Witness: Brian Peterson

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Called by: People (prosecution)

Phase: Guilt

Examinations: Direct – David Harris (continued from previous day); Cross – Mark Geragos; Redirect – David Harris; Recross – Mark Geragos; 2nd Redirect – David Harris; 2nd Recross – Mark Geragos; 3rd Redirect – David Harris; 3rd Recross – Mark Geragos

Day 2 of 2 for this witness

Court: San Mateo County Superior Court, Redwood City (People v. Scott Peterson)

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September 16, 2004

HARRIS: Doctor, yesterday when we were looking at the last photograph that you were describing of Laci Peterson's uterus, you were describing for us how there was no natural birth in the vaginal canal, there was no C section. Let me just go through that for a second. A C section, is that a medical term?

PETERSON: It is. A cesarean section is simply a procedure whereby an incision is made in the abdominal wall and in the uterus to remove the baby that way, as opposed to a vaginal birth.

HARRIS: So I guess probably the better term would be that there was no incision that was visible in the uterus?

PETERSON: Correct.

HARRIS: Now, when we were talking about the placement of the uterus in, in the victim in this particular case, it's inside the, the abdomen, in the lower cavity. Trying to remember my anatomy here. What is it that has to occur for this uterus to become exposed and end up being abraded like this, as you were describing?

PETERSON: Well, the uterus originates in the true pelvis. That's where the attachments are down below. For the uterus to be exposed, for a pregnant uterus, as in this case, to be exposed, you have to have portions of the abdominal wall missing. Namely skin, subcutaneous tissue, fat and muscle. And once those things are all gone, and one last layer of membrane called the peritoneum, at that point you expose the inside of the abdomen, and the top of the uterus would be visible there.

HARRIS: So you were describing for us what happens or what you would see normally in a normal anatomical female uterus, about the golf ball shape and the pregnant uterus how it enlarges. After the woman gives birth, does the uterus shrink back down?

PETERSON: It does. In my experience, I've not seen a uterus where there's been previous birth go back to, say, golf ball size. Maybe a little bit larger. Again, using a typical pathology food analogy, maybe an apple size, orange size. It depends. So it will never go back to the complete non-pregnant stage, but it will get substantially smaller.

HARRIS: So looking at Ms. Peterson's remains, looking at that uterus, from your expert opinion there had been a baby inside that uterus?

PETERSON: That's correct. And it never had a chance to go back down in size again.

HARRIS: Again, just from the lay person's point of view, that means that Ms. Peterson was pregnant and the baby had not been delivered and she had died while that baby was still there?

PETERSON: That is my opinion.

HARRIS: Now, you were talking something, a little bit yesterday about the tool marks, and I want to just touch on that real quick as well. You were saying something about how to disarticulate, I guess maybe another term would be to dismember someone, that you might leave tool marks. Can you explain to us the process of, of dismemberment and how difficult that actually is.

PETERSON: Well, it's, it's difficult if you don't know what you're doing. So it's a matter of knowing two different kinds of anatomy. Anatomy on the surface, and then joint anatomy, if we're talking about taking extremities off. And those things don't necessarily line up. So I've done it before, but that's, that's my training and expertise, but I think it takes a substantial amount of training, and then it depends on exactly how careful you are. There's certainly been times where I've had to open joints up where I've left tool marks, because my focus is not so much on not leaving tool marks as it is on finding the bullet, or something on that order.

HARRIS: So in this particular case when you were saying that you found no tool marks, that's an indication, in your experience, that there had been no dismemberment?

PETERSON: Well, there had been dismemberment, but I found no evidence that it had been done by tools. So my explanation is the dismemberment was caused by decomposition and tidal action, and so forth, which wouldn't be expected to leave marks.

HARRIS: Now, you, you had told us yesterday about the process of what you did with law enforcement agencies. In this particular case was there a criminalist that assisted as part of the, the autopsy procedure?

PETERSON: Yes.

HARRIS: And as the process went through this, the duct tape was collected, the clothing was collected and that was ultimately received or taken in, for evidentiary purposes by John Nelson from the crime lab?

PETERSON: That's correct.

HARRIS: Now, we have a stipulation here as to the identity of Ms. Peterson, this particular victim, but when you were doing the autopsy, were you aware of who this individual was?

PETERSON: No. She was received as a Jane Doe. And I think, based on circumstances, there were some suspicions that this might be Laci, but we had, we had no identification at the time of the autopsy.

HARRIS: So what step did you take to make an identification at that time?

PETERSON: The, there were two specific specimens that I removed. One was the right tibia. That's the shin bone on the right side. I removed that, and I also removed some of the skeletal muscle that remained within the right thigh. And those were sent to the Department of Justice DNA lab for identification.

HARRIS: And did you have to wait until you received the DNA results to make a positive identification?

PETERSON: I did.

HARRIS: When you, just going through this process, can you make determinations without having the final tests back?

PETERSON: It depends on the case. There are some cases where there are alternate means of reaching identification. Those simply weren't available in this case. I've been involved in cases before where, for example, the body is unidentified, but during the course of the autopsy the fingerprints are being processed and run, and there will be an identification by the end of the autopsy. In this case no fingerprints, no teeth, really no other means for making an identification, so there was no option but waiting for the DNA.

HARRIS: Do you also take tests of the remains to try and determine if there's anything of a chemical nature in the body?

PETERSON: We always collect the specimens such as are available. In a, in a fresh case, typically we'll obtain blood, urine, if there is urine, sometimes a fluid in the eye called the vitreous humor, and retain those things for testing, if necessary. In this case, unfortunately, we had none of those things. All I was able to take was skeletal muscle for testing.

HARRIS: Are those as accurate?

PETERSON: Well, I think a test, a test can be as accurate as the lab that performs it. One of the issues will be what's a normal value. Because we don't often offer ourselves up for skeletal muscle biopsy to establish normal range of drugs and chemicals in living people. So when we have to rely on that type of alternate test, it's often difficult to establish what's normal and what's not.

HARRIS: And with some type of tests, is it actually impossible with muscle tissue to perform the tests at all?

PETERSON: There are certainly drugs that don't distribute particularly well to skeletal muscle, so it wouldn't be too surprising to not find them there, even if they had been present in the body.

HARRIS: Now, you were talking about how you, let me ask another question before I move on. With the toxicology results, is that something that's done instantaneously as well?

PETERSON: No, that, that typically takes days to weeks, sometimes even months to return.

HARRIS: And, again, as part of the process of coming to your final opinion and conclusion in performing an autopsy, do you wait for the toxicology results as well?

JUDGE: Maybe we ought to have the jury find out what a toxicology report is. We know, but the jury probably doesn't.

HARRIS: Can you explain that for us?

PETERSON: Sure. When we send these kind of specimens out to be analyzed, they are sent by the Coroner's division to another laboratory. And depending on what tests we're interested in, that depends on the laboratory the material goes to; so, depending on the case. Now, there's, for example, the protocol at the Coroner's Office is that in a homicide case we ask for full toxicology. Typically that's easy. When there's a gunshot to the head and there's blood and other fluids, that's easy to send off. In those type cases I do not typically wait for the toxicology results to sign the autopsy out, because the cause of death is a gunshot wound to the head, and the toxicology is simply extra information. In this case, because I have no cause of death by the end of the autopsy, I waited until the toxicology results come back. So it depends on the case.

HARRIS: Now, as part of this process of waiting for the additional information to come in, was there, had there been some other activity at the Coroner's Office that day that, when you found or you started to do the autopsy of Ms. Peterson, that you started to believe that you might have had Conner Peterson as well?

PETERSON: Yes.

HARRIS: I want to go into that particular area at this point.

JUDGE: Can I interrupt just for one second? I just want to ask, Doctor, based upon your examination of the remains of Laci Peterson and the condition in which you found the body, as a result of your examination, were you ever able to determine what the cause of death was?

PETERSON: I was not, your Honor. Once all is said and done, despite everything we did, I established that the cause of death was undetermined.

JUDGE: Okay. Go ahead.

HARRIS: Now, you indicated that there was something that led you to believe that you might have had the remains of Conner Peterson. Had an unidentified or unaccompanied death come in from Richmond earlier that day?

PETERSON: Yes, it had.

HARRIS: And was this a fetus?

PETERSON: Yes.

HARRIS: Did you perform the autopsy on that individual as well?

PETERSON: I did.

HARRIS: And assuming we have the same stipulation as to Conner,

GERAGOS: We do.

JUDGE: He stipulated yesterday.

GERAGOS: I stipulated yesterday as well.

JUDGE: That it was Conner Peterson and Laci Peterson was the subject matter of the autopsy.

HARRIS: What time did you perform the autopsy of Conner Peterson?

PETERSON: The autopsy started at 8:10 in the morning.

HARRIS: So in terms of sequence, you had actually done Conner Peterson's autopsy before Laci Peterson's autopsy?

PETERSON: I did.

HARRIS: Were you aware at the time that you were doing Conner Peterson's autopsy that it was connected with the body that came in later that was Laci Peterson?

PETERSON: Not at all.

HARRIS: I want to go through the process of this. Conner comes into the, into the facility. Can you run us through the process of what occurs?

JUDGE: Well, start with what was the condition of the body when you first saw it.

PETERSON: Yes, your Honor. What we received was another deposed body, and this was received as just that, a decomposed infant or fetus body. And that was about the information that I had. I knew that he had been found washed up on shore. For what it's worth, our typical thinking in those type cases is to try to determine whether or not we're dealing with a baby that had been born or not. In other words, if we're dealing with a live birth that has subsequently been discarded, that's one set of issues. If we're dealing with a still birth that has been discarded, that's a different set of issues. So my job, in as much as I can, is to try to make that differentiation between still birth and live birth. In this case, as in Laci's case, the job was more difficult because this body had been subject to a large amount of post-mortem change. Not quite like Laci's change, but a different set of changes that ran more along the lines of a process called maceration. Maceration is a term for taking a body and putting it in water, oftentimes warm water, and the degradation that follows there. Thins are a little bit different for a fetus in the uterus. The reason is that that environment is basically a sterile environment. So in the

mom, you don't have decomposition, as we talked about yesterday. There's that difference between decomposition and autolysis. There's a difference between decomposition and maceration. So the changes that I saw involving Conner were more along the lines of autolysis and maceration. Additionally, to my eye there was no evidence of animal feeding. There weren't the parts missing, in other words, that there were in Laci. So, to start out with it was the same type process. Here was a body that had undergone substantial post-mortem degradation, and my job was to try to determine if this baby had ever been born, if it were a live birth or a still birth, and maybe come up with a cause of death.

HARRIS: Now, as you're talking about some, some terminology there, again, and I want to go through that. Post-mortem degradation. To try and put it in terms that maybe we can all understand, when you're talking about the decomposition of this particular body, can you describe that for us a little bit more?

PETERSON: I think by way of comparison, of course, infant bodies are substantially different than adult bodies. They don't have the subcutaneous fat. The skeletal system is different. A lot of the bones aren't joined, as they are in adults. So, for example, your skull is actually made up of several bones. As adults, those bones are all fused together. As you know from being around infants, they haven't. They have the soft spot, front and back. That's because the skull plates haven't joined. So in Conner's case those plates were overriding. It was very easy to deform that head. In terms of changes beneath the skin, they weren't what you would see in an adult. It was more of a liquefying type process. So in Conner, for the most part the organs were still inside the body, but they were remarkably liquefied. How do I know that? Because the weights were substantially different than they should have been. So the tissue had to go somewhere, so that's basically what happens. It liquefies. So even though the organ looks like it's there, a lot of the mass was missing. So the other degradation-type processes that I observed was some post-mortem tearing that involved the shoulder, extending across the chest and to the abdomen. Again, to my eye there was no evidence of feeding there, just tearing. Now, this body was very soft and it came apart quite easily, so my thinking at the time and at this point was that that tearing could have been caused by the physical action of the body being thrown up on shore.

HARRIS: As you go through in your examination of the body, do you do the same thing of documenting it and collecting anything that might be there?

PETERSON: I do.

HARRIS: Any clothing on this body?

PETERSON: There was no clothing.

HARRIS: In terms of, again, the documentation process, or collecting anything that was there, were you assisted by somebody from law enforcement?

PETERSON: I was. I had Officer Jeff Soler there from the Richmond Police Department.

HARRIS: So, again, the same type of protocol that you described for us yesterday: They're there, they would collect whatever is either pointed out to them or what they see?

PETERSON: That's correct.

HARRIS: Do you go through and photograph this body as, e 6 as you go through this process?

PETERSON: Officer Soler made photographs. I did not.

HARRIS: The, you talked about this tearing, can you describe for us or explain to us how you can differentiate between something that's an antemortem tearing and post-mortem tearing?

PETERSON: If there is antemortem tearing, we'll associate that with blunt force injury. Blunt force injury, there's three different types: Contusion, which is a bruise; abrasion, which is a scraping-type injury, like road rash; or a crushing or tearing type injury, such as a laceration. In

the case of laceration, the way we differentiate that from, say, sharp force, like an incision, is that in the depths of the laceration there are bridges, soft tissue bridges. They can be connective tissue, blood vessels, nerves, et cetera. In an incision, caused by a sharp object, there's no such bridging. The way that the tear on Conner look was more that the tissue was soft enough to simply pull apart. In the case of this happening during life there will be other changes in that soft tissue, like bleeding. There was no bleeding in this case. So it was simply dead tissue that was pulling apart.

HARRIS: Again, as part of the documentation process, did you observe that there was any debris or anything associated with the body?

PETERSON: I did. The one piece of debris that I specifically recorded, and I'll read from my report here. This is in the first paragraph under internal/external examination: As received, one and one half loops of plastic tape are around the neck of the fetus with extension to a knot near the left shoulder. The skin is uninjured beneath this loop, and the slack between the loops and the neck is roughly two centimeters.

HARRIS: I want to go back and figure out what that means. Two centimeters, about how big is that?

PETERSON: A little under an inch.

HARRIS: Now, if you've got something that's kind of looped around someone's neck, does that cause you any concern? Or would you examine that further?

PETERSON: Well, there's certainly, as, as a forensic pathologist, we have certain habits. We're as much creatures of habit as anybody. And when we're presented with something around the neck, habit takes over, and the habit is to try to preserve that as much as possible, while still removing it without damaging the body. So my suspicion is that in this case I could have pulled that off of Conner's head, but I probably would have damaged the head by doing that. So I simply cut around the neck. The knot that I saw was near the left shoulder. I cut it over on the right-hand side and simply removed it and handed it to Officer Soler.

HARRIS: Now, did you examine it to see if it had anything to do with any injury or any cause with Conner?

PETERSON: It wasn't so much of examining the tape, or whatever it was. It was more a matter of examining the neck. And I looked at the skin beneath that loop, and the skin was undamaged. And I also dissected the neck organs beneath the skin, and they were undamaged. So my,

HARRIS: So what does that mean?

PETERSON: My conclusion was that that material had not caused damage to the neck. And, in fact, my opinion was and is that it was simply debris that had become associated with the body.

HARRIS: To go back through that. When you're saying something, something is wrapped around the neck, say, for example, if somebody ties something around someone's neck, does that cause damage to a live person?

PETERSON: It does. The term we use for that is ligature. And there are different types of death that might involve a ligature. One type would be hanging. Another type would be ligature strangulation, where that material is actually being applied to a living person's neck. In the case of ligature strangulation, it's typical to see bleeding inside the muscle in the neck, sometimes damage to other structures, the cartilage to the voice box, for example. There was no such damage in this case. In the case of hanging, it's typical to see a change in the skin beneath the ligature that we call ligature furrow. That's the impression of that on the skin. There was no ligature furrow in this case. So to make a long story short, I could see neither external nor internal damage that could have been caused by this material. So my assessment was then that it hadn't caused damage.

HARRIS: As you go through and you looked at these remains of Conner, could you determine if there was anything anatomically wrong?

PETERSON: I looked for that. Again, my thinking, when presented with this type case, is was this a still birth or a live birth. So one helpful clue can be finding something anatomically inside the body that would have been incompatible with life. So, for example, if the heart had been abnormally developed, if the lungs had been abnormally developed. Sometimes these things are simply not capable of sustaining life. There was no such finding in this case. So in the sense that I could examine the organs, and, again, there had been this post-mortem change, liquefaction, and so forth, I found no other abnormalities. So basically, to the naked eye, the organs looked approximately normal. So I found nothing anatomically inside of Conner that would have been incompatible with life.

HARRIS: To ask it this way. If Conner had been born, would he have survived outside of the womb?

PETERSON: Based on what I saw, yes, he would have. MR. DAVID HARRIS: If I can have marked next a series of photographs.

JUDGE: 258. How many have you got?

HARRIS: Five photographs.

JUDGE: A through E.

HARRIS: Doctor, I'm going to present to you what has been marked as 258 A through E, have you look at these photographs and see if you recognize what's depicted in them.

PETERSON: I do.

HARRIS: And do these photographs depict the remains of Conner Peterson?

PETERSON: Yes, they do.

HARRIS: And do they accurately depict his remains that you observed at the autopsy?

PETERSON: They do.

HARRIS: And again, Doctor, as I asked you yesterday, are these photographs fairly graphic?

PETERSON: They are.

HARRIS: Showing you 258 A, and perhaps following the judge's advice yesterday, if we could get you to take a pointer and go up to the screen. Can you describe for us what we see in this photograph, 258 A.

PETERSON: Sure. This is a picture of Conner taken from his left. So this would be his left shoulder and arm right here. Over on the right you can get an idea of that tear that we were talking about a little bit earlier. The head doesn't look normally shaped because it's not. That's because of that overriding effect of the skull plates that I mentioned. This is the tape material with the loops, the knot near the left shoulder. So I would have cut over here to take it off. I guess the other finding of note is that normally, in infants, they have a big belly because their liver is proportionately larger, and his is relatively flat. And that's because of the liquefying change that I talked about. So a lot of the substantive organ was missing, even though the liver was still there.

HARRIS: Now, there's something on the head there. That particular item that you're pointing to right there. Do you recall what that was from the autopsy?

PETERSON: At the time I thought that was a piece of seaweed.

HARRIS: And if it was seaweed, would it have been something that you would have collected?

PETERSON: I wouldn't have, no. The body was found on the beach, and there's seaweed there, so I wouldn't have ascribed any particular significance to it.

HARRIS: Showing you 258 B, is this somewhat of a rotation,

JUDGE: This is E, not B?

HARRIS: This is B.

JUDGE: B, all right.

PETERSON: All right. Now we're looking, same type of view from the left. This is a little bit easier here to see the gap that I was talking about that I described as being roughly two centimeters. For what it's worth, I measured it just like that, with the loop tight against one side of the neck, and measured the gap right there. Again, you can see better in this picture the overriding of the skull plates. Partly because of the brain being decomposed, partly because the plates aren't joined yet, as would be in an adult. A little bit better view of that tear that involves the shoulder, extends across the chest. Actually opened up the inside of the chest, ultimately down to the abdomen.

HARRIS: 258 C, somewhat more of a closeup. That item that you were describing that you thought was kelp, has that been removed in this photograph?

PETERSON: It has. There is still a stain there, and I remember thinking Well, that's pretty neat because iodine can do that, and there's iodine in kelp, so that was my thinking. It shows the ear is kind of flattened because that's, it's not necessarily well-formed cartilage in the ear at that point. Also the overriding of the skull plates. It's probably better to see it here, you can see how the forehead kind of collapses in, again because the brain has liquefied and those plates override.

HARRIS: 258 D, somewhat of an opposite view?

PETERSON: All right. This is a view of Conner from the right side now. And here's that tear I talked about. This is actually the top of the arm bone, the humerus showing through. So that's that post-mortem tear extending down across the chest. More of this tape-like material.

HARRIS: And last, the rear view, 258 E?

PETERSON: Another view of the knot and the tape, the head with the overriding skull plates. The back. There's some more liquefaction, disolving-type change there. That's actually skeletal muscle you can see through. I described the fact there wasn't particularly any scalloping around the edges. And scalloping is a change that I would associate with feeding, animal feeding, like crustaceans. I didn't see that here.

HARRIS: Now, just to go back through this. You're saying that's muscle tissue. Does that mean that something is occurring to the skin at that point in time?

PETERSON: Sure. Again, post-mortem change. Partly is dissolved away. Partly I think is just friction that might have been with the tear in the shoulder, the chest and the abdomen. Also affected this part of the body as the body was washed up. In fact, there's the bowel right there. The same process, I think. It's a soft body simply being pulled apart because of the tidal action.

HARRIS: And you were talking about that loop of tape. Do we see it better in this particular view, how it goes around the neck there?

PETERSON: Again, it's kind of hard to see, but this is the head here. There's the neck there. Here's the tape running around the neck. And those loops that you saw in the front near the left shoulder? Now the left shoulder is up. So you're just seeing those from the back.

HARRIS: And the one piece of the tape that goes all the way around the neck, does that go up past where that knot is at? If you're following that up with the pointer?

PETERSON: As we go up it looks to me like it's going over this way. It's kind of hard to tell, though. The resolution isn't great.

HARRIS: Okay. You can go ahead and resume your seat. Now, you were explaining for us the process that, and we've now seen the condition that Conner was in. You were explaining for us the process of decomposition. Was the decomposition between Conner and Laci consistent, inconsistent? Or can you describe that for us.

PETERSON: Conner's body was, relatively speaking, in much better shape with respect to most of the parts being there, compared to Laci's where, as you recall, we were missing substantial soft tissue, and even some bones from the arms and the legs. Conner's body had undergone a similar type process with respect to autolysis, maceration, body soaking in fluid, and so forth. But there wasn't quite the evidence that it had been exposed so much to the other physical forces that we discussed yesterday, namely the tidal action and animal feeding. So there were some similarities, but again, to my eye, marked differences, particularly including, particularly because Conner was so much smaller. And my thinking was that as small he was and as softened as he was, that if he had spent substantial unprotected time in the water, like Laci did, he would have been eaten. There simply wouldn't have been anything left.

HARRIS: From your examination of Conner and the state that he was in, versus Laci, what did that kind of mean to you?

PETERSON: My conclusion was that Conner had been protected, certainly protected to a greater degree than Laci was.

HARRIS: And did you have an opinion of how he was protected?

PETERSON: I did. And ultimately this came by comparing the two autopsies and by comparing the condition of Laci's uterus to the rest of her body. My thinking was that Conner had likely been protected by that uterus, and ultimately, with time in the water and with tidal action, the uterus was abraded open. At that time Conner was released and ended up washing ashore very shortly thereafter.

HARRIS: In terms of Laci's body, was the inside of her uterus somewhat protected or in a different state compared to the rest of her body?

PETERSON: Well, the fact is that her uterus was there at all, which was different compared to every other organ that she had had. So I think based on its location lower in the pelvis and however she acted against things at the bottom, and so forth, it took a while to wear away that part of her abdominal wall to get to the point where the uterus was exposed. It took further time to wear away the top of the uterus, which ultimately caused Conner's release.

HARRIS: Now, the term you kept using, you used several times, you described it for us before, that's that macerated term. That basically means that something had to be in a fluid environment?

PETERSON: Correct.

HARRIS: And Laci was in a fluid environment, but she wasn't protected in the same way. Can you describe the difference there?

PETERSON: Sure. We'll even use the term maceration in a hospital pathology where we're looking at a still birth and a baby that's died in the uterus and then, perhaps, is delivered a day or two or three or more later will undergo the same type changes. Not to the degree that we see in Conner, but maceration-type changes anyway. In a fresher stillborn, those will often involve skin changes, overriding of the skull plates, and, to a certain degree, liquefaction of the organs. So we'll see that in a hospital setting, too, and that's where that term maceration would be used. I think the difference is they were both in fluid, they were both in fluid environments, but Conner was much more protected than Laci. So the question is how can one reasonably explain

the fact, both fluid environments, there's so much more of her missing, there's really little of him missing, how does that happen. And my conclusion was the fluid was different. He was protected in the uterus. There was amniotic fluid. She was in the ocean. Different kind of protection.

HARRIS: You also mentioned that, when you were doing the autopsy of Conner Peterson, it was somewhat of a different thing that you were, or different conclusion, not conclusion; you were analyzing it from a different perspective. And I wanted to follow-up on that and have you describe, talk to us about what you mean by that.

PETERSON: Again at the time that Conner came in, first thing that morning, all we knew is that this was a body that had washed up, and, and we knew that basically we were looking at a fetus. So my thinking was certainly not this might be Conner Peterson. My thinking was Well, was this a stillborn or a live born. Again, if a live born baby is later either allowed to die or killed, and then disposed of, that's a rather important issue. If a baby is stillborn and the body is disposed of, that's still an important issue, but it is different than killing or disposing of a baby. So the job of a forensic pathologist is to try to determine, if we can, if that baby is stillborn or live born. Now, unfortunately, due to the condition of Conner's body the kinds of things that we would like to look for simply weren't there. For example one of the tests we can do, not really a test, one of the procedures that we can do is to take a microscopic section of the umbilical cord stump and look for a thing called vital reaction. The idea being that, in a living baby, when the umbilical cord is cut, there's inflammation at the end there. Eventually it scabs and dries and so forth. In this case, because of the post-mortem change, that simply wasn't practical. This was simply decomposed tissue. Another possibility would be to look for food in the stomach. So if the baby has fed after birth, there might be formula or curdled formula in the stomach. Again, that wasn't here. And that, that's about the extent of it. Unfortunately, there's no other dramatic, simple, or even complicated tests to differentiate stillbirth from live birth. So what I was left with was looking at Conner's anatomy and asking myself is there any anatomical reason that I think he couldn't have lived. I found no such evidence. So, just as the case was with Laci, I ended up concluding that the cause of death was undetermined.

HARRIS: Now, to go back through this process and looking at everything in terms of the anatomy, and you were describing the umbilical cord, was there an umbilical cord there, or a portion of it there?

PETERSON: There was a portion of umbilical cord. The measurement that I gave was half a centimeter, roughly a quarter inch.

HARRIS: And did you examine that at all?

PETERSON: I did. The, the margin of the cord, in other words, the part farthest away from Conner, I described as being soft and friable without evidence of knot or cutting. Friable means crumbly. It was falling apart.

HARRIS: Now, when you say no evidence of knot or cutting, what does that mean?

PETERSON: Well, there, once a baby's born, the umbilical cord has to be closed or else the baby will bleed to death. Typically in a hospital setting that's done by putting clamps, two clamps on the cord and cutting in between. So what you end up with is a placenta and an umbilical cord that has a clamp on it, and a baby and cord with a clamp on it. In this case there was no evidence that, there was obviously no clamp. Had the cord been cut, as with a knife, that will typically leave a sharp margin. The margin was not sharp. Sometimes there can be knots in the cord. That can actually be a cause of death in the uterus. A true knot in the cord. There was no knot in this cord. So to make a long story short, there was no evidence that it had been cut, there was no evidence that it had been clamped, there was no evidence that there was a knot there. All there was was a crumbly end.

HARRIS: Let me go back to something you just said. Under certain, you were describing a situation where there can be a knot in the umbilical cord and that can result in death. What happens? How does that happen?

PETERSON: The, the baby is certainly free to move in the uterus, and, and does a lot. And, and as that baby is moving, tumbling, whatever they do in there, they have to interact with their own umbilical cord. So it is possible to find even more than one actual knot in the cord, just from the way that baby loops around and tumbles, and et cetera, around the cord. It's more common to find a knot that isn't particularly tight and the baby does fine. We see those not uncommonly. Less commonly, depending on how that baby moves, if that knot gets snugged tight, then blood can no longer circulate between the placenta and the baby, and, of course, the placenta is sort of the life support system. That's how the baby gets oxygen and nutrients from the mom. So if blood can't flow through that cord, the baby dies.

HARRIS: So you examined the small portion of the umbilical cord that was there. You were describing for us earlier how they were, that Conner's intestines were there. Do you also examine things such as the intestines?

PETERSON: I did. In this case there was a portion of the colon that actually was coming out the anus. In the colon there was a material call meconium. It's a dark green, kind of thick, it's a pasty fluid. And typically when newborns have their first bowel movement, that's what you see is meconium. Sometimes when babies are in distress in the uterus they can actually dump that in the uterus, which can cause lung problems later. But in Conner's case the meconium was still where it belonged, in the colon.

HARRIS: And is there, does that indicate anything?

PETERSON: Well, the fact that was, that it was there. If it hadn't been there, then I might have thought Well, where did it go, why wasn't it where it was supposed to be. The fact that it was there was a clue to me that likely he had died before the birthing process, before he had a chance to get rid of that.

HARRIS: Did you, as you go through this whole process, was there anything definitive that could give you the answer, just looking at Conner, that could give you the answer of whether he had been born or not?

PETERSON: There was not.

HARRIS: And as part of the investigation that Jeff Soler from Richmond PD was there for, did you advise him of your findings at that point in time?

PETERSON: I did. And I, I think the way that I phrased it was, as I've said here earlier, was that there was nothing anatomic that would have precluded live birth.

HARRIS: And that's just looking at Conner?

PETERSON: That's correct.

HARRIS: Now, if you factor into everything that you find with Conner and then apply that to what you find with Laci, does that give you more information to form your opinion or conclusion?

PETERSON: It did, but unfortunately not specifically towards cause of death. I left the cause of death with Conner undetermined. But, truly, I believe that whatever, for whatever reason that Laci met her demise, it was her death that caused Conner's death; that he was still in the uterus. And I base that, again, on the difference in the bodies in terms of presence and absence, feeding, no feeding, protection, no protection.

HARRIS: I want to come back to, to the discussion about cause of death in a minute, but as you go through this process when you have Conner there just by himself before Laci comes in for the autopsy, was Conner identified?

PETERSON: He was, he was Baby Doe at the time of the autopsy. And, in fact, at the time of Laci's autopsy later that day, he was still Baby Doe. He wasn't identified until later in the week. Also by DNA.

HARRIS: I was going to ask you about that. Did you also do something in terms of attempting to have him identified by going through the same DNA process?

PETERSON: I did. Again, I took skeletal muscle, just as in the case with Laci, and also the thigh bones containing marrow. Those were shipped off to the DNA lab.

HARRIS: And ultimately the results for the DNA results for both Conner and Laci came back?

PETERSON: And that's how they came back, with those identifications, that they were Conner and Laci.

HARRIS: Once you, you got that confirmation that they were Laci and Conner, is that when you can put all of this information together conclusively?

PETERSON: Yes.

HARRIS: Now, I want to go back to the cause of death, you said you had to leave it undetermined because you couldn't find something. As you go through the process, can you rule certain things out?

PETERSON: Well, that's all part of the process. We can take, for example, drowning. All right. There's no specific test for drowning. On the other hand, when a body's found in the water, we'll look for anything else that might have produced death. Sometimes it's as simple as finding a bullet in the chest, stab wounds, evidence of strangulation. These things can be done to a body in forced deposit in the water. In that case, the question is did that person go into the water live or dead and, if dead, why? So that's, that's part of the thinking. So sometimes it's a matter of ruling things in. Sometimes it's a matter of ruling things out. Looking for trauma to the body that clearly happened before death. Looking for medical conditions that had to happen before death. And once you haven't found those sorts of things,

GERAGOS: There would be an objection. It's non-responsive at this point.

JUDGE: I don't think so. Overruled. Go ahead.

PETERSON: Once, once you haven't found certain things, then you look for the negatives. Once you've gone through that list of positives and negatives and you really can't say, that's how you end up with undetermined.

HARRIS: Now, we're talking about the cause of death being undetermined. Ultimately, though, the manner of death, which is something different, was determined to be homicide by the county?

PETERSON: It was.

HARRIS: And when we're talking about manner of death, that's either accident, suicide, homicide?

PETERSON: "Natural" or "other," or "pending."

HARRIS: Okay. To go back in terms of what you could rule out, did you have any type of physical damage consistent, in Conner. So start there and work our way out. Any physical damage that would look like a cause of death when it came to Conner?

PETERSON: I did not. The only physical damage that I found in Conner I could attribute to post-mortem change. So there was nothing that I could point at and say This must have happened before death. Nothing at all.

HARRIS: Didn't find, as you were describing before, bullets, stab wounds, anything along those lines?

PETERSON: Nothing.

HARRIS: As you moved out to Laci's remains, what did you find there, or not find?

PETERSON: Well, that was the same issue. My challenge with Laci is that so much was missing. Could there have been damage before she died to the head, to the neck, to organs in the chest? There most certainly could have, but I simply found no evidence that I could point at and say This must correlate to antemortem injury. No bullets, no cut marks, just nothing that I could make into lethal damage. The toxicology was also not productive. We found some decomposition chemical and some caffeine. We probably all have caffeine. So at that point I was left with undetermined. Nothing positive there that I could make cause death.

HARRIS: Now, as you, going through this, and you talked a little bit about the, whatever, the tape, I believe, you referred to around Conner, ruling that out as being anything associated with an injury or death to him. That part of the area for Laci Peterson was missing, wasn't it?

PETERSON: It was.

HARRIS: And could you rule that out as a cause of death for her?

JUDGE: Rule what out?

HARRIS: Rule out strangulation or anything of that nature for Laci Peterson?

PETERSON: Well, the challenge there is that, one principle of forensic pathology is that parts of the body that are injured tend to decompose quicker, for a number of reasons. Could there have been damage to her neck or to her face? Sure. But the problem was her neck and her face were missing, so I simply couldn't say that in a positive way. There are a lot of things that could have happened to her. Most of the soft issue tissue of her chest was missing. Could she have had a through-and-through gunshot wound that didn't hit bone?

17 Sure. But I had no way of proving it because there wasn't a bullet and there was no injury to bone. So, again, there was so much that was not there that there was nothing positive that I could point to and say This was the cause of death.

HARRIS: When you're talking about something like the gunshot wound, is that something that you would expect would produce some blood?

PETERSON: Well, typically gunshot wounds are associated with bleeding, both external and internal.

HARRIS: If we're talking about strangulation or suffocation, is that something that's going to produce blood?

PETERSON: Not particularly blood. Asphyxial-type death in general can be associated with more fluid inside the lungs, which is a reaction to asphyxia. And somebody who is going through that process can certainly have bloody foam coming out of their nose and mouth. But not always. In terms of, there's not really a nice way to put this, but in terms of ways of killing people that aren't going to leave that kind of material outside the body, certainly smothering is one of those ways that's more likely not to produce blood and fluid outside the body.

HARRIS: So you are saying that there are ways in which someone can be killed and there's not really anything left behind?

PETERSON: Oh, sure.

HARRIS: Smothering, you indicated?

PETERSON: Oh, certain types of asphyxial death. For example, we talked about ligature strangulation earlier. That could do it. Certainly certain types of toxicologic death. Poisoning could do it. Pretty much you're going to have blood escape the body if you create that hole that wasn't there at the beginning. And there are many ways of producing death without creating extra holes.

HARRIS: Now, we were going through this process of decomposition yesterday, and you were describing for us some of the changes that happened. And I want to take this down and, in terms of kind of a step-by-step process. After somebody dies, you were going through and giving us the chemical changes that affects, and you were saying something about muscle rigidity, and there's a term that you use for that.

PETERSON: Sure. That's called rigor mortis. It's post-mortem stiffening of the muscles. The rule of thumb in our textbooks is that typically rigor will be appreciable, say, in within two to four hours of death. By twelve to 24 hours fully formed. After that it will start passing off. The problem with rules of thumb is that there are always exceptions. And, in a practical way, the use that we have for that post-mortem muscle stiffening is to try to determine if the body had been moved after death. So, for example, right now I'm in a seated position. So if you found my body in the parking lot and I'm still in a seated position, your conclusion would be that I didn't die out there, I died someplace else where I was seated. So rigor mortis can be helpful in that regard. But in terms of establishing a specific time sequence, that's television. That's not real forensic pathology.

HARRIS: And in terms of, you were talking about being in a seated position and being moved, does the body always stay in the position that it was when the, when the person was killed?

PETERSON: Once rigor mortis has set, it will stay set until one of two things happens. One possibility is that decomposition continues. And as decomposition continues, the muscle will loosen up. The other possibility is that somebody like me comes along and, and moves things around in order to do the autopsy. And when that happens, once rigor mortis has been broken, it will not reform. So, again, finding the body in a seated position, if you were then to straighten that body out to place on the gurney, to place in the, in the truck to take to the morgue, it's not going to reset. So you're not going to have a body resume the seated position in the morgue. Once it's been broken, it stays broken.

HARRIS: Now, you used the term "broken." Is it something, are you breaking bone when you do this?

PETERSON: Usually not. Usually it's a matter of simply overcoming resistance in muscle.

HARRIS: So kind of like, by analogy, if somebody is arm wrestling, you've got some force being used against the other force?

PETERSON: That's the same idea.

HARRIS: And it's just muscle tension?

PETERSON: Correct.

HARRIS: So if one person in arm wrestling is stronger than the other, they get the other person's arm down?

PETERSON: Sure. Typically I'm stronger than my patients, so it works. And what's happening is it's a chemical phenomenon in the muscle. And I guess the practical way to think about it is the muscle essentially gels post-mortem, and it, it can be overcome, depending upon how muscular somebody is. If it's a body-builder type it can be more work, but if they're very slender it can be less work. But we generally win.

HARRIS: Now, going back to, I don't want to say the big picture, but in terms of when you were all done in this particular case, you have the toxicology back, you have the DNA back, and you've identified both Conner and Laci, and what is your ultimate opinion about Laci and Conner and them being together in this marine environment?

PETERSON: My opinion is that when Laci was deposited in the marina environment, Conner was still within Laci. And ultimately, because of the effects of environment, animal feeding and decomposition, Laci's front degraded sufficiently to allow access of the uterus to the outside world, and ultimately Conner.

HARRIS: And you were talking about in this marine environment some movement an disarticulation that you already talked about. If someone were to have put anchors on that particular body, is that something that would keep a body in a marine environment?

PETERSON: Well, it sure can. You know, because of post-mortem gas formation, it's possible for bodies to float up, even anchored. It kind of depends on how much anchor, and there's no way to depict that in advance. But if, depending on where anchors were placed on a body, it could hold the body in one place for a while. Depending on how the anchors were attached to the body, say, for example, they were attached to the arms and legs, once joints start falling apart because of the decomposition, the rest of the body could have exited, leaving the arms and legs and anchors there. It all depends.

HARRIS: And what you found with the remains of Laci Peterson, is that consistent with disarticulation in a marine environment? Kind of these normal environmental causes that you described?

PETERSON: It is.

HARRIS: And could that also be consistent with those missing limbs being anchored?

PETERSON: Sure.

HARRIS: The People have no other questions.

Cross Examination by Mark Geragos

GERAGOS: Good morning, Doctor.

PETERSON: Good morning.

GERAGOS: The cause of death for both Conner and Laci is undetermined; is that correct?

PETERSON: That's correct.

GERAGOS: And the time of death for Conner or for Laci, is that also undetermined?

PETERSON: It is, yeah.

GERAGOS: The time that Conner or Laci were put into a marine environment, as you call it, that's also undetermined, isn't it?

PETERSON: It's undetermined in the sense that my opinion is that it was months, but I wouldn't be any more specific than that.

GERAGOS: Okay. You and I have talked before about this, and I could give you, I could say 30 days, 60 days and you're not going to go there; is that correct?

PETERSON: That's correct.

GERAGOS: Okay. And all you'll say is that they were, at least Laci was in a marine environment, meaning she was in water, correct?

PETERSON: Correct.

GERAGOS: Okay. Conner, as I understand what you're saying is, the difference between the way Conner looked when Conner's brought to you and the way Laci looked, there was marked differences; is that correct?

PETERSON: That's correct.

GERAGOS: Okay. And I believe that the main thrust of your observation is that Conner had no evidence of animal feeding on him; is that correct?

PETERSON: That's correct.

GERAGOS: And if I understand you correct, that because of Conner's size, that one would have expected, if Conner was in the water for a period of time, that Conner would have been, the animals would have fed on Conner because of his size; is that a fair statement?

PETERSON: That's fair.

GERAGOS: Okay. You estimated Conner to be nine months based upon, you did some measurements on Conner; is that correct?

PETERSON: I did. The two measurements that we performed are called crown-rump length and crown-heel length. The crown is just the top of the head. Crown-heel is pretty self-explanatory. Crown-rump is from the top of the head to the buttocks. Of course, I was limited in this case by the fact the body was so soft and it was difficult to get an accurate measurement. I knew that at the time. You do what you can do, but I knew that down the line there would likely be more accurate measurements possible.

GERAGOS: Okay. And you estimated based upon, I guess when you measured the crown-rump length, that gave you a specific number. What was that number, do you remember?

PETERSON: The crown-rump length, from my report here, was 32 centimeters.

GERAGOS: How many inches is that?

PETERSON: I'm sorry?

GERAGOS: How much inches does that translate into?

PETERSON: About 15.

GERAGOS: Closer to 17?

PETERSON: Seventeen. There's 2.54 centimeters per inch, but I wasn't a math major.

GERAGOS: Okay. The, the, and then is there a chart that you then use to show to convert to the number of months?

PETERSON: There was.

GERAGOS: Okay. And that chart put the baby's age at nine months; is that correct?

PETERSON: Correct.

GERAGOS: And you, you also characterized in your report, did you not, previously when you've testified, that the baby appeared to you to be a full-term baby; is that correct?

PETERSON: Correct.

GERAGOS: Now, when the baby was brought in to you, you had indicated on direct that one of your first determinations was to decide whether or not Conner had been, you didn't know it was Conner, you knew him as Baby Doe, whether or not he had been stillborn or whether he had been born live; is that correct?

PETERSON: Correct.

GERAGOS: Okay. And I assume that's a pretty, I think the way you were explaining it, if I understand correctly, is that becomes, just from a legal standpoint, a significant finding for you to make as the medical examiner; is that right?

PETERSON: That's correct.

GERAGOS: Okay. Because obviously a different investigation ensues if the baby's born alive than if the baby is not?

PETERSON: Right.

GERAGOS: Okay. Now, you, your ultimate conclusion was you could not determine if the baby was born alive, correct?

PETERSON: That's correct.

GERAGOS: And I've asked you, obviously, because we've gone over this before, you could not rule out that he was born alive; isn't that correct?

PETERSON: That's correct.

GERAGOS: Okay. Now, there was several reasons that you could not rule out the fact that he was born alive; is that a fair statement?

PETERSON: That, that's one way of putting it. Basically,

GERAGOS: I was going to ask you, I'll lead you for just line 6 a minute. If you want to add to it, feel free to do it. One of the reasons, and I think we talked about this before, was the umbilical cord. You looked at the umbilical cord because there was certain clues, as you indicated, that can come from that; is that right?

PETERSON: Well, those wouldn't necessarily be so much clues as to live birth, but they were clues to me as to whether or not anything had been done to that cord.

GERAGOS: Right. Which then would give you a clue as to whether there has been a live birth; isn't that a fair statement? I mean if there are things that are done to the umbilical cord, you've got a pretty good indication, if it's not just a knot that occurred in the womb, that this baby was handled outside of the uterus, correct?

PETERSON: Well, you know, I'm not an obstetrician, but I think if, if there's question as to whether or not a baby is being born alive, then the cord may be handled the same way, as if the baby's alive for sure. So I think in the case of the stillbirth, it might still be possible to have a cord that's been clamped and cut, and so forth.

GERAGOS: I guess, that's an interesting distinction. The, basically what you're, what we're saying then is you're looking at the umbilical cord to see if the baby had been handled outside of the uterus; is that a better way to put it?

PETERSON: I think that's a better way to put it.

GERAGOS: Okay. So, and I've specifically asked you before that, if I understand correctly, I've got a, I've got a slide where I've kind of focused on the umbilical cord, from one of the pictures that Mr. Harris had. And then there's the question that I had asked you.

PETERSON: Uh-huh.

GERAGOS: Let me just put that up for a second. This is --

JUDGE: You want to mark?

GERAGOS: Mark that as defense next in order.

JUDGE: D 6 S.

GERAGOS: Now, right here, this is a close-up of the umbilical cord, or the area where you would expect to find one; is that right? Right there?

PETERSON: It is.

GERAGOS: Okay. And if I understand correct, there was, you estimated it was about a half a centimeter?

PETERSON: About a quarter inch.

GERAGOS: Quarter inch. Okay. Now, and specifically I asked you before that isn't that consistent with the length of an umbilical cord after a live birth?

PETERSON: You asked me that question.

GERAGOS: Yes. And you said: Well, there was, your answer, if, I assume it hasn't changed since the last time we talked, is that: There was a quarter inch of umbilical cord protruding beyond the skin, and perhaps the easiest way to answer your question, I hope I'm hitting the target for you here, is that based on the length of the umbilical cord, I could neither rule in nor rule out live birth; is that correct?

PETERSON: That's a good answer.

GERAGOS: You gave it.

PETERSON: That's why I'm saying it's good. I wouldn't be using the length of the cord as the fact to establish live or stillbirth. I think we went on in that same conversation to talk about my experience with my boys and the fact that typically, in a living baby, there's a longer piece of cord. But then I admitted that my, my statistical sample probably isn't valid since I just have two boys.

GERAGOS: Right. The, in fact, specifically we also went over, last time we talked, the fact that you had given a statement, I guess, to a Detective Grogan in April of 2000 and 3. And specifically I asked you if you had told Grogan that you were unable to state for certain whether the umbilical cord had been tied at one point along the ragged end of the umbilical cord, or if it had been attached and came off as part of the decomposition. Do you remember that?

PETERSON: Yes.

GERAGOS: Okay. If I understand what you were telling him, is you couldn't tell if this had been beyond the area that is right here, beyond that specific area, that, the quarter of an inch that's protruding, you couldn't tell whether or not it had been tied off; isn't that correct?

PETERSON: Well, again, a normal umbilical cord is maybe 15 or 20 inches long. So how the rest of that cord looked, beyond the quarter inch that was still on the body, I can't say.

GERAGOS: Okay. And you specifically said that that was, if I understand correct, you told him that you could not be certain whether the child had been stillborn or had gone through a birthing process due to the condition of the umbilical cord; is that correct?

PETERSON: I'm not sure what he understood. As I said earlier, I'm not trying to judge live versus stillbirth based on cord length. I wouldn't do that.

GERAGOS: But in terms of then, let's go back to what we kind of recognized, at least when we were talking about it. At least you could not make a determination that this baby was handled outside of the uterus; is that right?

PETERSON: Based on that cord, no.

GERAGOS: Okay. And based on the, and you found no evidence, either in Laci or on Conner, of either the umbilical cord or the placenta; is that correct?

PETERSON: That's correct. The, the rest of the cord and the placenta were absent.

GERAGOS: Okay. Now, the, one of the other things that you mentioned was, let's see, that you figured that there would be other tests to determine, you had estimated Conner as nine months, or as, a full-term infant, correct?

PETERSON: Correct.

GERAGOS: Okay. And when he first came in and you saw him just alone, you had estimated him as actually having been, what, a nine month fetus? Or as actually as a full-term infant? Or was there no difference for you?

PETERSON: Well, what's "term"? 280 days. So depending on how one measures, and based, again, only on the crude measurement that I could do, nine months and/or term.

GERAGOS: Okay.

PETERSON: Recognizing that is rough and recognizing that even with these tables, when you're looking at measurements, there's a, there's a range. There's no --

GERAGOS: Right.

PETERSON: no specificity there.

GERAGOS: Okay. Now, the, in addition, Mr. Harris showed the picture of the cord, or not a cord, of the tape around the neck. Do you remember that the picture?

PETERSON: I do.

GERAGOS: I don't want to pull it back up again. But the fact of the matter is that there was only approximately less of an inch space when you pull that tight; is that correct?

PETERSON: Correct.

GERAGOS: Okay. Now, you did not attempt to try to pull that off of the baby; isn't that correct?

PETERSON: That's correct.

GERAGOS: Because you were afraid that that would do some damage to the baby, correct?

PETERSON: I suspect it would have, but I think, as much as anything else, it was habit.

GERAGOS: Okay. Then you ended up cutting it off; isn't that correct?

PETERSON: I did.

GERAGOS: Okay. Now, the, the way that it, at, we just saw the picture, it appears that the, this tape or this twine was wrapped around, and then around the neck, and then it appeared, if I understand the way the picture is, to have been tied and there was a knot and a bow; is that correct?

PETERSON: Except you're gesturing towards your right, and I believe that bow was towards, towards the left.

GERAGOS: Okay. And so the same process, underneath the arm and then back around the neck. And there was a space, as you indicated, of two centimeters around the neck area; is that correct?

PETERSON: Right.

GERAGOS: Okay. Now, you've indicated that the twine or this cord, that you didn't see any evidence that it was the cause of death, correct?

PETERSON: There was, there was no damage to the neck that I could associate with that tape.

GERAGOS: Okay. But there was also nothing eliminating the distinct possibility that that was placed on post-mortem and then tied, is there? Nothing eliminates that possibility that you saw?

PETERSON: I would just say that, as a forensic pathologist, that's outside of what I would normally determine or even think about.

GERAGOS: Okay. So you wouldn't, that's not in your area of expertise?

PETERSON: No.

GERAGOS: Okay. Now, you had also mentioned specifically the, this item that's on the side of the baby's ear, which is 258 A, this item right here?

PETERSON: Yes.

GERAGOS: Okay. Now, today you said you recognize that as kelp; is that correct?

PETERSON: Well, I said at the time I did the case that's what I thought that it was.

GERAGOS: Well, I believe that I asked you, let me just take a look, at the time, the last time we talked, whether, whether or not you remembered that. Are you telling me today that you do remember that?

PETERSON: Well, I remember in the preliminary hearing we talked about that at least a couple different places, and the first time that it came up I used the word "kelp." Then we talked about it later on, and I'm not sure which occurrence you're talking about.

GERAGOS: Okay. Let me see if I can just find it here. Bear with me here. Okay. Specifically, let me show you page 1511 of the preliminary hearing transcript. And then I'd point you to those lines that are yellow highlighted. Did you have a chance to read that?

PETERSON: I did.

GERAGOS: Okay. I specifically asked you: The one piece of rectangular black substance that was off, that was on the ear, did you actually take that off? Your answer was: I don't remember taking that off. I don't specifically remember that piece of material at all.

PETERSON: Right.

GERAGOS: Okay. And then I asked you: Okay, you don't remember it, you don't remember taking it off? You're looking at the pictures here; is that an accurate picture, though, of how the baby looked when you saw the baby on the 14th? You said: I believe it is. I said: But you do not remember taking off what I refer to as the black substance off the ear? And your answer was: No. Is that correct?

PETERSON: Correct.

GERAGOS: Okay. So as you sat there back in, I don't remember, September or October of last year when we were in Modesto, you had no memory at that point whatsoever of this substance that was on the ear; is that correct?

PETERSON: I sure don't remember doing anything with it, no.

GERAGOS: And, specifically, this substance is running along the side. And I've got another picture.

JUDGE: Is this a Defendant's Exhibit?

MR. GERAGOS: Yes. A Defendant's Exhibit.

JUDGE: You want to mark it as 6 S 1?

MR. GERAGOS: Yes. Can I make it 1 and 2?

JUDGE: All right. (Defendant's Exhibits D 6 S 1 and 2 marked for identification)

GERAGOS: And I'm going to show you these two pictures as well. 1, which is, this is a picture of how the baby looked when you did the exam or when it was first brought in by Detective Soler?

PETERSON: It is.

JUDGE: Mr. Geragos, I want to interrupt a second.

MR. GERAGOS: This is D.

JUDGE: You marked, 6 S was the photograph of the umbilical cord?

MR. GERAGOS: Yes.

JUDGE: So I don't want to get these confused. So why don't we mark this number 2.

MR. GERAGOS: No, this is S 1, and then this is what we marked as S 2. Is that okay?

JUDGE: Okay. That's fine.

CLERK: Make the other one 3?

JUDGE: Maybe the other one 3.

GERAGOS: Okay. This is how the baby looked when the baby was brought in before you did anything, correct?

PETERSON: Correct.

GERAGOS: Okay. Now, I'm going to show you this slide here, which is a composite of two pictures. One with the tape there, and one with the tape off. One, I shouldn't call it the tape. I'll say one with the substance on and one with the substance off. Do you notice that it just so happens that this substance, when it was on, when it was first brought in, somebody must have taken it off, correct?

PETERSON: Correct.

GERAGOS: Okay. And when it was taken off, it just so happens that the ear is flattened against the side of the head?

PETERSON: It is.

GERAGOS: Okay. And did you note that in any of your observations, you know, we talked about the anatomical, whether, whether there were any anatomical abnormalities. Would that qualify as an anatomical abnormality?

PETERSON: The position of the ear?

GERAGOS: Yes, the position of ear. The fact that the ear, if I see that correctly, the ear is not flat as one normally would expect it. It's actually flattened over against the head; is it not?

PETERSON: Sure. I described in my report that the ear contained an appropriate amount of cartilage; but, again, this is a macerated, soft baby, and that softening is going to produce those kinds of changes. So I would agree with you completely, the ear is not in a normal anatomic position, but then in a baby that's this liquefied, I think that's just fine.

GERAGOS: Okay. But the, as you as you sit here today, is it a fair statement you don't even remember this piece of material that's on the ear at the time you did the autopsy?

PETERSON: I don't really have any independent recollection of the autopsy at all.

GERAGOS: Okay. So when we're speculating, or when you were speculating it was kelp or seaweed, that's exactly what it was? You were speculating; isn't that correct?

PETERSON: Sure.

GERAGOS: Okay. There's no basis, besides that, if I told you that we've had the criminalist on who says that it turns out that they did not save this towel, or any of the debris, that it's just disappeared, we don't have anything with which to discover at this point, do we? To go back and take a look at it and figure it out. You don't have any memory of it; all we've got is this photo,

correct?

PETERSON: Well, if that's what you're telling me, I'll believe you. I don't know what happened to that stuff.

GERAGOS: Okay. Normally that's not in the realm of what you would handle, correct? I mean you would, you would take items off of the body when you're doing it. You would, as you said, you cut, as a force of habit, this particular twine or tape. You, if, if you did remove the substance on the ear, you would have removed it and placed it there. From that point it would have been the criminalist's job to have saved that stuff?

PETERSON: That's correct. That would be his call, his material.

GERAGOS: Has nothing to do with you?

PETERSON: At that point, no. I'm there for the body.

GERAGOS: Right. Okay. Now, specifically, in addition to that, the, you also called in a Dr. Galloway; is that correct?

PETERSON: I didn't personally, but the office did.

GERAGOS: Okay. And she came to some conclusions about, and she was brought in as an anthro, forensic anthropologist?

PETERSON: As a specialist in bones and bone measurements, that's correct.

GERAGOS: Okay. And what she did is she measured, I guess after the autopsy a certain bone was given to her, or certain bones?

PETERSON: She did.

GERAGOS: Okay. And this was of Conner?

PETERSON: That's correct.

GERAGOS: Okay. Do you have, and we went through this before. You've looked at this report, you've analyzed this report in terms of whether or not it's, kind of jives with yours?

PETERSON: Correct.

GERAGOS: Okay. If you could refer to that for a second, and tell me specifically, if I could look over your shoulder while you're doing it, if you don't mind. She's got a chart of measurements; is that correct?

HARRIS: That would be Bates stamp 15792.

GERAGOS: Okay. Now, that page there are measurements, and she then ends up, I guess, which bones did you provide her, were provided to her for that?

PETERSON: The bones that she describes in this chart are the right humerus, the upper arm bone; the right femur, which is the thigh bone; the right tibia, which is the shin bone; and then, finally, the right parietal bone, from the side of the skull; and the right frontal bone from the forehead area. Those were the bones that she listed in the table.

GERAGOS: Okay. And I don't want to butcher the pronunciations, but for the humerus she had a measurement, and then she had two scales that she compared it to; is that correct?

PETERSON: Well, she gives the actual measurement of the bone, and then I believe what she's listing is reference ranges from the references that she used.

GERAGOS: Okay. The one, the first one, when she measured the humerus bone, the right humerus bone, it was, the range for the age of the baby was 36 to 38 weeks?

PETERSON: That's the first table.

GERAGOS: And the second one was 35.6 weeks?

PETERSON: Correct.

GERAGOS: When she, when she measured the right femur, the first table was that the baby was 36 to 38 weeks?

PETERSON: It is.

GERAGOS: And that the, on the other table it was 35.1 weeks?

PETERSON: Correct.

GERAGOS: And when she measured the right tibia, she got 36 to 38 weeks?

PETERSON: Yes.

GERAGOS: And 36.3 weeks on the other scale, correct?

PETERSON: Correct.

GERAGOS: When she measured, is it the parietal?

PETERSON: Parietal.

GERAGOS: Parietal, the right parietal, the cord height, she got that the baby was 40 weeks, according to the schedule?

PETERSON: Yes.

GERAGOS: And when she did the perimeter height, she got 34 weeks?

PETERSON: She did.

GERAGOS: When she did the cord width, she was at 34, the baby was at 34 weeks?

PETERSON: Yes.

GERAGOS: The perimeter width, 36 weeks?

PETERSON: Correct.

GERAGOS: Cord height, 38 to 40 weeks?

PETERSON: Around the frontal.

GERAGOS: The right frontal bone. A separate bone?

PETERSON: Yes.

GERAGOS: And perimeter height, 34 to 36 weeks?

PETERSON: Yes.

GERAGOS: Cord width 36 to 38 weeks; is that correct?

PETERSON: That's correct.

GERAGOS: And perimeter width, 34 to 36 weeks, correct?

PETERSON: Correct.

GERAGOS: Okay. The lowest on any of these charts that she compared the baby, the measurements to, the absolute youngest that she has, and it's only on one, two, three, four of the measurements, is 34 weeks, correct?

PETERSON: That's correct.

GERAGOS: And the average is roughly 36 to 38 weeks; is it not?

PETERSON: Let me see. She, she states a number of age ranges in her report, and it looks to me that her ultimate conclusion is listed as 33 to 38 weeks. I'm not sure if she drew an arithmetic

average, or anything.

GERAGOS: Okay. There's no measurement that she compares to here on her appendix where the baby's age was 33 weeks, is there?

PETERSON: Not in this table. She refers to in her report, though, with different racial groups.

GERAGOS: Okay. Specifically there's a number, looks like one, two, three, four, five, six, six of the one, two, three, four, five, six, seven, eight, nine, ten, eleven, six of the eleven measurements go as high as 38 or 40 weeks; isn't that correct?

PETERSON: They do.

GERAGOS: Okay. And that would be, she was called in for her expertise on estimating age; isn't that correct?

PETERSON: Yes, it was.

GERAGOS: Okay. And specifically in addition to that, if I can go back and kind of change gears for a second, back to Laci.

JUDGE: You know what, Mr. Geragos, maybe this would be a good time to take the morning recess. All right, ladies and gentlemen of the jury, we'll take the morning recess until ten minute to 11:00. Remember the admonition I've heretofore given you. (Morning recess)

JUDGE: All right. This is the case of People versus Scott Peterson. Let the record show the defendant is present with counsel. The jury is in the jury box along with the alternates. Go ahead, Mr. Geragos.

GERAGOS: Thank you.

GERAGOS: Doctor Peterson, I had asked you before we talked at the break. You had said that you had created a scenario that the baby could have been in the uterus in the marine environment; is that correct?

PETERSON: Correct.

GERAGOS: And I think I have asked you, I assume it's still your opinion, that it is possible for something else to have been protecting the baby, aside from Laci's uterus; is that correct?

PETERSON: Sure.

GERAGOS: And the portion of the uterus, we have got a kind of a skeletal chart that Doctor Galloway, this came from Doctor Galloway's report?

PETERSON: It did. Upside down.

MR. GERAGOS: This is marked as People's 259.

JUDGE: People's next in order 259, Doctor Galloway's anatomical chart. Anatomical Chart

Marked as Exhibit 259 for identification.

GERAGOS: I don't know if the jury can see it from there. But the frayed rib that you were talking about is where I have got my pointer?

PETERSON: It's the right 9th rib indicated by the green on the diagram.

GERAGOS: And the uterus comes up right in this area where I'm pointing to?

PETERSON: That's correct.

GERAGOS: Okay. And when the baby is in the uterus, is it a fair statement that it would be, the baby would be in this area where my hand is right here?

PETERSON: Well, and then all the way down to the pelvis too.

GERAGOS: Dropping in this area like this?

PETERSON: Normally the head is down, the feet are up by, that whole space is taken up by uterus and baby.

GERAGOS: Okay. Now, the, this whole space that we're talking about, which is the chest cavity, there are normally, when you do an autopsy, a number of organs present, correct?

PETERSON: Well, where the baby is, is pelvis and abdomen. And, yes, there are normally organs there.

GERAGOS: What are the organs that are normally there?

PETERSON: In front of the uterus it would be the urinary bladder.

GERAGOS: That wouldn't, that would be down here?

PETERSON: Also, the ovaries are down there, the Fallopian tubes all around this level. On the other side is the vertebral column, which is, the kidneys sit up here underneath the rib margins, the liver. On the other side, over on the left side, spleen, stomach. Then, of course, the bowel is pretty much where it wants to go. It moves.

GERAGOS: And the heart is up in this area here?

PETERSON: Right. Heart would be about here, lungs.

GERAGOS: Heart is gone, the lungs were gone?

PETERSON: They were.

GERAGOS: Spleen was gone. Kidneys were gone. Liver was gone. There were no internal organs. And the only injury that, you couldn't determine whether it was antemortem or postmortem, was this?

PETERSON: That was the fraying of the end of the rib. I didn't make an assessment. I thought perimortem would be a good term.

GERAGOS: Peri, meaning question mark?

PETERSON: Correct.

GERAGOS: Okay. And when a woman is pregnant, in an advanced stage of pregnancy, the baby is going to be sitting here like where my two fingers are; is that correct?

PETERSON: Well, again, the baby's head is normally down in the pelvis. It's actually right above. And then when the woman is ready to go into labor, the head will settle, depending on the size of the baby, how far up it goes.

GERAGOS: Okay. And the, flesh for lack of a better term, there just was nothing in this area here; is that correct?

PETERSON: Well, be up to, if we assume that about right here where I'm pointing is where the belly button would be. Above there, no flesh. Below there, there was some fat and the muscle deep to that. And the skin and tissue just beneath the skin was all gone.

GERAGOS: Mr. Harris had asked you specifically whether or not an injury accelerates decomposition. Do you remember that?

PETERSON: I made the comment that areas that are injured can decompose faster.

GERAGOS: Is there one possibility that there was an injury to the area on the front of Laci Peterson which accelerated the composition of this area here that I'm pointing to?

PETERSON: Well, again, if we're talking above the level of soft tissue, a lot of things could have happened there. And I simply have no way of saying.

GERAGOS: Okay. You have, what we have is, you have got a frayed edge near the rib, which is about where I'm pointing to; is that correct?

PETERSON: Correct.

GERAGOS: Okay. And we have no tissue from roughly the belly button up; is that correct?

PETERSON: Correct.

GERAGOS: And that is consistent with an injury and accelerated decomposition, is it not?

PETERSON: Consistent with is probably a good term. Again, I had no evidence of that, because soft tissue was missing.

GERAGOS: Okay. But consistent with is one distinct possibility?

PETERSON: It's a possibility.

GERAGOS: Now, the, I think you were also asked by

10 Mr. Harris about asphyxia as one means of causing a death.

PETERSON: Yes.

GERAGOS: Is that correct? Now, asphyxia or smothering. If somebody was smothered or asphyxiated, strangled, or strangled in such a fashion, I guess you made the distinction if somebody was strangled, that there would be sometimes blood or foam coming out of the nose or the mouth?

PETERSON: There sometimes is.

GERAGOS: Okay. And if they are smothered, you would not see that, is that,

PETERSON: Sometimes you do, sometimes you don't.

GERAGOS: Would something else happen, if something happened to a body when the body ceases to be alive, what is the first thing that happens with bodily fluids?

PETERSON: It depends. That's variable. Sometimes you get urination and defecation postmortem. Sometimes you don't. I have never seen a reliable trend. Depends on the person.

GERAGOS: But that's one of the things that you do see postmortem; isn't that correct?

PETERSON: Sure. In some cases.

GERAGOS: Okay. And any other things that would be postmortem in terms of bodily fluids?

PETERSON: Sometimes men ejaculate postmortem.

GERAGOS: Any other bodily fluids or excretions that take place?

PETERSON: Depending on how long the postmortem period is, at a certain point it's typical to get gastric stomach contents coming out of the nose and mouth. We call that purging. But, again, depends on how long the body has been dead and how much decomposition there is.

GERAGOS: And how long does it take for purging to occur?

PETERSON: I don't say. Postmortem is so variable. Depends on an awful lot of things. There is no reliable scale for that.

GERAGOS: Okay. Specifically with rigormortis, we went through as well with Mr. Harris. If somebody was killed and rigormortis sets in, your indication is, once again is you indicated there is no set rules; is that correct?

PETERSON: Correct.

GERAGOS: But you indicated that generally you would see rigormortis setting in two to four hours?

PETERSON: That's a rule of thumb. Again, a lot of exceptions.

GERAGOS: Okay. When that happens, you move the body, the rigormortis I assume, is the body pliable, postmortem?

PETERSON: Well, until rigormortis sets in, sure the body is quite flexible. And when rigormortis begins to set in, it becomes less flexible. At some point rigormortis is going to peak. At that point the body is relatively inflexible. Oftentimes it takes some physical effort to overcome the rigor. And when the process of decomposition starts, it becomes limp again.

GERAGOS: If I understand correct, you pronounce it rigormortis. Rigormortis, generally anywhere from two to four hours, up to 24 hours?

PETERSON: Well, the rule of thumb is, it's noticeable within two to four typically in the small facial muscles. Between say 12 and 24 it can be fixed. But, again, there are so many variables. Depending on the environment and the person, and their body composition, and their state of health. All sorts of things can affect that.

GERAGOS: When you place somebody in a position, if you were to place them in close confines, you were to place them in a position like, commonly called a fetal-type position, or have them, place them in a, box for instance, during that period of time, what you call the rigormortis setting in, would you then expect, as rigormortis is setting in, the that body would lock in that position?

PETERSON: Yes.

GERAGOS: Once it locks in that position, is it fairly set, unless a lot of force is used to, in order to break it apart?

PETERSON: Again, depending on the person applying the force and the composition of the body. It can take more or less force. Force you will usually assess it as moderate or large amount of effort when I do an autopsy. And then, depending how long that person has been dead, they will be fixed in that position for a while. As they start to decompose they will go slack again.

GERAGOS: When is that, I know that, once again, my guess is, you are going to say there is no rule of thumb. I assume that rigormortis sets in, that during that period somebody is placed in a confined position, during the setting in of rigormortis the body is going to harden. How long does it take, once again, for the body to get slack?

PETERSON: There is no specific time interval. Depends on the environment and the person.

GERAGOS: Now, the other question I was going to ask is, do you ever measure the head to rump of Conner? Did you ever?

PETERSON: I did not.

GERAGOS: And you said that you did not determine either a cause of death for either Laci or Conner until you got back the toxicology results; is that correct?

PETERSON: Well, the cause of death was determined, in the sense that it was undetermined.

GERAGOS: Did I understand correctly, though, in this case you wanted to wait until you got the toxicology results?

PETERSON: I think provisionally my cause of death was undetermined. And then ultimately, as more information came back, it stayed that way. With Conner, I don't recall doing a toxicology for him. And I think he started out and then remained undetermined.

GERAGOS: And the toxicology on Laci showed elevated levels of caffeine?

PETERSON: I'm not sure if they were elevated. I'm not quite sure what her normal caffeine level is. Skeletal muscle would be, there was simply caffeine present in the skeletal muscle.

GERAGOS: You showed yesterday there were barnacles on the bone on some of the pictures. Do you remember that?

PETERSON: Yes.

GERAGOS: Okay. Originally, in the report, I think that you wrote that there were no barnacles present.

PETERSON: I don't think I said on, look here at my autopsy report. I did not mention barnacles one way or another in the autopsy report.

GERAGOS: During your interview, did you tell one of the officers that you there were barnacles present?

PETERSON: I don't recall saying that.

GERAGOS: Did you see any barnacles on any place other than the bone?

PETERSON: Again, I really don't have any independent recollection.

GERAGOS: Is it a, you mentioned that before the break, as you sit here today, obviously you do quite a few autopsies. Is it fair to say that you really don't remember anything about this autopsy, other than what you are testifying basically from your report?

PETERSON: In terms of specific detail, no, I don't remember.

GERAGOS: Okay. Did you make any determination, or is there any reflection in your report as to whether or not the barnacles that you found were either freshwater or salt water?

PETERSON: I wouldn't know the different if they fell on me.

GERAGOS: When you say marine environment, you don't, well, you did mention, I think, at the preliminary hearing when we talked about it, you noticed there was some mineralization; is that correct?

PETERSON: That's correct.

GERAGOS: Okay. What do you mean by mineralization?

PETERSON: There was a material that I talked about in the pants, in the fibers of the pants, and it looked like rocks. They were smooth. But looked like stones basically intermeshed within the fibers.

GERAGOS: And did you also talk about that, that there was some process by which you felt that that could have occurred, this mineralization?

PETERSON: Sure. My thinking is, it may have had to do with the body being alternately exposed and submerged, and maybe as water and salts were deposited and then dried, that material could be laid down. Again, I would never claim to be a geologist. But that was my thinking at table side at the time when we talked about that.

GERAGOS: Okay. When you say that it was submerged, meaning at some point underwater, at some point out of the water, or at least not exposed to water, correct?

PETERSON: Or maybe on the surface of the water.

GERAGOS: And that was one explanation for why, at least you were trying to make an explanation for why there was mineralization on the clothes of the body?

PETERSON: I call it a hypothesis at the time.

GERAGOS: Is it fair to say that, a fair statement that virtually everything that you have testified to in terms of your opinion as to what happened is just a hypothesis in terms of whether or not the baby was in the uterus, or wasn't in the uterus, those kind of things, those kinds of opinions?

PETERSON: I would say that, based on the things we have already discussed, the relative conditions of the bodies, the changes I saw in the uterus, and so forth, my opinion is that Conner was in the uterus when Laci was placed in the water, and eventually was released fits those facts best. As you have also said there might be other scenarios that fit those facts too. Based on what I know now, I think those fit the facts best.

GERAGOS: The other possibility or the other alternatives are reasonable as well?

PETERSON: Well, I guess there is a scale there. Again, I'm happy with my opinion. I think it fits well. I suspect there are other suggestions that could fit too, though.

GERAGOS: Be just as reasonable?

PETERSON: I think, depends on who does the assessment of reasonability.

GERAGOS: Thank you. I have no further questions.

Redirect Examination by David Harris

HARRIS: Doctor, in terms of going back through that, some of these other potential ideas or hypotheticals, the one that I think that we do know from the physical state of the body of Laci Peterson that you examined is, Conner was not born vaginally; is that correct?

PETERSON: That's correct.

HARRIS: Didn't come out of an incision?

PETERSON: I found no incision.

HARRIS: So the only way that the body could have come out was through that torn, frayed portion at the top of the uterus?

PETERSON: Correct.

HARRIS: So, again, by the laws of anatomy that you have described for us before, means that she has to be decomposing, or exposed to the environment at the top of the uterus for the, for Conner to come out at that particular spot?

PETERSON: That's my opinion.

HARRIS: And when counsel was asking you about the possibility of Conner being in some protected environment, if we just look at individual pieces, that is possible, that he could have been protected in some other environment?

PETERSON: Correct.

HARRIS: But, again, for him to be in that other protected environment, he would have had to come out of her womb, out of that uterus through that hole that was abraded out of the top?

PETERSON: Correct.

HARRIS: And in terms of the noting whether it was fresh water or salt water, if we're talking about these minerals that you saw in the clothing, did these appear to be salt crystals?

PETERSON: Didn't look crystalline at all. This looked like stones.

HARRIS: Okay. You are talking about how she is coming up, going down, to makes those. And you are referring to that as a mineral. I take what you said, not being a geologist, was that consistent with that being a salt water environment?

PETERSON: I think it would be. There are other materials beyond Sodium Chloride in salt water that could form mineral deposits.

HARRIS: You were asked about being a difference between the lower portion of Laci Peterson's body and the top portion of her body, possibly being an injury to the top portion of the body. Was

there also a difference in terms of her protection, in terms of clothing that you found at the autopsy?

PETERSON: Well, again, there wasn't complete clothing from the waist down, but there was some clothing, namely, the trousers, panties. And I think could those have accounted for the difference. Sure, they cover. In other words, that clothing being in place would have provided relative protection, just as it did for the breasts. There was no skin left on the breasts, but the granular tissue, the fat tissue was still there, where it was missing on the rest of the chest, which I think is pretty good indicator the clothing provided some level of protection.

HARRIS: You were asked about going through this asphyxiation. Asphyxia is the technical term of depriving somebody of oxygen, basically?

PETERSON: Depriving the brain of oxygen through a number of different possible mechanisms.

HARRIS: And the lack of oxygen to the brain ultimately results in the person's death?

PETERSON: Correct.

HARRIS: You were asked about this, in that particular area something about as the person starts to decompose, that they purge. So I want to move into that particular area. Purging, is this something that happens in two minutes in decomposition as the stomach acids come up?

PETERSON: Again, it depends on the person. Generally it's a matter of days. Depends a lot on the individual, on storage, on environmental conditions. Some people never purge, because they come to us fresh, they go into the refrigerator. Other people purge sooner. But I think it would be a matter of days.

HARRIS: To go back through some of the other questions where counsel was asking you about the autopsy. You were saying that you don't have a specific recollection. You do recall these photographs that we have been looking at of the autopsy?

PETERSON: Yes.

HARRIS: And you wrote a report, though, that documents what your findings were?

PETERSON: I did.

HARRIS: In terms of what you are testifying to, that's based on your memory and your documentation of the actual events?

PETERSON: Or probably, more clearly, is based on my report and on looking at the photographs again.

HARRIS: So recalling specifics of whether there was barnacles in one spot or two spots, that's a little bit more difficult without looking at the photographs?

PETERSON: I can't do it at all.

HARRIS: You were asked about that particular dark item. Counsel was describing it as an object. And you had originally said it was kelp-like material. That particular item,

GERAGOS: Objection. That misstates the evidence.

JUDGE: I think he did say he thought it was kelp. Like he thought was kelp. He did testify it was kelp. When you cross examined he wasn't sure what it was. Overruled. Go ahead.

HARRIS: To go back through that, the kelp-like material on the side of Conner's face there, going up over to the ear, the detective that you were working with at that particular autopsy, Detective Soler, have you worked with him before?

PETERSON: Many occasions.

HARRIS: And in your experience, if that would have been something that was evidence, or could be viewed as evidence, would he have collected it?

GERAGOS: Objection. Calls for speculation.

JUDGE: I think so. Sustained.

HARRIS: If it had been something that you felt to be of significance, would you point out, or have him collect it for you as part of this autopsy process?

PETERSON: If I felt that was significant, I would have told him that, and he would have collected it.

HARRIS: And, in fact, at that particular autopsy was the tape, as you described it, around Conner, was that collected?

PETERSON: It was.

HARRIS: You were asked about Doctor Galloway's report. And we, let me just get to that real briefly. Doctor Galloway was the forensic anthropologist you were referring to yesterday?

PETERSON: Yes, she is.

HARRIS: Counsel asked you if you could make a determination of how long Laci had been in this marine environment, and you had said months.

PETERSON: Correct.

HARRIS: So you weren't willing to say one month, or what; is that a fair statement?

PETERSON: That's fair.

HARRIS: Was Doctor Galloway brought in to try and help give a time interval of how long Laci Peterson had been in the marine environment?

PETERSON: That was another contribution she made, yes.

HARRIS: And since he had you looking at her report, did you, did you include that, or was that included in her report, the determination that she made?

PETERSON: In her report she said three to six months in marine environment.

HARRIS: You were also asked about your determination of age of the body of Conner Peterson. And go to that real quick. Did you list, under autopsy diagnosis, a particular gestational age for Conner Peterson?

PETERSON: On the first page of my report, I'll read to you. I said estimated gestational age, nine months. And then in parentheses, I put 33 to 38 weeks based on anthropological measurements. That was Doctor Galloway.

HARRIS: As part of this collaborative process, did she also assist you in trying to estimate the age of Conner Peterson?

PETERSON: Yes.

HARRIS: And as an anthropologist, is that kind of what she does is look at bones and structures?

PETERSON: That's exactly what she does.

HARRIS: You were asked about her particular, referring to a table that she looked at. Did she actually make a comment about that particular table in her report?

PETERSON: She did.

HARRIS: And did she indicate in that particular, in her comment that those tables have to be adjusted for American babies?

PETERSON: That was her comment.

HARRIS: People have no other questions.

Recross Examination by Mark Geragos

GERAGOS: Just briefly. I'm a little confused. If I understand correctly, when you have a pregnant woman, and the pregnant woman dies, there are gases, and there is bloating that goes on, correct?

PETERSON: That's typically part of decomposition in anybody, not just a pregnant woman.

GERAGOS: And there is a phenomenon that's known as coffin birth, correct?

PETERSON: I have heard that phrase used. I have never used it myself.

GERAGOS: That's one way where the gases build, and there is pressure, that there will be a vaginal delivery; isn't that correct?

PETERSON: I think that's the hypothesis behind the use of that term. I have never seen that phenomenon.

GERAGOS: And then you said you didn't see an incision, correct?

PETERSON: That's correct.

GERAGOS: Okay. The, I'm accepting, obviously, your, deferring to your experience that you didn't see a vaginal birth, evidence of a vaginal birth?

PETERSON: That's correct. The birth canal was closed.

GERAGOS: Okay. And what's missing is from the bellybutton up on the body of Laci, correct?

PETERSON: Well, there are other things missing too. But certainly that was also missing.

GERAGOS: This area here?

PETERSON: Correct.

GERAGOS: If there was an incision prior to her going into the water, and if the baby was removed prior to going into the water, and where the incision was ended up decomposing, you see that, isn't that correct?

PETERSON: As I said earlier, there could have been a gunshot. There could have been any number of different kind of trauma. If they only affected soft tissue, and now that soft tissue is missing, we can pretty much hypothesize anything we want. I guess I couldn't say yes or no.

GERAGOS: Right. Without, I'm not trying to be morbid here. But without, there is no evidence from which we can determine what happened and how that baby got out with just hypothesizing, correct?

PETERSON: There is some evidence. Again, the birth canal was closed.

GERAGOS: Well, I'm accepting, I'm accepting the fact, deferring to your observation, that there wasn't a vaginal delivery.

PETERSON: I'm saying there wasn't a vaginal delivery either before or after death.

GERAGOS: Right.

PETERSON: Okay.

GERAGOS: I'm with you there.

PETERSON: Okay.

GERAGOS: I'm saying at some point the baby came out from this area, correct?

PETERSON: From the top of the uterus, from the fundus.

GERAGOS: The top of the uterus and out from here, had to come out, correct?

PETERSON: Correct.

GERAGOS: Okay. One way or another, whether it was before she was in the water or whether it was after the baby came out.

PETERSON: The baby did come out.

GERAGOS: Okay. And there is no incision. You see nowhere, you don't have any evidence whatsoever as to where the baby came out from, do we?

PETERSON: Oh, sure. Because we have an opening in the top of the uterus. So we know that.

GERAGOS: Internally, correct?

PETERSON: Well, the uterus is an internal organ, and we know that Conner came out the top of the uterus.

GERAGOS: And Conner exited from somewhere on Laci's body, correct?

PETERSON: That's correct.

GERAGOS: And if Conner had exited before he had gone into the water, and Laci was placed in the water, the decomposition would have been such that that incision would no longer be observable by you.

PETERSON: Well, if we assume the incision was up high, then that would be true.

GERAGOS: Thank you. I have no other questions.

2nd redirect Examination by David Harris

HARRIS: Doctor, just to be clear about this, for there to be an incision where the baby could come out, we are not just talking about the skin, are we? You would have to cut through the skin, through the muscle, and all the way down to the uterus and make an incision there for ultimately the baby to come out; wouldn't that be correct?

PETERSON: That's a normal process of a Cesarean section.

HARRIS: So whether the soft tissue is gone or not, we have the uterus.

PETERSON: We do.

HARRIS: People have no other questions.

2nd Recross Examination by Mark Geragos

GERAGOS: And if you make that incision, and it's up high, it's going to be roughly in the area where, that 9th rib is frayed, is it not?

PETERSON: Well, again is that where a Cesarean section would, happen? No, never. But, hypothetically, could you make an, incision in somebody at that level? Sure you could. Of, course, it wasn't a cut mark in the rib. It was frayed.

GERAGOS: Was frayed. And the uterus was long enough that it, looked like the uterus was up around that 9th rib, wasn't it?

PETERSON: Correct.

GERAGOS: And that's where the frayed end was roughly at the, same spot where the 9th rib was, wasn't it, if you extended, it?

PETERSON: Well, yeah. Where the rib became cartilage, that, would be the frayed end.

GERAGOS: Right. So we know that the, we have got in, uterus that's extended, and it's frayed, roughly the 9th rib., We have got a frayed end on the 9th rib, correct?

PETERSON: The fundus of the uterus was frayed and friable., The end of the rib was frayed. That's what we had.

GERAGOS: Thank you. No further questions.

3rd Redirect Examination by David Harris

HARRIS: Once again, doctor,

JUDGE: Well, I'll tell you what. This is the last go-around. You can ask him a question. Mr. Geragos can cross, and we're done. Next question.

HARRIS: Anatomical positioning that we're talking about, we're not, with the uterus in the body cavity, we're talking at the top, so we have to reach inside to get to that place where it's torn, basically. And there is no incision on the front of the uterus; is that correct?

PETERSON: I did not see an incision the uterus on the remaining soft tissue at all.

HARRIS: People have no other questions.

3rd Recross Examination by Mark Geragos

GERAGOS: There was no remaining soft tissue on front, correct?

JUDGE: Didn't leave you out, Mr. Geragos.

GERAGOS: I said there was no remaining soft tissue at that area, correct?

PETERSON: From the belly button down there was. That's what I'm saying. There was no incision there.

GERAGOS: I'm talking from belly button up there was no soft tissue left, correct?

PETERSON: Correct.

GERAGOS: Thank you. No further questions.