the one who said, ‘I can’t fix this. Your bones are in a position that is not fixable without surgery, and you need to trust this person, which I know you do, and just go ahead and do it.’

Andrew Schorr:
So there you are, October 2007, and you have the first of two surgeries; an eight-hour surgery where they operate from the back on your spine, and then you stay in the hospital for a few days, and then they come back and do the front; and I think you were in the hospital for about 10 days altogether.

Laura:
Ten or eleven, yes.

Andrew Schorr:
And then you go home, and you were told the recovery would take about how long, and how long did it take?

Laura:
I was off work for three months, and for those three months Dr. Hart just said, ‘Just walk and get better. No lifting. No pushing. No pulling. Don’t do the laundry. Just let yourself heal and fuse.’
It’s kind of out of my character. I was constantly pushing him to do more, more, more, and he kept saying, ‘No, no. Just wait. We’ll get there.’ I really think that taking that three months of just walking and taking it easy, resting when I needed to rest, doing my physical therapy, it was a total success.

Andrew Schorr:
All right, we’ll let’s tell people where you are now. So what physical activity do you do now, and if you had a lot of pain before what pain do you have now?

Laura:
I don’t have any pain now. I do modified yoga. I try and get out and walk every day even though sometimes I’m not real successful at that. I don’t think I’m limited in doing anything. I try and run a little, but I look kind of funny. I don’t know if that’s just because I run funny or the fusion has anything to do with that; it might just be the way I am.

Andrew Schorr:
That’s you and me being 58.

Laura:
Exactly.

Andrew Schorr:
I run funny too.

Laura:
But I couldn’t even run before this surgery. I mean it was very scary to me that as a woman I didn’t feel like I could run away from somebody, and now even though I run funny and look weird I can run, so that’s a big difference too. And I can walk. I can walk, I can sit. I don’t feel like I’m limited at all. Half the time I forget that there’s a rod in my back, or two rods, or whatever. So I can put my shoes on, I can tie my shoes. I feel absolutely blessed and lucky. It changed my life.

Andrew Schorr:
That’s what I was going to ask you. Do you feel like your life has been given back to you?

Laura:
Oh yes, yes. Dr. Hart knows how much I just appreciate everything he’s done because I think his skill was also instrumental in my success. I mean he put all the stuff in there and it all works.

Andrew Schorr:
Well let’s meet this man. So we’re talking about you, Dr. Robert Hart. As I mentioned he is an Associate Professor of Orthopedic surgery at Oregon Health and Science University in Portland. Dr. Hart, so first of all it’s got to make you feel great that Laura is living so well now when she wasn’t when she originally came to you.
**Dr. Hart:**
Yes absolutely. I’m delighted to see how she’s done and how things have gone for her. I will say she’s one of my biggest boosters, and I do send other patients to her when they want details of how these things can go.

**Indications for Spine Surgery**

**Andrew Schorr:**
As we continue our discussion we’re going to explain that results vary and whether someone even needs surgery is a question that is very individualized. First of all, how does somebody feel about it, is their situation so severe that they could benefit from it, and then going into it as Laura did with her eyes open.

Dr. Hart, I know you do scoliosis surgery on adults maybe once a week or even more often. You were telling me you might do 80 this year. First of all, this is not something that is done by every or even most orthopedic surgeons is it? It’s a specialty.

**Dr. Hart:**
Yes it is. So spine surgery within orthopedics is a subspecialty, and most general orthopedic surgeons, in other words surgeons who do hip replacement and ligament reconstruction and those kinds of things, typically don’t do spine surgeries. So most orthopedists who do spine surgery have further training in spine surgery and do only spine surgery, and then the flip side is that most spine surgeons don’t do a lot of hip replacement or knee arthroscopy types of surgeries. It’s a subspecialty, and then within that subspecialty of spine surgery not all orthopedic surgeons that do spine surgery do really much adult deformity surgery.

**Andrew Schorr:**
Now she, Laura, had this as a child and then it just developed further. Is that the typical person who gets to you where it’s become so severe and so debilitating that they’re a candidate for surgery, or are there some people who develop it as an adult?

**Dr. Hart:**
Yes, there are three main groups that I operate on in adult patients with scoliosis. The first of those are patients like Laura who had scoliosis as a child but maybe not a large enough curve, and as Laura just related usually have not had pain through their childhood or their early adult years and then begin to get arthritis and with the arthritis further progression of the curve and worsening pain. Those two things, the progression of the curvature and the pain that’s related to it, drive them ultimately to need surgery. I’m talking about the surgical patients or to one surgery.

There’s a group of patients also that knew about the scoliosis as a child and may have had a surgery as a child, which typically has been successful over a number of years but then develop similar things, either arthritis below the prior fusion and then need surgery for that reason, and in some cases those prior fusions may have...
not been completely successful in terms of the correction of the curve, and that is more of a historical problem as we’ve developed better techniques and better implants. So most children that undergo scoliosis surgery today I think typically don’t have as much of an issue of residual curve or inappropriately corrected curve but still ultimately can have mechanical effects leading to arthritis at other levels.

There’s a third group, which is typically patients that are older than Laura, so typically patients that may come to us in their 60’s or 70’s even that have developed scoliosis as an adult, and the majority of those are women, not exclusively, but scoliosis in kind of all of its aspects tends to be a disease more of girls and women than it is of boys and men, but it’s not exclusive. The type of scoliosis that happens in older patients is called degenerative scoliosis, and it’s a result of progressive arthritis of the spine that leads to this instability or curvature and then again it’s typically the symptoms that bring the patient in oftentimes are pain symptoms of back pain and leg pain from nerve compression and sometimes the deformity itself; sometimes the deformity itself causes problems as well.

Andrew Schorr:
Now I’ve read that typically surgery wasn’t recommended after the age of 50. Has that changed, and now do you have some people where it’s degenerating later in life?

Dr. Hart:
Oh very much so. I think one of the big challenges right now for orthopedic spine surgeons is learning how to take care of patients that are older, and I can tell you in my own practice it’s one of the things that’s the biggest challenge for me, but I would say the majority of the patients I operate on are over 50, and I’ve operated on women, I think the oldest so far is 78, and I have a woman I just saw Tuesday that’s 81 that is pretty sure she wants surgery, and I’m not sure we’ll do that, we’re still talking.

The reason is that it is a disease of elderly people, and it is quite incapacitating in some cases, and so these are people who are going to be living in a lot of cases another 10, 15, or 20 years, that have a really disabling condition.

Andrew Schorr:
We have a lot to talk about to understand who is a candidate for surgery, and we’ll learn as we continue about degrees of curvature or rate of progression and the dialog like Laura had is, am I a candidate, or when do I become a candidate, and what are other approaches? We talked with Dr. Halsey and kids about braces, for example, and they’re used pretty extensively, but what about in adults? We’ve got a lot more questions for you as we continue our "Ask the Experts" program, and also Dr. Hart we’ll pose some questions that were e-mailed in, and Laura we’ll hear more from you too because you’re a very inspiring lady. All that’s coming up as we continue our "Ask the Experts" program on scoliosis in adults right after this.
Welcome back to our "Ask the Experts" program. We’re talking about adult scoliosis, and as you heard Laura Osborn, now 58, is doing great, but she had begun to develop scoliosis, the curvature of the spine as a kid. It didn’t really affect her then. She was a competitive swimmer, gets to middle age, her late 40’s, and she was in a lot of pain and tried every non-surgical intervention she could. While it would bring some relief short term she still had the problem, and all of those providers were saying you know Laura, you need surgery. Finally in the fall of 2007 she did have first surgery on the back of her spine and then from the front just a week later at Oregon Health and Science University with a spinal surgeon, a specialist, Dr. Robert Hart. We’re learning about that, and Dr. Hart was just explaining how now he’s been doing surgery on people a lot older than Laura, people in their 60’s, 70’s, and he mentioned even somebody maybe in their 80’s all with these debilitating problems.

It brings up the question, Dr. Hart. Surgery is a big deal, and as Laura was telling us the first surgery took eight hours. I mean in the scope of surgeries that surgeons do, this is major surgery right?

Dr. Hart:  
Yes it is a major undertaking absolutely for the patient and for the hospital and physicians. I explain to patients it’s more than just the surgeon. It requires a team that includes the nurses that participate at surgery, the anesthesiologists that are at surgery, as well as people in the blood bank, people in the ICU and the physical therapists on the floor after the surgery.

Andrew Schorr:  
All right, and then of course a commitment from the patient for the things they need to do in recovery, and Laura you were mentioning that you had to be really mindful of what you could do and what you should do, right Laura?

Laura:  
Right.

Disease Progression from Childhood to Adulthood

Andrew Schorr:  
All right. So it’s a team, and the patient is very much a part of that team. So Dr. Hart, tell us, I’ve read different articles that talk about assessing the rate of change of the curvature for an adult and then certain numbers, whether it’s 50 degrees or more and saying well that gets into the range where maybe surgery is an option. Could you talk about these numbers a little bit and how that translates into whether or not someone is a candidate?

Dr. Hart:  
Yes. The size of the curve in childhood is probably more important than in adulthood in determining whether somebody is really a candidate for surgery, but in childhood during the rapid growth years of adolescence the curves will progress
up to 10 degrees a year would be a fairly rapid rate of progression say, and if you get to adulthood with a curve that’s 50 degrees or more there is some chance that the curve will continue to progress during adulthood years.

Most kids that get to adulthood with a curve of say 40 degrees or less will not experience progression of their curve. Now there’s a bit of a distinction in terms of where the curve is. The most common area for scoliosis is in the thoracic region which is the ribcage, and that’s where the best information about this sort of 50-degree curve being one that might progress and 40-degrees being one that’s not going to progress comes from. Laura’s curve was in the lumbar spine or low back, and those oftentimes are much more problematic in adulthood than the thoracic curves, and we now know that even fairly sizeable thoracic curves can really be tolerated over a number of years into late adulthood in most patients that have them whether or not they undergo surgery.

But in the lumbar spine what begins to happen is exactly the problem that Laura ran into which is the curve seems to accelerate arthritis, and it’s clear that there’s a higher rate of back pain in adults that have scoliosis than in adults that don’t, and I think that’s particularly true for patients who have a significant curve in the lower back.

So in those patients I may have somebody come into my office with a 20-degree curve, say a very small curve, a relatively small curve, but if their pain symptoms warrant intervention they may still be a candidate for surgery. So the pain really becomes more often the indicator for surgery than the curve itself.

Now there still are patients that come in with curves that are quite large that for one reason or another didn’t get treated in childhood, either the patient may have not gotten follow-up as a child or may have had parents, usually it would have been decision making that involved the parents, that ultimately decided against surgery at that time so the curve now has gotten past 50 degrees, and there is some chance of progression, and usually what we look for is documented progression that we have an x-ray maybe from the end of their childhood visits and now an x-ray say 10 years later in their 20’s or even 30’s that shows that the curve has progressed a significant amount, say 10 degrees or more since their last x-ray let’s say 10 years ago, and that would be someone where we would say well we know that the curve is going to progress and so for that patient surgical intervention may also be beneficial, and in that case just on the size of the curve that may be a patient who has absolutely no pain at that time but is just worried about the curve itself.

**Andrew Schorr:**
What about other things that could come up like bowel or bladder problems or even pulmonary issues?
Dr. Hart:
Right, so historically there was a great deal of fear about the possibility that scoliosis causes compromise of the lungs or the heart, and that's based on the location of it in the chest region and the idea that it was going to create less space for the lungs and heart to function. In fact that can occur in patients that have really, really big curves, but those are curves that have gotten over 80 degrees at a minimum, and I think one thing that we've learned in the last five or ten years is that most patients with scoliosis will not end up with that type of a problem even if no intervention is undertaken. Nobody will know this gentleman's name, but Stu Weinstein was one of my teachers who has really been involved in bringing that information to light and has followed patients out to 50 years from childhood and found that most of them with curves in the thoracic region especially are doing quite well even at 50 years after their last visit.

Andrew Schorr:
And lower down, bowel and bladder concerns?

Dr. Hart:
The bowel and bladder control problems can develop as a result of what’s called spinal stenosis which is a result of arthritis in the spine, and so arthritis everywhere creates bone spurs, and that’s sort of the hallmark when you see someone with arthritis. In fact I have a few on my hand now. In the knuckles you begin to get these kind of bumpy, knobby knuckles, and the same thing takes place in the spine. As those bone spurs enlarge they take away space for the nerves where the nerves run, and in the worst of cases in the lower lumbar spine that can begin to even cause the nerves to dysfunction. Initially the symptoms will usually be pain and numbness in the legs, but if it gets severe enough and lasts long enough there can be the situation where leg weakness develops or bowel and bladder controls problems are the other issue that can develop with neurologic dysfunction.

That’s rare and takes a long time to develop and so one of the things I tell all of my patients, and I think I told Laura, was that you’re not going to wake up paralyzed one day. It’s just not that kind of a disease process. It moves very slowly, and the chance of it getting to that point is really in the minority of patients, although it certainly can happen.

Treatment Options for Symptoms and Curve Correction

Andrew Schorr:
Now Laura talked about being terrified. Nobody’s eager for surgery, and it’s an elective decision as we’re learning here. I mentioned before we took a little break about braces used in kids, so are there things like braces that can help in adults? What other things can you do?

Dr. Hart:
There are a number of things, and Laura listed a number of them earlier that can be tried, and I think exercise and physical therapy, stretching, those kinds of things
and maybe massage therapy, chiropractic, acupuncture, all of those things are available and can be very useful. Then things like pain medications can be very useful, and I try to avoid having patients on high doses of strong narcotics, but certainly anti-inflammatory medicines are a good option. I think mild narcotics for some patients are a good option. Muscle relaxants may be a good option.

Then there are injections that can be done as well like a steroid or cortisone injection in the area around the nerves, and usually that’s done for someone who has nerve compression and were trying to relieve the nerve symptoms. Sometimes it’s done for arthritis symptoms to try to make those ease up, which are a more back pain type symptom.

The role of bracing in adults is pretty limited. I think the way to think of it is a brace in childhood is used to try to slow or halt the progression of the curve. It’s really not to put the curve back straight and keep it straight. It just doesn’t work in accomplishing that, and so in adults as we talked about the issue of curves progressing is really not a major issue, and so an external brace doesn’t really play much of a role.

Occasionally I’ll have a patient, usually one who has not surgery and doesn’t want surgery, that uses a brace because they feel it gives them pain relief, and so that might be a role in adults, but usually there’s no role for the aspect of preventing curve progression.

Andrew Schorr:
All right, and what percentage of the people who actually come see you would you say end up having surgery?

Dr. Hart:
That’s a very different number depending on a surgeon’s practice. Let me answer it in a couple of ways. I think the minority probably of patients who have scoliosis end up needing surgery either as children or as adults, but in my practice I think the percentage that come to me with scoliosis probably at least half or better of those patients end up undergoing surgery, but a lot of them are there sort of knowing they’re there for surgery, coming because they’re finally at a point where they just need a surgeon and they end up walking through our door.

Andrew Schorr:
And that brings us back to Laura. So Laura, you were hearing all around that that probably was right for you, no pressure from Dr. Hart and certainly as he said maybe half the people he sees don’t have surgery, so it’s really what is going to be right for you.

You mentioned that you ended up with rods and stuff. From your understanding what was done? Then we’ll get Dr. Hart to give us some more clinical explanation.
Laura:
The first part they went in through my back and, and I have this absolutely gorgeous straight-line scar, which I’ve never had a straight line on my back my whole life, so I love that. I show it to everybody and embarrass the heck out of my husband. I still show it to everybody. Anyway, I think they put in two rods and 16 screws if I counted my x-rays right. That was on a Monday, and then the following Monday, oh and let me add too that I am probably a physician’s worst nightmare because I do not react well to narcotics at all. I either throw up or whatever. So pain medications, that was really difficult in the beginning of this to say okay well what medication should we put her on when she gets home etc.

After the first part of my surgery when I had my back done they get you up and start you walking the first day, I had gone ahead and bought a walker with a seat just on a recommendation of one of Dr. Hart’s other patients who I talked to before my surgery, and I started walking the halls almost probably by the third day after my surgery. By that Friday I walked from our south hospital area over to Doernbecher, which is a pretty good walk, taking little breaks and by Saturday really felt good, and I was not on any pain pump. I was taking oral medication, but I have no idea what that was. I know it was not real strong, and I actually felt really good because I didn’t have, the pain that I had before the surgery was gone.

So with the incision itself I did not feel a lot of pain, and I don’t know if that’s usual or unusual, but that’s how I felt. Then I had the second part where they go in through the front, and again a lovely scar that goes in on your left side kind of curved, and they put three discs I think at the bottom of my spine to support the fusion, I don’t know all the technical stuff, and with that one the only discomfort was anytime you have your abdominal wall cut into that was more sore than this huge incision on my back.

Andrew Schorr:
Sure, that’s like a woman who has had a cesarean section or anything, sure.

Laura:
But I mean I couldn’t believe that there was not more pain in my back. So the hardest thing for me was learning to roll out of bed, but they teach you all of that stuff as you go. I was so afraid of messing it up that again I just listened to every single thing they told me to do.

Andrew Schorr:
And the doctor was really good at pointing out it’s a whole team?

Laura:
Oh yeah, everybody. Everybody was wonderful, absolutely wonderful.

Andrew Schorr:
Dr. Hart, put this in perspective. I want to hear a little bit more about what you do. So she mentioned fusion, she mentioned rods, she mentioned screws, and she said
that she had this sort of railroad tracks that were curving around in her back. I know it’s going to be different for different people, but it is a mixture of skill, of course, but hardware? I mean, tell us, how do you straighten it out?

**Dr. Hart:**
The example I use with patients frequently is a situation where, what a fusion is, the goal of the operation is a spine fusion, and what fusion means is to remove motion through the joints and the discs, and as an example if we were to take somebody’s finger and operate on the two knuckles and remove those knuckles and then put a cast around the finger and leave it on for about 6 weeks or a couple of months and then remove that, that finger would be completely stiff, and they would no longer be able to bend the finger, and that’s what a fusion does. It stiffens the joint.

In the spine you have two joints in the back at every disc level that are very similar in size to a knuckle, those are called the facet joints, in the disc itself, and what we want to do is to get that whole structure to stop moving or to fuse solidly.

We can’t apply a cast or a brace. I mean we can, but we can’t effectively hold the spine straight with a brace in the way you could hold your finger straight with a cast, so instead of a cast externally we use these internal implants, the screws and rods, to hold the spine in a corrected position, in a good position. Those kinds of implants have been used since the 1960s. I think a lot of people, particularly people with scoliosis, have heard the name “Harrington rods” and Paul Harrington was the first orthopedic surgeon to operate with implants on scoliosis or develop the first implant system.

Since then we’ve really reinvented that type of system over and over to a point where it’s very highly developed now, and the strength of the implants, the means of attaching the implants to the spine, and I think the techniques we use to kind of loosen the spine so that we can straighten it more effectively have really just improved radically with time as well as all of these other things like blood banking and anesthesia and ICU care that have made it possible to do these kinds of substantial interventions in people and have them be successful really the majority of the time.

The way we attached the screws in Laura’s case and what I use almost all the time are screws, at each vertebral level a pair of screws are placed, and they’re down a bony column that’s part of the vertebrae called the pedicle, and when we get two screws down, there’s a pedicle on either side, when we get two screws down the pedicles of a given vertebrae we really have a very strong hold on that vertebrae, and we can straighten it and rotate it in space to get it lined up with the vertebrae next to it. So that’s the goal of the posterior operation.

I will say traditionally we used to, surgeons and I used to do these operations with an initial stage being the front approach, and I think a lot of surgeons still do that. I
think increasingly though there’s a trend towards surgeons doing these operations either all from the back or from the back first and then from the front at a second stage like we did with Laura.

One thing I do want to point out that I think is unique in Laura’s experience, I certainly wouldn’t want patients who are contemplating this surgery to expect that they won’t have pain in the back after their posterior operation, after the back operation. I think for some reason Laura was left, as she was just describing, didn’t have a major issue with that, but the surgery itself is painful, and it takes some time for that pain to ease.

**Potential Risks of Spine Surgery**

**Andrew Schorr:**
We’re going to take a break in a second, but I think we always have to say this is with any surgery there are risks. I would imagine with a big surgery like this a concern would be, what doctor, infection of course, and you’re evaluating people for any underlying conditions they have, but what would be the caveats you’d like to mention here?

**Dr. Hart:**
Infection is a big one, and that probably occurs in three to four percent of patients around the country, that’s three or four out of a hundred. Sometimes that can be relatively well treated, and the patient doesn’t experience long-term problems as a result. It almost always will require further surgery to clean the infection. In the worst of cases the rods have to be removed in order to get the infection to clear, and in some cases I think the goals of the operation usually patients are not maybe a lot worse, but the benefit of the operation is not gained because we’re not able to get a solid fusion and certainly not able to get the fusion to heal in a good location or a good orientation. So that’s one.

One of the scarier things is the risk of a nerve injury, and in particular a spinal cord injury, which can result in loss of function in the legs and bowel and bladder control just as we were talking about earlier.

Usually if there’s a nerve injury it’s much more limited than that, and then the patient doesn’t have loss of function in both legs completely, in other words can still walk, but may have weakness in one muscle group or a couple of muscle groups, and numbness accompanying that. So that’s when an individual nerve rather than the entire spinal cord is injured.

The rates of those kinds of things should be less than one percent or one out of a hundred, maybe one out of a hundred depending on the severity of the tightness around the nerve and the patient’s age to some degree.

Another concern is failure of the fusion to heal. So even though we put all these implants in and put the bone graft and bone, nowadays we use a bone protein that
comes in a bottle, the fusion rates are still not a hundred percent, and if the fusions don’t heal, if the fusion fails to heal in one or another area there’s a slight amount of motion that’s retained, and the rods and screws even though they’re manufactured to very high quality levels and tolerance levels and are really very strong, just like a paperclip, if you bend it, you don’t have to bend it very much, but if you bend it over and over at a certain point it fatigues and breaks or it loosens within the spine. When that happens in a good number of those cases the patient will re-experience pain and can then also have recurrence of their deformity, and so those patients may need a second operation. That rate is maybe as high as five percent. It used to be higher probably as much as fifteen or twenty percent, but with all of the techniques we use now and in terms of the instrumentation as well as this protein that now is available called bone morphogenic protein, those two things I think primarily have led to a fusion rate that probably ninety-five percent would be a good conservative estimate.

Andrew Schorr:
Thank you for explaining that. I think we’ve put it very much in perspective, and as we heard from Laura it really got to the point though where she knew she had to do something, and she went into it with her eyes open.

We’re going to take another quick break, and when we come back we’re going to pose some questions to Dr. Hart that we’ve gotten via e-mail, and then we’ll also get some final thoughts from Laura Osborn. It’s all coming up as we continue our discussion about adult scoliosis treatments and getting the relief of the pain or disability you may be experiencing. It’s all next as we continue "Ask the Experts."

Welcome back to our "Ask the Experts" program. Andrew Schorr here as we discuss with a leading spine surgeon from Oregon Health and Science University treatment for scoliosis, and that’s Dr. Robert Hart, and also with us is his patient, Laura Osborn, who is doing great now down the road from surgery and going to yoga class every day.

Listener Questions

Andrew Schorr:
Dr. Hart, we’ve got a few questions for you that I want to ask you. Here’s one we got from Klamath Falls from Karen. I’ll read some of this. Karen writes, ‘I have had numbness and tingling in my arms, legs, face, and tongue for the past month, and so far no real diagnosis. I had had a fusion of L5-S1’ it looks like and you’ll help us understand where that is, ‘seven years ago, and the fusion according to the surgeon is sound,’ but she feels there’s weakness in her back, and she also has arthritis that shows up on the x-ray, and she’s going to a rheumatologist. She’s been told she has slight scoliosis due to the fusion, and she wonders can the scoliosis cause numbness and tingling? She’s just trying to understand what to do. I know you can’t practice medicine over the Internet, but any guidance for Karen?
Dr. Hart:
I think some of the symptoms she’s describing could be due to her low back. L5-S1 is the lowest disc level right down just above the pelvis, and it’s a very common location to get degenerative arthritis independent of scoliosis, and a number of patients for that reason have had surgery and oftentimes a fusion at that level. The numbness in her face and tongue and arms would not be something that a problem in the low back could cause. The face and tongue in particular wouldn’t be spine related. The arm numbness and pain could be spine related but would be coming from the neck region or the cervical spine rather than the lower back. So the scoliosis that she’s describing, which I would guess would be as she says is probably a small curve, it can certainly be again, as we talked about earlier, a result of arthritis. In some patients that can potentially be accelerated by having had a prior fusion so the fusion itself can produce arthritis at levels adjacent to the fusion, and that arthritis could lead to scoliosis, and that can certainly be painful, but in the kind of the group of symptoms she describes I think it could potentially be causing some of what she’s experiencing but probably not all.

Andrew Schorr:
All right, so going to a rheumatologist is a good idea and maybe even down the road a neurologist?

Dr. Hart:
Yes. I think both of those would be a good choice for her absolutely.

Andrew Schorr:
All right. Here’s a question we got in from far away Conroe, Texas, and this is a woman who has had scoliosis. Here’s her question. She says, ‘I have throbbing back pain in my back and then by my left shoulder blade, and then my left arm is throbbing and tingly and numb, and I was told that it was a herniated disc.’ She says, ‘What are your suggestions of what should I do to help this problem, and could it be my scoliosis?’

So we’ve been talking a lot about scoliosis and people who may have some slight scoliosis say is it that or is it something else? What do I do?

Dr. Hart:
I can’t tell from her description how severe her scoliosis is. Again, back arthritis and herniated disc problems can exist independent of whether the patient has scoliosis, so they certainly happen in a number of patients who don’t have scoliosis. There is probably an increased tendency, at least in the region of the curve, to have more arthritis at those levels and more pain reported by patients who have scoliosis than by patients who don’t, and there can be some effect certainly in the low back of a compensatory curve due to a, you know, the low back may have a smaller compensating curve for a bigger curve in the ribcage area, and I think to some extent you can have that kind of an effect in the cervical spine above a significant thoracic or a ribcage region scoliosis.
In that sort of situation we could guess that it might be related to the scoliosis, but in the end analysis there’s really no way to be sure what the cause is, but the ability to define what the problem is is usually quite good, and so she should with a good physical exam and clinical discussion and adequate imaging usually with an MRI have a reasonable explanation of where her pain is coming from and what the surgical treatment, if surgery was elected, might be and whether that would need to include treatment of the scoliosis would depend entirely on all of that assessment and what that showed.

**Andrew Schorr:**
Good advice. So as you were talking about all of us getting older some people may have a history of scoliosis or scoliosis that develops later in life. Sorting all this out; what’s the cause, and is simply fusing or straightening the spine going to provide relief? That’s a lot of what you have to think about when we come in with sometimes complex things going on.

**Dr. Hart:**
Absolutely. Yes, those are all factors.

**Andrew Schorr:**
You’ve got to be a detective I guess too. Okay, so as we kind of begin to wrap up this program, Dr. Hart, you are a spinal subspecialist who helps people with scoliosis, and you mentioned about the changes in techniques, and there may be people who had surgery even as children when there was a whole different landscape. Are you pretty confident that with many people, whether it’s a surgical approach or this whole other range, that there’s hope for people to get some relief?

**Dr. Hart:**
I think absolutely there is in a number of cases, and one final thing I might share is patients, and Laura had not had surgery as a child, but the way scoliosis surgery was performed 20, 30, or more years ago is night-and-day difference from what it is today. I have patients that come to me at times having had surgery as a child, and that’s really been an incredibly traumatic experience for them because it used to involve not only the pain of the surgery but then they would have to wear a cast that was changed periodically that maybe was worn for a duration of six months or up to a year in some cases. A lot of times they were maintained in bed for an incredible length of time, maybe three or six months, and a lot of that treatment occurred at hospitals where they were separated from their families. So there’s a form of what’s called post-traumatic stress disorder that was initially defined in war veterans returning from battle and having come through this traumatic experience that really are psychologically affected by that for a long period of time, and increasingly we’re aware that that same kind of affect can occur in people who have civilian injuries, either say a severe car accident or in some cases have had this kind of invasive medical procedure. So it’s clear that some patients that have had organ transplant can have this, and one of the research areas we’ve been looking at
involves spine fusion, and there is a real effect for some patients, particularly for those I think that had it in this condition that it was practiced a number of years ago.

So some of these patients when we first have a discussion about what might be done really almost kind of break down in tears remembering what things were like the last time and thinking that it’s going to be similar to that. Really the treatment while it’s not an easy course at all now it’s still night-and-day difference from what it was I think in those days.

Closing Comments

Andrew Schorr:
Well Dr. Robert Hart, you continue to advance with your colleague’s research to help make it ever better, and also I know you have many studies going on at OHSU, and I think Laura is in one to help understand the people who have scoliosis, have procedures, how their recovery goes, how they’re doing.

So Laura, is there anything you want to say publicly here to Dr. Hart who helped you get to a better place?

Laura:
I know that he knows this, but he really did change my life. There’s a lot of depression that goes along with pain, and when you can’t move and you can’t exercise and you can’t do all of the things that you want to do you, at least I did, I became depressed, I gained weight, which made my back even worse, and I just so appreciate his care, his concern, and the time that he spent with me. I can’t emphasize that enough.

In today’s world we are kind of instant everything, and it may not have been a whole year, but I know that I took a long time to decide to do this and really, really tried to look at all the other options. I even watched a surgery online, which totally freaked me out, but anyway the thing is I think part of it is deciding that you will have a better life by doing this and really just kind of giving that over to your doctor because you know that they do a good job, and I just can’t say enough about his care. He really did give me my life back, seriously. I mean it sounds kind of corny, but it’s really true, and I would do anything to, I think I told you before, I’m driving down the street and if I see a woman walking like I used to walk with her head forward and the back of her kind of stuck out over kind of on an angle, I want to pull the car over and go oh go see my doctor. I mean I don’t do that because I’m sure they’d think I was completely nuts...

Andrew Schorr:
You’re doing it now in this program.
Laura:
I hope so because there are so many women out there; and my father’s 85, and he calls me “Wonder Woman” now, my father has this too and has a walker and can’t go anywhere without his walker because of his back, and he has that same bumpy back, and I would love to see him get his back fixed, but honestly he’s too old, and he knows that. So he kind of watches my progression, and he’s just, I mean he probably cares as much for Dr. Hart even though he’s never met him as I do because he’s seen this huge improvement in me.

Andrew Schorr:
Well good for you Laura.

Laura:
And good for Dr. Hart.

Andrew Schorr:
Yes, and Dr. Hart, that’s got to make your day huh?

Dr. Hart:
Yes, I think today is going to work out okay.

Andrew Schorr:
Okay, all right. Dr. Robert Hart who is a spinal surgeon at Oregon Health and Science University thank you for what you’ve done for Laura, “Wonder Woman.”

Laura:
Yeah.

Andrew Schorr:
And thank you for really your dedication to folks who are dealing with scoliosis. Thank you so much for being with us.

Dr. Hart:
My pleasure.

Andrew Schorr:
And Laura, all the best to you “Wonder Woman.”

Laura:
Thank you so much. Only my dad calls me that though. I don’t consider myself “Wonder Woman.”

Andrew Schorr:
Okay, we’re going to jokingly call you that today, but all the best.

Laura:
Okay.
Andrew Schorr:
Hey every day when you do that yoga class you’ve got to celebrate your new lease on life.

Laura:
I actually don’t do a class, I do a tape at home every single day because the other thing with this surgery is you have to keep stretching.

Andrew Schorr:
Oh good for you. yes.

Laura:
I mean you might have this fusion in your back but there are muscles all around that.

Andrew Schorr:
Good for you and your dedication. Thank you so much for being with us Laura.

Laura:
Thank you.

Andrew Schorr:
This is what we do on our "Ask the Experts" program is connect you with inspiring patients like Laura Osborn and leading experts, a specialist in this case, a real subspecialist, Dr. Robert Hart from OHSU.

I’m Andrew Schorr. Remember, knowledge can be the best medicine of all. Thanks for joining us.

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