Witness: Charles Michael March

Date: 2004-10-21

Proceedings held October 21, 2004

Called by: Defense

Phase: Guilt

Examinations: Voir dire – Mark Geragos; Voir dire – David Harris; Direct – Mark Geragos; Cross – David Harris; Redirect – Mark Geragos; Recross – David Harris; 2nd Redirect – Mark Geragos

Day 1 of 1 for this witness

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

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Voir Dire Examination by Mark Geragos

GERAGOS: Dr. March, good morning. What do you do for a living?

MARCH: I'm a physician.

GERAGOS: And what kind of physician?

MARCH: My specialty is obstetrics and gynecology. My subspecialty is reproductive endocrinology and infertility.

GERAGOS: And by whom are you employed?

MARCH: California Fertility Partners.

GERAGOS: How long have you been a doctor?

MARCH: Since 1966.

GERAGOS: Okay. And as a doctor for the last whatever number of years that is, the -- have you specialized in any particular area?

MARCH: After my four years of training in obstetrics and gynecology, I took a fellowship in reproductive endocrinology and infertility, which began in 1973, and therefore since that time my practice has been limited to gynecology, reproductive endocrinology, and infertility, and telescopic surgery.

GERAGOS: Okay. Have you ever published anything in these areas?

MARCH: I have published probably about a hundred and ten papers in scientific journals, more than 80 textbook chapters, some videotapes, audiotapes, those kinds of things.

GERAGOS: Okay. Have you ever won any awards or belong to any professional societies?

MARCH: I guess the first award was for valor in Vietnam during my Vietnam service. I've won teaching awards from the University of Southern California when I was on the faculty for 30 years. Full time faculty. And since 1990 to present I have been named as -- in the textbook The Best Doctors In America. At the time of the first edition of that book in 1990, I was the only person in the country named in both reproductive endocrinology and infertility and reproductive surgery.

GERAGOS: What is reproductive endo whatever, I can't pronounce it?

MARCH: Reproductive endocrinology and infertility is a subspecialty of obstetrics and gynecology devoted to -- I guess the fertility part is pretty straightforward to understand. Helping couples who have problems -- both diagnosis and treatment of couples who have problems with fertility. And then the reproductive endocrinology part is the evaluation of hormonal problems, to a small extent male but basically female, and then to correct -- both the diagnosis of those and then to find the correction of these problems. Hormones of pregnancy, hormones of pre-pregnancy, with women with menstrual abnormalities, and, of course, the management of menopausal problems, on the other side of the reproductive years.

GERAGOS: Have you ever testified as an expert in this area?

MARCH: Yes, sir. In both arbitrations and in trials associated with claims of medical negligence, yes, sir.

GERAGOS: Okay. Have you ever qualified as an expert?

MARCH: Yes, sir.

GERAGOS: All right. I'd offer him.

JUDGE: In -- as OB-GYN? Or reproductive endocrinology?

GERAGOS: Both.

JUDGE: In both. Okay. Any questions as to his --

HARRIS I -- just one question.

Voir Dire Examination by David Harris

HARRIS Doctor, you indicated that you have testified -- you've qualified as an expert and you said -- and counsel asked you the question in this area. What areas are you talking about?

MARCH: Oh, I'm sorry. In gynecology, infertility and reproductive matters.

HARRIS The People submit.

JUDGE: All right. The court will -- based on Dr. March's testimony, the court will accept Dr. March as an expert in the fields of OB-GYN, reproductive endocrinology and infertility. Go ahead.

Direct Examination by Mark Geragos

GERAGOS: Dr. March, were you consulted by my office in connection with this case?

MARCH: Yes, sir.

GERAGOS: Okay. And specifically have you reviewed items in connection with this case?

MARCH: Yes, sir, I have.

GERAGOS: Okay. Is it fair to say that you've reviewed the testimony of a Rene Tomlinson?

MARCH: Yes, sir.

GERAGOS: Okay. And specifically Rene Tomlinson is a friend of Laci Peterson's, as you understand it, who says that she had given a baby -- or she was given a baby shower at Laci's home on June 8th, and that Laci had told her the following day that she was pregnant, correct?

MARCH: She had a positive pregnancy test the following day, yes, sir.

GERAGOS: Okay. And specifically have you also reviewed the testimony of Tina Endraki who was a -- one of the, I guess, attending physicians or one of the physicians --

MARCH: Yes, sir.

GERAGOS: -- of Laci Peterson?

MARCH: Yes, sir. Dr. Endraki and Dr. Yip and Dr. Tow-Der are in that -- I think the name is HERA Medical Group.

GERAGOS: Okay. And have you had a chance to look over the medical records for Laci Peterson in connection with that HERA Medical Group?

MARCH: Yes, sir, I have.

GERAGOS: Okay. And specifically have you looked at the ultrasounds of that?

MARCH: Yes, sir.

GERAGOS: And have you based upon -- did you look at any -- I assume you reviewed the testimony of Dr. DeVore?

MARCH: Yes, sir.

GERAGOS: Okay. And I assume that you have done -- or you've reviewed -- there's been a number of studies that would have been talked about and the jury's heard about, one by somebody named Jeanty. You reviewed that?

MARCH: Yes, sir.

GERAGOS: Okay. You reviewed the testimony of an Alison Galloway?

MARCH: Yes, sir.

GERAGOS: And did you review the testimony of Bruce Peterson, who was the Coroner? I think it was Bruce, or Brian Peterson?

MARCH: Brian? I think Brian; but Dr. Peterson, yes, sir.

GERAGOS: Okay. Based on all of that, let me specifically ask you: Is there something that you would -- it appears that there's something that's called ranges of age; is that correct?

MARCH: Yes, sir.

GERAGOS: Am I correct about that?

MARCH: Yes, sir.

GERAGOS: And can you explain what that is?

MARCH: In the evaluation of various measurements by ultrasound while a woman is pregnant, and measurements of bones which were secured after Conner was discovered -- and the bones only were measured by Dr. Galloway -- these independent and different measurements were applied against certain reference standards.

GERAGOS: Now, let me ask you something. When you say they were measured and then put against reference standards, what does that mean?

MARCH: Well, for instance, Dr. Galloway measured eight bones of the head, of Conner's head, an arm bone, and two leg bones. And she came up with specific numbers for each one of these.

GERAGOS: Could you --

MARCH: Could I draw something?

GERAGOS: Yeah, that's fine. I was going to ask you if you want to step forward.

MARCH: Yes, sir.

JUDGE: Is there –

MARCH: So –

JUDGE: Doctor, excuse me.

MARCH: Yes, sir.

JUDGE: Those blunt pens, is that adequate for you to draw? Or do you want to use something that's a little narrower?

MARCH: This is probably fine. Sure. Yes, sir. Thank you. So --

GERAGOS: Dr. Galloway does some measurements.

MARCH: Right. Dr. Galloway does some measurements. She measures the upper arm, the humerus, she measures the bone of the upper leg, the femur, and one of the bones of the lower leg, the tibia. And she applies them, comes up, gets a number, and she then looks up in three different textbooks three folks who have done this and are accepted as experts in these measurements of bone, applying them against a certain age of the fetus.

GERAGOS: And what does she -- at that point she comes up with -- and my original question was a range; is that correct?

MARCH: She came up with a range to equal what some folks from Hungary had begun Fazekas and Koza. Another expert she -- expert reference she used was Sherwood, and she came up with a reference of the head bones to be 36 to 40 weeks. These other bones, depending whether it was Fazekas and Koza or Sherwood, were anywheres between an average of 35 to between 34 and 38. She then --

JUDGE: Okay, Doctor. Excuse me, the jurors apparently can't see the writing. Maybe -- let's get another pen.

GERAGOS: You've got one -- the green is darker, and the black, obviously.

MARCH: Can we just lose this one then?

GERAGOS: Yeah.

JUDGE: If you remember what you've done, do it all over again and reproduce it.

MARCH: Yes, sir.

JUDGE: And start all over again.

MARCH: So the humerus, femur, tibia.

JUDGE: Can you all see that now? Okay.

MARCH: Using bones which have not been repeated in measurements, different head bones, by again this Fazekas and Koza expert and the Sherwood reference, she comes to 34 to 30 -- to 40 weeks.

GERAGOS: Okay.

MARCH: By these other bones with one expert, that being Sherwood, she comes to an average of 35 weeks. With Fazekas and Koza she is more broad, or their reference point is different and -- or 33 to 38 weeks. And then because individual growth patterns vary so much --

GERAGOS: Now, wait. Let's ask about that. The -- when Dr. DeVore testified, he used this Jeanty and talked about a standard measurement on each day?

MARCH: Yes.

GERAGOS: That's something that you find with babies? A standard growth rate each day?

MARCH: You -- in the absence of abnormalities in the pregnancy, growth patterns, once you have a bone in the late second trimester, if the -- if you presume that the pregnancy is completely normal, there's no high blood pressure, there's no diabetes, there's no bunch of things that would make the baby artificially smaller or larger, if you take that, then -- and your starting point is a specific time late in the second trimester, 24, 25 weeks, at that time the femur

is much more identifiable by ultrasound. The edges have to be really very, very crisp. So you're going to be kind of very clean at 24, 25, 26 weeks. And you plug it into Jeanty's formula. Yes. The answer to that is yes, you can get some numbers that are pretty good.

GERAGOS: Let me ask you this. You've got the ranges that are here. Why are there ranges as opposed to a specific date?

MARCH: For the same reason, Mr. Geragos, as there are ranges in all of Jeanty's publications.

GERAGOS: So when you have a situation where somebody is trying to pinpoint a specific date, is that something that you find in the literature where you can pinpoint a specific date?

MARCH: It is 100 percent impossible to identify by ultrasound, one, a specific date by measurements of a bone outside the body. To find a specific date is impossible. It is -- it is not -- it is less than non-science. It's a 100 percent impossibility to narrow something down. Here we have ranges of every expert. Jeanty has ranges.

GERAGOS: Jeanty is the person that Dr. DeVore used the formula for to make the estimate. Are you telling me that Jeanty has a range in the things that -- in his publications?

MARCH: Jeanty -- yes. The answer to that question is yes, Jeanty has ranges. If you want to take formulae, Chuck Holer (phonetic) and a fellow by the name of Kettle (phonetic) have a formula. Hadlock has a formula. There are three or four or more different formulae to identify estimates of growth patterns as pregnancies progress. They vary a little bit. Dr. DeVore selected Jeanty. Jeanty fits specific days of death of -- of the baby, which are the 21st, the 23rd or the 24th of December, based on certain estimates of fetal age. Those numbers don't fit any of the other scientific information.

GERAGOS: Well, let me ask you something. His -- if I understood Dr. DeVore's testimony, he took the measurement from the first ultrasound; is that correct?

MARCH: Yes, sir.

GERAGOS: I'm showing you a page that I've pulled out of People's 63, which previously I had written on there "first ultrasound" so we knew what it was.

MARCH: Yes, sir.

GERAGOS: All right. And have you reviewed this?

MARCH: Yes, sir.

GERAGOS: Okay. Now, specifically there are measurements and I don't know if that's too hard for you to see. Do you have the -- a copy of the ultrasound in front of you?

MARCH: No, but I can --

JUDGE: You can walk up there if you want to.

MARCH: Thank you, sir. I can see it pretty well, yes, sir.

GERAGOS: Can you tell me something. Using this first ultrasound as a starting point, is there a range built into this?

MARCH: If --

GERAGOS: If you want to use it, there's a pointer behind you.

MARCH: Yeah. But maybe if you -- I can, but may I walk?

JUDGE: Take the pointer.

MARCH: If you could please take the ultrasound -- the next image, the image that's off the -- yes, please. So here is a measurement of the baby and -- which was done on -- on July -- in July, on -- on July 16th. And crown rump length, 32 millimeters. So a caliper was put here on the crown,

here on the rump, 32 millimeters. And it is ten weeks one day, okay? And then we drop below ten weeks one day, plus or minus five days.

GERAGOS: What does that mean?

MARCH: That if you have a baby who you measure crown rump length of 32 millimeters, you're going to say that that baby is -- by ultrasound, that's an ultrasound done by the nurse practitioner in their office -- of ten weeks one day. But I can't really lock it in to 71 days because when I have measured babies that were 32 millimeters, some of them were ten weeks and six days, plus five days, and some of them were younger by five days, nine three.

GERAGOS: So would you want to see the second ultrasound at that point? And you've looked at the second ultrasound?

MARCH: Yes.

GERAGOS: And when you look at the second ultrasound, you want this measurement or this one here? Which is it?

MARCH: No, we can go just to the summary sheet.

GERAGOS: Okay. And this is the second ultrasound that I'm showing you. This is for September 24th?

MARCH: September 24th. Yes, sir.

GERAGOS: There -- looks like there's a number of references. Hadlock, Robinson, all the way down, and then some other measurements --

MARCH: Yes.

GERAGOS: -- here.

MARCH: Okay. First there's an error in entry on this. Which we can get to in a minute. Using the femur length with Frank Hadlock as the expert, he's an ultra-sonographer, we come up with 19 weeks four days. Using the circumference of the baby's head, Hadlock, as the expert, 19 weeks no days. Using abdominal circumference we have a problem. It says a hundred and 37 millimeters, but if we look on the individual measurement of the baby from the ultrasound we're a hundred and 34. So somebody typed in 137 in error and got -- I can't -- I can't read it. Nineteen something. Nineteen zero. So it would actually be a little bit less.

GERAGOS: So somewhere in the neighborhood of the 18 weeks something, based on that measurement of the abdominal area?

MARCH: Correct. And then there is -- there was someplace another measurement of another bone that came to 18 weeks three days.

GERAGOS: Okay.

MARCH: Based on these measurements, and if we go to the last menstrual period.

GERAGOS: Okay. If you're done with that, I'll let you return to your seat.

MARCH: Yes, sir. Thank you.

GERAGOS: The last menstrual period was reported as May the 6th?

MARCH: Yes, sir.

GERAGOS: Okay. And the pregnancy test was reported as June the 9th?

MARCH: Yes, sir.

GERAGOS: A positive pregnancy test?

MARCH: That's correct.

GERAGOS: And then the -- I assume you accept the measurements that Dr. DeVore and Alison Galloway took of the femur length?

MARCH: Oh, yes.

GERAGOS: Okay. And do you have -- are you able to -- based upon what you've seen, does that change the range of dates of when this baby -- unfortunately, the date of death?

MARCH: Well, it shifts everything. There --

GERAGOS: Why is everything shifted?

MARCH: Okay. Well, in a moment. There are two ranges, and, I'm sorry, but I didn't finish this. And I'll try not to be too wordy; but because you can't lock in to anything by a day or two, I mean it just doesn't make any sense, because you can't do that, when Dr. Galloway had all of these measurements, she expanded her ranges two weeks this way and two weeks that way. To cover. Because she's obviously aware that you can't nail down every single baby identically. It's also very -- so that's that. Now, if we go to -- what do I do with this?

JUDGE: Just tear it off. We'll mark that defendant's next in order. 8 -- Diagram number 1. And this one will be 8 O. (Defendant's Exhibits D 8 10 and D 8 O marked for identification)

MARCH: So now we come to Dr. -- the days that Dr. DeVore used.

GERAGOS: The dates --

MARCH: I'm sorry, we can't. We can't. We can't just yet.

GERAGOS: Okay. What's the next thing you need to know?

MARCH: The next thing is on the bottom of the second ultrasound, Dr. Yip.

GERAGOS: Yip, yes.

MARCH: Put down CGA. So he has corrected the gestational age. September 24th by last menstrual period was 20 weeks and two days.

GERAGOS: That was?

MARCH: By last menstrual period.

GERAGOS: So that I've got it, when you do it by last menstrual period, I had asked -- they have some kind of a little circular device that they turn and you can just calculate how many days?

MARCH: A pregnancy wheel, yes, sir.

GERAGOS: A pregnancy wheel. And so based on the pregnancy wheel, where you say May 6th is the last menstrual date, you just turn it and put in May 6th, and you get -- when you turn to 9/24, pops up with 20 weeks two days?

MARCH: Yes, sir.

GERAGOS: Okay. Is there -- and I assume, because I went back and forth with this with Dr. DeVore, that that assumes that the date of conception was two weeks after the last menstrual period?

MARCH: Yes. That's what Dr. DeVore said. And he said that -- of course, you don't really know unless you happen to be present during the conception. And then he said that you -- unless it was done by in vitro fertilization, when absolutely you know when the sperm and egg got together, and if you --

GERAGOS: Okay?

MARCH: -- if you look at crown rump lengths done at the most accurate time, the most reproducible time, and that is between seven and nine weeks after the last menstrual period, in

pregnancies which occur by in vitro fertilization, the range, the IVF range of crown rump lengths is three to 3.5 days. So even in the lab you can't nail it to one day.

GERAGOS: Okay. So that means even -- I suppose there's two ways to know. One is if you're doing it the old fashioned way and you know you're there on a certain day and you know that you impregnated the woman. The other way is if you're in a lab and you do the in vitro process; is that correct?

MARCH: Well, you're trying in the lab -- what you don't know, if you have intercourse today, you don't know that ovulation didn't occur today or yesterday, or because sperm will easily live three or four days and retain their ability to fertilize her, you don't know that conception from a single act of intercourse didn't occur four days later than that single act of intercourse. You don't know.

GERAGOS: Okay. So did Dr. Yip do something on the date of the second ultrasound to change this 20 week two day age?

MARCH: Yes, sir. Because every one of his measurements done that day, the biparietal diameter, 19,4, plus or minus ten days; head circumference, 19 even, plus or minus eleven days; abdominal circumference of 134 would be -- that was not the one entered, but the 134 would be 18 weeks three days. The femur length, plus or minus 14 days. Femur length of 32, 19,4, plus or minus six. Because every measurement jumped away from twenty, two -- 20 weeks two days, to a range of 18,3 to 19,4.

GERAGOS: That means that, I assume, that the baby -- the first ultrasound had the baby at ten week one day?

MARCH: Plus or minus five days.

GERAGOS: Plus or minus five days. And that when we got the second ultrasound, because there were a number of measurements that were taken, it then became clear that the baby was on the minus side --

MARCH: Was younger than should -- than would have been estimated by last menstrual period. And therefore Dr. Yip said I'm not going to expect to deliver this baby as a due date December -- February 10th, I'm going to push it back to February 16th. And the importance of that is if someone goes post-dates, overdue, by a week, so what? By two weeks you're going to get nervous that there may be a problem with the baby. Therefore at about two weeks you would begin an induction. Well, there can be complications with inducing labor, so Dr. Yip said No, no, no, I don't want to think that she may be over two weeks post-dates on February --

GERAGOS: 10th -- 24th?

MARCH: 24th, instead it's going to be March 2nd -- unless there was a leap year day or something. Leap year or something. So he has pushed it six days, so he's not going to get caught doing an unnecessary and potentially dangerous induction. And all of the information was so compelling, coming away from twenty, two, that he made the move, made the shift.

GERAGOS: By six days?

MARCH: Yes, sir.

GERAGOS: Okay. Now, based upon that, you remember -- or I believe you remember that the -- Dr. DeVore had three measurements?

JUDGE: Want to give that to the –

GERAGOS: Next in order?

JUDGE: Yeah, give it to -- that will be 8 -- Defendant's 8 O. Next one is defendant's 8 P.
(Defendant's Exhibit D 8 P marked for identification)

GERAGOS: Okay. He had three measurements, the 21st of the December, the 22nd of the December, and the 24th?

MARCH: Yes, sir.

GERAGOS: And then he averaged them to come up with the 23rd?

MARCH: Yes, sir.

GERAGOS: If you accepted everything that Dr. DeVore said about the measurements that he measured, and -- what would that do to his calculations?

MARCH: Well, he -- he says I averaged to --

GERAGOS: 12/23?

MARCH: -- I averaged to 33, one, and 33 weeks one day equals 12/23.

GERAGOS: Okay. If, in fact, the date -- what are you saying that you believe the date of conception is?

MARCH: The date of conception, if we take that pregnancy test on May 9th --

GERAGOS: June 9th?

MARCH: -- June 9th, and we know that home pregnancy tests are positive on the day that would have been expected -- the menstrual period would have been -- I'm sorry, the last day of an idealized 28 day cycle, then the conception day is 14 days before the 9th, which makes it May 26th is conception, this is positive pregnancy test. If we –

GERAGOS: Okay. And if you accept -- even if you accept what he's saying and it's 33, one, what does that do to his 12/23 date?

MARCH: 33 weeks and one day becomes, by pregnancy test, by date of conception, becomes 12/29. By Dr. Yip's recalculation of the corrected age of the baby, which is a plus of six days -- is a minus of six days, therefore a six day shift -- shift, so we have pregnancy test which says 12/29 was 33, 1, and we have Dr. Yip saying that 33, 1 would have been exactly the same, 12/29. So all of the information gathered at a contemporaneous time --

GERAGOS: Meaning the ultrasounds?

MARCH: The ultrasounds, the pregnancy test, and as Mrs. Peterson was being followed through her pregnancy, all of that information says that on December 23rd she was absolutely, unequivocally not 33 weeks and one day pregnant but six days younger than that.

GERAGOS: So the baby would have been 32 weeks and --

MARCH: 32,2.

GERAGOS: -- 32, 2. So for the baby to have been measured at 33,1, in fact, the baby's date of death would have been 12/29?

MARCH: Yes, sir. Every -- every person, doctor -- pregnancy test, Dr. Yip, Dr. DeVore, everyone comes to exactly the same day, 12/29, being the day that the baby died. Dr. DeVore in his testimony said it could have been December 28th. If you take all the other ranges you can go into January very easily. But the earliest day you can get to is December 29th.

JUDGE: Okay. Let's take -- take the afternoon (sic) recess. Doctor, we're going to try to finish you today.

MARCH: Thank you, sir.

JUDGE: All right, ladies and gentlemen. We'll take the afternoon recess -- or noon recess. Remember the admonition I've heretofore given you. We'll reconvene at 1:30. We'll try to complete Dr. March's testimony today. (Noon recess)

JUDGE: All right. This is 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. And, ladies and gentlemen, of the jury we're going to go until approximately 2:30. Going to have to take short recess to accommodate an issue. And then we'll bring you back. We'll have to take a recess approximately 2:30 just for maybe fifteen minutes, then we'll go until we finish with Doctor March. Go ahead, Mr. Geragos.

GERAGOS: Thank you your Honor.

GERAGOS: Doctor March, you had, just as we left, I guess said that the earliest that the baby would have died was 12-29; is that correct?

MARCH: Yes, sir.

GERAGOS: Going to ask you if I could, specifically, does horizontal work if we are to draw timeline of some kind?

MARCH: Yes, sir.

GERAGOS: Why don't I just have you draw it on here, then I'll put it up? Can you tell me, is there a range involved in this 12-29 date that you have given?

MARCH: Yes, sir.

GERAGOS: Okay.

CLERK: 8P.

JUDGE: This is 8P. Marked as Exhibit D8P for identification. Diagram Marked as Exhibit D8Q for identification.

GERAGOS: When you say there is a range, what do you mean by that?

MARCH: Well, if we take –

GERAGOS: Do you want me to hold it up?

MARCH: If you can maybe hold that, the right side.

GERAGOS: Try not to sit in your lap.

MARCH: My penmanship is impossible right-handed. Don't try it left-handed. All of these measurements that were taken by Doctor Galloway have a range of plus or minus two weeks. And the reason for that range is that they are individual growth patterns. For instance, the femur of a girl in utero grows more rapidly than the femur of a boy. Data from Jeanty, which was not taken into account in Jeanty's earlier studies. So if you take 12-29, based on pregnant -- positive pregnancy test. Based on further ultrasound, based on modification of data from second ultrasound, if you take all of that information, and you take 12-29 then plug in Doctor Galloway's information, the information from all of the measurements by Doctor Yip, extrapolated out to December 29th, you take these days, and you move into January. So you start with December as your early time, and when you take your ranges you spread it out into January.

GERAGOS: Why is that? And I know you said that you have the -- that you took -- let me just take one step at a time. You have got -- first of all, are you disputing Doctor DeVore's measurements?

MARCH: No.

GERAGOS: When I say measurements, I'm saying he took -- his testimony was that he took -- he tried to recreate an ultrasound by putting the bone inside of a -- for lack of a better term -- aquarium, I guess, then measured it on an object, on top of some kind of a stand. I'd like to mark this as next in order.

JUDGE: 8Q.

GERAGOS: Then he gets three measurements, correct?

MARCH: Yes, sir.

GERAGOS: Okay. Now, are you disputing those three measurements as being accurate?

MARCH: No. Doctor DeVore's measurements I'm quite convinced were impeccable.

GERAGOS: What is the -- what is it, then, that shifts the analysis if it's not disputing his measurements?

MARCH: Okay. Doctor DeVore's measurements are accurate. Doctor DeVore comes up with -- DeVore comes up with an average of 33 weeks one day. So this is Doctor Devore, and he says 33 weeks one day. And he says I care -- he -- Doctor DeVore says that he cares about only one thing, the femur. And he says, I care about the femur because it's the only bone which I, Doctor Devore and Doctor Yip, measured -- measured that's accurate. And, therefore, if I take the last menstrual period, and I get a date of Doctor Yip's ultrasound on 9-24, my last menstrual period 9-24 is 22 -- 20 weeks, two days, I plug this into Jeanty's formula, I get a leap. What Doctor Devore is not doing are two things -- are two things. One, we have all of the measurements by Doctor Yip, which give dates of less than 12-22.

GERAGOS: That's the -- just stop. You that's the second ultrasound on September 24th?

MARCH: Yes, sir.

GERAGOS: Okay. When you are looking at that first ultrasound, it says ten weeks one day, plus or minus five days?

MARCH: Yes, sir.

GERAGOS: Okay. And that's when Doctor Devore locks it in, correct?

MARCH: Correct, yes. Locks it in, and says that's it, then kind of goes straightforward.

GERAGOS: What you are doing is taking the plus or minus five days, you are moving forward to the second ultrasound of 9-24?

MARCH: Yes, sir. You say, wait a second, I can refine scientifically what the actual date is, because I have now got more measurements, five measurements.

GERAGOS: Five measurements. All five of those measurements are less than 20 weeks two days?

MARCH: Yes, sir.

GERAGOS: And Doctor Yip comes to that same conclusion, correct?

MARCH: Yes, sir.

GERAGOS: That all five of those measurements are less than 20 weeks two days, correct?

MARCH: Yes, sir.

GERAGOS: And Doctor Yip shifts the date from February 10th to February 16th?

MARCH: Yes, sir.

GERAGOS: When he shifts it, he is shifting it by six days?

MARCH: Yes, sir.

GERAGOS: That shift of six days reflects five measurements which are less than 20 weeks two days?

MARCH: Yes, sir.

GERAGOS: Which corresponds to the outer limit of the first ultrasound, plus or minus five days, correct?

MARCH: Yes.

GERAGOS: By doing that, if Doctor DeVore's measurements said the 21st, 22nd, and 24th, if you just shift the six days, Doctor DeVore's measurements would then give you the 27th, 28th, and the 30th, correct?

MARCH: Yes, sir.

GERAGOS: And under his averaging, if you average the 27th, the 28th, and the 30th, you would average to December 29th?

MARCH: Yes, sir.

GERAGOS: Which is what day, the date -- same date you are talking about?

MARCH: Yes, sir.

GERAGOS: Okay. You also have, I believe, if I understand correctly, one other factor that you put there, which was the testimony of Rene Tomlinson as to when -- A. When pregnancy -- when Laci for the first time Mrs. Peterson, for the first time had a positive pregnancy test. Prior to the 9th of June her pregnancy tests had been negative.

GERAGOS: And does that -- when you look at all of those factors, does that give you basically the earliest date that this baby could have died?

MARCH: To be December 29th. With all of those modifications, shifting it even farther, December 30th, December 31st, the month of January.

GERAGOS: Is there any way that you can predict, or you can pinpoint an exact day of death?

MARCH: No, sir, cannot do that.

GERAGOS: What you are saying is that the earliest date of death was?

MARCH: December 29th.

GERAGOS: And it could have been?

MARCH: Any time into mid January. I don't know the -- mid January, early January. I can't do that. But it goes -- it starts at December 29th and goes that way into the next -- goes later in the year. First day -- I'm sorry -- earliest date of death.

GERAGOS: Thank you. I have no further questions.

Cross Examination by David Harris

HARRIS Doctor March, let's start with some information here, and just make sure that we're all on the same page.

MARCH: Yes, sir.

HARRIS Are you a forensic anthropologist?

MARCH: No, sir.

HARRIS Are you a forensic pathologist?

MARCH: No, sir.

HARRIS You are a person who is board certified in obstetrics and gynecology?

MARCH: Yes, sir.

HARRIS And you have a subset. You are describing that as infertility?

MARCH: Reproductive Endocrinology and infertility, yes, sir.

HARRIS You used to be with USC?

MARCH: 30 years, yes, sir.

HARRIS Thirty years. And at USC when, you were at USC, that's a full-time position?

MARCH: Well full-time position. But I also had a full-time practice.

HARRIS Okay. Let's go through that. USC has a hospital, right?

MARCH: Since 1991, yes, sir.

HARRIS And it was a county position, basically. So it's like a county hospital?

MARCH: Okay. There is the Los Angeles County, University of Southern California Hospital. That is -- that's county. Since 1991 there is a private USC Hospital.

HARRIS And do you recall when it was that you used to work with Doctor DeVore at USC?

MARCH: Greg and I -- Greg was probably there in the mid-80s, maybe.

HARRIS And do you remember when you were working with Doctor DeVore back in those days, that your particular department had to refer people to other departments to use ultrasound?

MARCH: No, sir.

HARRIS It's your testimony that you were working with Doctor DeVore at USC, that you performed your own ultrasounds?

MARCH: In February of 1981 we began to do our own ultrasounds, absolutely. In 82, excuse me. Got to -- I did perform -- I did personally perform an ultrasound?

HARRIS Yes. At the county hospital.

MARCH: Probably once, twice, three times in my life. I did five, six, eight, nine times per day, seven days a week perform ultrasounds on my private patients in my private office beginning in February of 1981, yes.

HARRIS Let's go through that. This was a full-time position at USC right?

MARCH: Yes, sir.

HARRIS So that's a 40 hour week at least?

MARCH: Yes, sir.

HARRIS And so after the 40 hours a week, you would go and do five patients a day, doing five ultrasound a day?

MARCH: No.

HARRIS No?

MARCH: Started my private practice at 7:00 a.m.

HARRIS You would go in the morning, every single day, do five ultrasounds on patients?

MARCH: Five, six, eight, I don't know. Except for Wednesday when that was a full day in private practice. And that was permitted under the general guidelines of being a full-time faculty member.

HARRIS So these ultrasounds that you are performing on these patients in private practice was infertility, correct?

MARCH: Correct.

HARRIS Infertility means -- maybe it's just a lay assumption on my part. Would mean they are not pregnant?

MARCH: To start with. And hopefully we are successful, and very commonly we are. And after success, we would follow patients sometimes at two-week intervals until ten -- by ultrasound until ten or twelve weeks of pregnancy, starting at five weeks. Making sure it's in the uterus at five weeks, at six weeks making sure it's growing. By six and half, seven weeks make sure there is fetal activity. And following it, and referral to an obstetrician at ten weeks, twelve weeks pregnancy.

HARRIS All right. So, doctor, if we go through this. Are you telling this jury, since you started your practice, that you have five to six patients every day that get pregnant?

MARCH: No, I never said that.

HARRIS All right. Well, when you are talking about doing these ultrasounds, let's just go through this process. How many of your patients would you say on a monthly basis get pregnant, ones that come in for fertility problems?

MARCH: Plus or minus, over time, I probably see ten new patients a week. So in a month that's about forty. Pregnancy rate's plus or minus fifty percent. So half of the patients become pregnant. So in that month, I would do a low of a dozen, a high of forty or so scans on pregnant patients.

HARRIS Okay. So high was, what, forty?

MARCH: Yeah.

HARRIS A month?

MARCH: Yes, sir.

HARRIS Forty a month. Now, you are talking about once your patients -- getting back for a second. So at USC you never did ultrasounds, right?

MARCH: At the county hospital, only if one of the residents would have some difficulty.

HARRIS So how many total ultrasounds would you say that you ever did at USC?

MARCH: At the county hospital?

HARRIS Yes.

MARCH: I would say, in my thirty years at the county hospital, I know I didn't do twenty in thirty years.

HARRIS So in all of that time, only twenty there. And how long have you been in private practice?

MARCH: Since 1979. But, excuse me. We bought our ultrasound machine for our office in February of 1981 for the private office.

HARRIS So up until 81, you weren't doing that many in private practice, were you?

MARCH: No.

HARRIS So really we're talking about from 84?

MARCH: Yes, sir.

HARRIS With a high of forty a month?

MARCH: For pregnancy, not ultrasounds.

HARRIS So you make a distinction that there is ultrasounds that you use in your work and then ultrasounds that deal with pregnancy?

MARCH: Well, not I make. That's the way it is, yes.

HARRIS Okay.

MARCH: Sure.

HARRIS The ultrasounds that we're talking about in this particular case, they deal with Laci Peterson ultrasounds. Those deal with a pregnant woman, don't they?

MARCH: Yes, sir.

HARRIS So you are other looking at post menopausal women, looking at their follicles. That is something different?

MARCH: Yes.

HARRIS Looking at women to see if they are ovulating, looking at their. In a gynecological practice looking at that to see how their organs are, that would be something different?

MARCH: Yes, sir.

HARRIS Would you say that is -- let's back up to something you said. You said after these women get pregnant, you refer them out to an obstetrician?

MARCH: Yes, sir.

HARRIS When you refer to other physicians as well?

MARCH: You mean to other specialties, yes, sir.

HARRIS Yes. In fact you -- one specialty that you refer patients out personally, that you refer patients out is Doctor DeVore, correct?

MARCH: Yes.

HARRIS So, in fact, you believe that Doctor Devore is an expert, very good doctor in the field that he practices in?

MARCH: I will tell you that absolutely, if you are talking about congenital anomalies, and mid trimester and late mid second trimester and third trimester ultrasound examinations, Doctor DeVore is absolutely excellent, yes, sir.

HARRIS And so would you say it's probably a fair statement that Doctor DeVore has done more ultrasounds, or reviewed more ultrasounds of pregnant with women than you have?

MARCH: Yes.

HARRIS Now, with regards to these ultrasounds --

MARCH: Excuse me. The answer to your question is yes. I cannot say which one of us has done more ultrasound examinations in very early pregnancy when dating is so critical. At five or six or seven weeks, most likely I have done more ultrasounds in that situation than Doctor DeVore has.

HARRIS Now, you mention in your report that you have done -- talking about the number that you have done, his testimony was 70,000 ultrasounds. You have in your report that you have only done 35,000, correct?

MARCH: Yes, sir.

HARRIS And you are saying most of those deal with pregnant women?

MARCH: No, sir. Never said that.

HARRIS In fact, in your report don't you specifically state that you have -- which you don't even list how many you have dealt with, women that are pregnant.

MARCH: Yes, sir, that's correct. Absolutely.

HARRIS Now, when you were talking about Doctor DeVore's ability, do you think that he knows how to read an ultrasound?

MARCH: Yes, sir.

HARRIS And did you talk to Doctor Yip in this case?

MARCH: No, sir.

HARRIS Did you talk to Doctor Tow-Der?

MARCH: No, sir.

HARRIS Doctor Endraki?

MARCH: No, sir.

HARRIS But it's your testimony that pretty much they are all wrong about the information that they gathered from their ultrasound, correct?

MARCH: No, sir.

HARRIS Well, aren't you saying that the date of conception is different than what they all saw?

MARCH: Doctor Endraki, Doctor Tow-Der, Doctor Yip, and Doctor DeVore never estimated a date of conception.

HARRIS Well, they all used the medical records from Laci Peterson's file just like you did, didn't they?

MARCH: I'm not aware that one of them ever plugged in any modification based on date of first positive pregnancy test. And Doctor DeVore said that pregnancy occurs approximately two weeks after last menstrual period began. So he came to May 19th. But he never factored in any of the information regarding the pregnancy test. And I don't believe that --

HARRIS Doctor?

MARCH: Excuse me one second. I wasn't quite finished with my answer.

HARRIS I would object as non-responsive. The question was, did he use the same medical record?

GERAGOS: Could he answer -- could he finish his answer?

JUDGE: Finish his answer, then you can ask the question. The question was only, you did you use the same medical records?

MARCH: Yes, I used the same medical records, and more information than Doctor DeVore considered. And I think -- in fact, I'm not sure of what the verb you used, was. So I'm sorry if I'm using misquoting you. But I don't know that you said that I dismissed the other information. In fact, I took it all in. And in Doctor Yip's second ultrasound, the discrepancy between 20 weeks two days and September 24th was so out of synch with all of his five measurements that he tacked on six days, making the baby six days younger. And this was in someone who was actively managing this pregnancy.

HARRIS Let's go back to the same question. Did you use the same medical records that they did?

MARCH: Yes.

HARRIS All right. So we actually didn't need that five minute dissertation.

GERAGOS: Objection. Argumentative.

JUDGE: That's argumentative. Next question.

HARRIS Doctor, let's go back through this. You used the same medical records that all of these other people do, and you come up with a different conclusion based on what you believe is a different date of conception, correct?

MARCH: That's correct, yes, sir.

HARRIS So your entire analysis is based on that particular piece of information, because it's different than what everybody else has, right?

MARCH: No, sir.

HARRIS Your information is not different than everyone's else's?

MARCH: I think you had a two-part question, which is why I said no.

HARRIS All right. We'll go back through that then. Is your date of conception different than everyone else's?

MARCH: I am the -- I believe -- I do not recall any information offered as a date of conception by anyone except the comment by Doctor DeVore, that you never know unless you were there.

HARRIS Well, doctor, let's go back through this. Did you not testify on direct that you have read Doctor Endraki's testimony?

MARCH: Yes.

HARRIS Was she not asked about how she determined that Laci Peterson was pregnant?

MARCH: Yes.

HARRIS Did you not testify that you were considering Rene Tomlinson's information for your information, right?

MARCH: Partially, yes, sir.

HARRIS Okay. Well, what other partial information are you looking at?

MARCH: All of the medical records.

HARRIS Okay. Let's talk about the medical records. Medical records that we're talking about, this file up here, you have seen a copy of that, right?

MARCH: Yes, sir.

HARRIS That was a copy that was marked in evidence with Doctor Endraki, right? You read that in her testimony?

MARCH: Yes, sir.

HARRIS And it's also the same medical records that Doctor DeVore used when he testified, correct?

MARCH: Yes, sir.

HARRIS So everybody is looking at the same medical records, right?

MARCH: Yes, sir.

HARRIS Where in the medical records does it talk about Laci Peterson having a pregnancy test on June 9th?

MARCH: I'm not sure that -- the answer to that question is no place. But that's not the question asked of me by Mr. Geragos.

HARRIS Well, okay. Let's go through this then. So nowhere in any of the medical information, would you agree, is there any reference to there being a pregnancy test on June 9th.

MARCH: Change the words from medical information to medical records. The answer to -- I can give you, it's not in it medical records, the information. But the medical information that a pregnancy test was reported.

HARRIS Well, doctor, let's talk about that then, this medical information. Is it standard in your practice to use the statement of somebody from a baby shower as to when a pregnancy test took place?

MARCH: Why not? Women talk all the time. I did a pregnancy test, it's possible that's positive. It seemed to me very, very clear that the date of June 9th was identified with certainty, because there had been a baby shower the day before. Did I listen in on that conversation? No. Did I say to Mrs. Tomlinson, are you sure that you got the date, the thing, the shower right? No. But it's there, you know.

HARRIS So using that information from her, you use -- it's absolutely essential to your June 9th determination of all these facts, right?

MARCH: No.

HARRIS So what you just told us about relying on her information, it's not something that you used?

MARCH: No. You just used -- put the word "all" in there. And "all" is not a word that -- there is pieces. "All" is not -- I use more than simply a pregnancy test.

HARRIS Did you rely on Rene Tomlinson's information to come up with your June 9th date of conception?

MARCH: No. There is no June 9th date of conception. That's the date of the pregnancy test.

HARRIS All right. So that is something, that pregnancy test on June 9th is something you relied upon?

MARCH: Yes, sir.

HARRIS It's not anywhere else in the medical records, so that's the only information you have about June 9th?

MARCH: June 9th does not show up any other time. That's correct, yes, sir.

HARRIS So, again, going back to what the question was. That information is crucial for your opinion going from this June 9th date, changing all the other dates that you have been telling us about, right?

MARCH: It's one of many pieces of information.

HARRIS Do you have your report with you?

MARCH: Yes, sir.

HARRIS Doesn't it state on the first page of your report that you actually believed, as of October 15th, that that date was June 11th?

MARCH: Yes, sir.

HARRIS Okay. So since the 15th to whatever today's date is, you have changed your opinion?

MARCH: I would hope that you would give me the same two-day leeway for a typographical error that doctor -- was given to Doctor DeVore for his typographical error.

HARRIS Okay. So if it's in there once that would be one thing. But if we were to go to the last page of your report, Item Number 6, you also put that the first positive pregnancy test is also June 11th there?

MARCH: Why not be -- sir, it was in error by two days. I would like everybody to cut me the same two-days slack that was cut Doctor DeVore, who moved his date -- the date of Conner's death from the 25th to the 23rd. I'm sorry, it was an error. I made a mistake. And if we make it June 9th, then we have a death date of Conner of the 29th. It's New Year's Eve if it's June 11th. I'm sorry, I made an error.

HARRIS Let's talk about that. Now, this error goes from -- so you would agree now, based on your testimony, your review of Rene Tomlinson, that it's June 9th not June 11th?

MARCH: Yes, sir.

HARRIS So if we rely on June 9th that, again, is -- her testimony is the only place that that comes up, anything about June 9th?

MARCH: Her testimony is the only time I have the word "June 9th" identified, yes, sir.

HARRIS Isn't it a fact in her testimony that she doesn't state that Laci told her she took a pregnancy test on June 9th, does she?

MARCH: No.

HARRIS She, in fact, tells her on June 9th that she was pregnant. Isn't there a big difference there, doctor?

MARCH: There is no difference. The chances that a woman hosting a baby shower, a woman who has been infertile, trying to become pregnant, doing the positive pregnancy test, timing intercourse, which means ovulation, would not announce on the day of a shower that she was pregnant and have everybody rejoice in two pregnancies? That's not realistic at all.

HARRIS All right. So let's go back through those things. The shower was on June 8, wasn't it?

MARCH: That's my understanding, yes, sir.

HARRIS And Laci calls and tells her friend on June 9th that she is pregnant?

MARCH: Yes, sir.

HARRIS So you are making an assumption to form a medical opinion; isn't that a fact?

MARCH: Based on 30 years of being a fertility doctor, and knowing how excited females get with a positive pregnancy test, that's pretty good assumption, yes, sir.

HARRIS Okay. Let's talk about pregnancy tests for a second.

MARCH: Un-hun.

HARRIS Do you know what pregnancy test she took?

MARCH: Home Pregnancy Test.

HARRIS Well, doctor, you are an infertility specialist. Doesn't it make a huge difference which home pregnancy test she used?

MARCH: Of all those on the market, the lowest sensitivity is 25 international units per liter, which is less than -- by 50 percent less than what a urine pregnancy test, quantitative, would be on the day of a missed period, which would be 50 units of HCG. So, therefore, the least sensitive of all pregnancy tests is half what you would expect on that date. So the individual test is not

going to make a hill of beans.

HARRIS So you are telling us that there is no difference between home pregnancy tests?

MARCH: No. Sir.

GERAGOS: Objection. Argumentative.

MARCH: I didn't say that.

JUDGE: I don't think so. He can answer.

MARCH: I did not say that.

JUDGE: You can answer, doctor. What is your answer?

MARCH: My answer is there are differences, but they are not critical differences to establishing a date of conception.

HARRIS Well, does a pregnant -- home pregnancy test tell you when you conceived?

MARCH: If it's negative yesterday, and negative the day before, and positive today, you are pretty darn good, yes, sir.

HARRIS So then, again, let's just add some more assumptions that you are making in to your opinion. Do you have any evidence in the medical records that there was a home pregnancy test on June 8th?

MARCH: No, sir.

HARRIS On June 7th?

MARCH: No, sir.

HARRIS So you have no evidence of that, do you?

MARCH: No. That is a different question. The evidence that I have supporting multiple pregnancy tests came from a number of interviews of various friends of Mrs. Peterson that were carried out in pieces of information that were shared with me by Mr. Geragos' office when he sent me a plethora of information.

HARRIS Okay. So what you are telling then is, information that you have received from the defense is what you formed the basis of your opinion on?

MARCH: No.

HARRIS Isn't that what you just said?

MARCH: But these are transcripts, sir, and interviews. It's not --

HARRIS Transcripts. Transcripts of Rene Tomlinson?

MARCH: And interviews with other persons.

HARRIS Who didn't testify.

MARCH: That I don't know.

HARRIS Well, okay.

MARCH: I don't know who testified. I don't know.

HARRIS Well, don't you think that that would be important for you to know what you are basing your information on?

MARCH: I guess I just presumed that, that if people spoke to an investigator and gave information, that it was honest, they have got no reason to fudge it.

HARRIS Let's go back to looking at the medical scientific information that we have in this particular case. You agree that whoever it was, the first nurse practitioner that spun that wheel, so to speak, and met --

MARCH: We don't know there was a nurse practitioner. Whoever spun the wheel.

HARRIS Did you read the testimony of the nurse that testified about that?

MARCH: I don't know that I saw that.

HARRIS So --

MARCH: I just don't know who it was. That's all. If it was a nurse practitioner, fine. I don't know.

HARRIS Do you remember reading the testimony of the nurses that testified in this case?

MARCH: I think I saw some interviews. I don't know if I saw their trial testimony. I don't know, sir.

HARRIS Doctor, you talked about reading the testimony of Rene Tomlinson, right?

MARCH: Yes, sir.

HARRIS You remember that name. That's crucial to your opinion, isn't it?

MARCH: No. I remember the name because I remember the name.

HARRIS You remember reading Doctor Endraki's testimony?

MARCH: Yes, sir.

HARRIS Right? You don't remember reading Lisa Martin's testimony?

MARCH: I don't recall.

HARRIS Well, when you read Doctor Endraki's testimony, don't you recall in that where she says the person that set this chart up, Lisa Martin, set this up on July 11th of 2002, right?

MARCH: Yes, that's when the chart was set up.

HARRIS The chart was set up. She took basic medical information from Laci Peterson on that date, right then and there?

MARCH: Yes, sir.

HARRIS And because she did not have pregnancy test information, she gathered a standard menstrual flow information on page two of that workup, right? Do you remember that?

GERAGOS: Judge, where is he referring to? Excuse me. Where are you referring to?

JUDGE: What page are you referring to? Mr. Geragos is lost.

GERAGOS: I have got it right here. Where is that?

HARRIS Looking at page would 10391. Talking about the progress notes, 10391, which is marked as People's Number 6, which is has one of the nurses talked to her and took her information about her last menstrual period, right?

GERAGOS: That isn't the question. He asked a question in which he purported to quote from a transcript. That there was --

JUDGE: No, he is talking about --

GERAGOS: Yes, he is. He's looking at the transcript. He's misquoting. He asked him to read the specific item, you --

JUDGE: You are referring to the transcript now?

GERAGOS: He asked the question as if he was referring to a transcript. He knows full well there is nothing in the transcript about it.

JUDGE: He is referring to a transcript now, so he can proffer it.

HARRIS Doctor, showing you 56?

MARCH: Yes.

HARRIS That's People's 56?

MARCH: Yes, sir.

HARRIS Looking at that information there. What does that box say?

MARCH: I'm sorry. Please identify the box one more time. Which box? I'm sorry. Menstrual history.

HARRIS And what is that next to it?

MARCH: First menstrual period, age 11.

HARRIS And what does it say next to that?

MARCH: Regular.

HARRIS What does it say next to that?

MARCH: Duration of bleeding, five days.

HARRIS What does it say next to that?

MARCH: Amount of flow, moderate.

HARRIS What does it say next to that?

MARCH: Last menstrual period was 5-6-02.

HARRIS What is the box checked there?

MARCH: Normal.

HARRIS Now, we heard the testimony from the witness that the typed information from Miss Martin was when she set up ine 19 that particular chart. So you would agree that the nurse, or Nurse Practitioner, whatever her title is, whatever her designation, when she set that up, she went through and asked the last menstrual period information of Laci Peterson, didn't she?

MARCH: Yes. I'm also glad that, now you have said, that it was nurse or Nurse Practitioner. Of course, first question was Nurse Practitioner, which I never knew.

HARRIS Because you didn't look at Miss Martin's testimony.

MARCH: We don't know who wrote -- who provided that initial information. There were multiple people -- there are multiple people in the office. Okay? We also know from Doctor Endraki's testimony that the patient had a positive pregnancy tells, because Doctor Endraki said she doesn't want people in the office who are not pregnant. So the fact there was a positive pregnancy test had been known to the office prior to the setting of the first appointment, or prenatal intake.

HARRIS When was the first appointment?

MARCH: June 11th.

HARRIS So the first appointment was June 11th?

MARCH: July 11th. I'm sorry.

HARRIS So we know that at some point in time, Miss Peterson was -- she was pregnant prior to prior to July 11th. That is all we know from the medical information; isn't that a fact?

MARCH: From the medical records, yes, sir.

HARRIS And so we take those medical records, which is what the nurse does, or Nurse Practitioner, whatever term you want to use for that individual, Miss Martin, who the jury has heard from. She takes that wheel and she turns it, and she comes up with an estimated date of what?

MARCH: February 10th.

HARRIS Due date?

MARCH: Yes, sir.

HARRIS That's written into the chart?

MARCH: Yes, sir.

HARRIS And how many days later do they do an ultrasound?

MARCH: They did an ultrasound on July 16th.

HARRIS So they now do this ultrasound. They take the measurement of what?

MARCH: Crown-rump length.

HARRIS They take that crown-rump length, they measure it. And the computer, based on all these formulas that you are telling us about spits it out that it's ten weeks and one day, don't they?

MARCH: Plus or minus five days, yes, sir.

HARRIS And so the ten weeks one day matches the estimated dates that they had from spinning that wheel, don't they, doctor?

MARCH: Within one day of June 10th, which would have been based upon last menstrual period. That would have been 10 weeks, two days, yes, sir.

HARRIS What you have told us is, based on your review of Rene Tomlinson's information, they were off by ten days, right?

MARCH: No.

HARRIS That's not what you told us?

MARCH: What I said was, pregnancy test information shoves things nine days. What I have said was Doctor Yip's ultrasound moves things six days. Every piece of information, when I take all of it, okay, when you don't take a femur measurement from 135 pound woman, measured through an abdominal wall, through a uterine wall, through the soft tissue of the leg, of the fetus, with a GE RT 3200 Vantage Ultrasound Machine, and then take another measurement of a postmortem bone without any of that interference, and you use a Sonosite 180 machine, and say A equals B, and this is it, it's impossible. I'm trying to take as much information as I can, including the contemporaneous stuff by Doctor Yip. Doctor Yip had to be so, compelled he had -- that he tacked on six more days to the due date. I mean let's face it. He could have done the scan and said I'm happy, but he changed it. There was compelling medical information, four measurements, or five, whatever the number was, none of which was close to 20 weeks two days. In fact, one of them went to 18 weeks zero days. That is 16 days away.

HARRIS Doctor, maybe we can get back to the question that I asked you.

MARCH: Yes.

GERAGOS: There is an objection. That's argumentative. And he did answer the question.

JUDGE: That's for the jury to decide. Ask the question again.

HARRIS Doctor, you bring up another point, so let's talk about that right now. So you are saying ultrasound measurements that Doctor DeVore took, because they doesn't have all of these obstructions, don't have all of these other things that are going on in the living body, are less accurate than the ultrasounds that were taken by Doctor Yip and the Nurse Practitioner?

MARCH: Doctor DeVore based his analysis on a paper by Jeanty.

HARRIS I didn't ask you that, doctor. I asked you a simple question.

JUDGE: That's not responsive. Repeat the question.

HARRIS Are you telling us that Doctor DeVore's measurements of that bone in water is less accurate because it doesn't have any of those distortions that you find in a living human body?

MARCH: Oh, no. Absolutely not.

HARRIS So when you are telling us that all those things aren't present, it really has nothing to do with his measurements, does it?

MARCH: Has to do with the interpretation there, of course.

HARRIS Well, doctor, when you take the measurements, it is a measurement, period, right? You agreed earlier that the lengths that he got were accurate lengths?

MARCH: Sir, if we -- okay, fine. Doctor DeVore took three measurements. One gave him a death date of December 21st. Another one gave him a date of December 23rd. Both of those we know are impossible. So the day that comes back now is December 24th. Two of his measurements, I agree that one was 64, one was 64.5, and one was 65. I agreed to those measurements. I agree they were 64, 64 and a half and 65. 100 percent, there is no disagreement. But interpretation, there DeVore says we got to go with only one person. Jeanty. Jeanty is the one who gets to this December 24th and 22nd day. If you look at Jeanty, though, Jeanty also did what to come up with knows measurements? He, as a single investigator, Doctor Jeanty did all of the measurements himself, all with the same machine. Jeanty has reported that if he used multiple different machines, the error can be a low of three, a high of six days. Jeanty has reported since he created that formula, that there are different growth rates, and that female fetuses' femurs grow more rapidly in utero than males. That was not taken into account, because there was no sex in the initial study of Jeanty of his 46 patients. The fact is that with the singular exception of Doctor DeVore who says -- he says, it's my day, everybody else accept that. In a biologic system there are ranges. Robinson does. Hadlock does. Jeanty, in his formula that he looked at, that he developed for femoral length the same. It's only Greg DeVore. Do I buy Greg DeVore's measurements? Yes, sir, I absolutely do. Do I buy his interpretation? No, sir, it's 100 percent totally wrong. He's not taking the information. All of those variables -- Mr. Geragos, when he was speaking about examining Doctor DeVore, asked about what about December 28th as a date. And Doctor Devore kind of grudgingly gave him December 28th. Doctor DeVore also, in response to a question from Mr. Geragos said, you are changing things. What you are giving me is apples and oranges. Different machines, different doctors. One with tissue. One living. One dead. That's not apples and oranges, sir. That's a fruit salad. You can't do it. You can't do it.

<recess>

HARRIS Actually, we have a new reporter. I was going to have the question read back.

JUDGE: If you can scroll down on this computer, I can read the last one.

HARRIS That's fine.

JUDGE: All right.

HARRIS Doctor, right before you left you gave us your fruit salad answer, and I want to go back through this. To start with, would you -- would you say that you believe that there's more accuracy in Dr. Yip's ultrasound than there is in the first ultrasound?

MARCH: No. I -- depending on what you mean by accuracy. Talking about dating? Or I don't know what you mean by accuracy.

HARRIS Well, you keep going back to Dr. Yip's ultrasound as being a basis for why you believe the way that you believe. Is that a fair statement?

MARCH: It's one piece of information, yes, sir.

HARRIS Did you use the first ultrasound as part of your pieces of information?

MARCH: Yes, sir.

HARRIS Okay. And isn't the medical literature, doesn't it all say that if you have an early ultrasound, that that is the best record for accuracy data?

MARCH: Most -- crown rump length is most accurate between seven to nine weeks, number one. Number two, there is so much variation, even when the day of conception is known, that to lock in by a day or two, or something, or three, is not possible.

HARRIS Well, Doctor, I didn't ask you that. I asked you the first trimester -- first ultrasound is more accurate than the second one?

MARCH: And I responded that at seven to nine weeks, crown rump length is very accurate, yes, sir. More accurate than later on, yes, sir.

HARRIS All right. So the first trimester, the first ultrasound in this particular case is within one day of the estimated date of conception, which gives us our due date all based on ten week one day -- or ten week two day, I believe you said; right? They all come together from that first ultrasound?

MARCH: From the first ultrasound done at a time based on last menstrual period, later than the ideal time to measure crown rump length, gives us a mean day that backs us up one. And when we take the five day variation, it backs us up five and moves us ahead five.

HARRIS Let me go back through this. Which is more accurate, the first ultrasound for dating or the second ultrasound?

MARCH: The first ultrasound, plus or minus five days, is more accurate than the second ultrasound.

HARRIS So when you keep going back to Dr. Yip and kind of testifying to what he was thinking, let's go back through that, okay?

GERAGOS: There would be an objection.

HARRIS Must have been --

JUDGE: Commenting on the evidence. Sustained, right.

HARRIS Doctor, weren't you up there telling us what his thought process was when he did this second ultrasound?

GERAGOS: Objection. Same objection. No different.

JUDGE: No, I think so. He's asking his opinion now. Overruled.

HARRIS Weren't you up there telling us what you thought Dr. Yip's thought process was?

MARCH: Yes, sir.

HARRIS Okay. You never talked to him, though, did you?

MARCH: Having in my career delivered more than 5,000 babies, and having been involved with the adjustment of dates, and having known and spoken to people as to why dates are changed, I absolutely can estimate with accuracy why he chose to do what he chose to do, yes, sir.

HARRIS Okay. So the answer to the question is no, you never did talk to him?

MARCH: I thought you had a couple parts in that question; but I never did speak to Dr. Yip, that's true.

HARRIS All right. So the second part of your answer then, which is where you're telling us why he thought and all the changes and all those things, let's talk about that now. You're telling us that his thought process was that there was a difference of six days so he had to change things. Isn't that a fair assessment of your testimony?

MARCH: Actually the -- no, it's not, because actually the discrepancy -- if we take September 24th and use last menstrual period as 20 weeks two days, the discrepancy was as much as 16 days, because one of the measurements brought us down to a mean of 18 weeks.

HARRIS And so this is an error that he made, so he's unaware of, but that's still his thought process for why he changed the date?

MARCH: I don't know what error --

GERAGOS: Objection as to what was in his thought process.

JUDGE: Sustained.

HARRIS All right. Doctor, let's try and deal with the second ultrasound. The second ultrasound. It was taken by Dr. Yip, right? You agree with that?

MARCH: Yes, sir.

HARRIS And you saw the pictures which show you what the actual measurements were?

MARCH: Yes, sir.

HARRIS So you take the actual measurements and you plug them in and you get certain dates by using the formulas in the machine, right?

MARCH: Yes, sir.

HARRIS Those dates, by using those formulas in the machine, has a corrected due date of February 16th, right?

MARCH: Yes, sir.

HARRIS And you recall reading Dr. Endraki's testimony and Dr. Tow's testimony that in their practice they didn't change the due date?

MARCH: That's correct.

HARRIS So the doctors that were there that dealt with Laci Peterson, who had the accurate information in front of them, said It makes no difference to us because it's within six days; right?

MARCH: The question has a lot of parts; and the doctors that dealt with Laci Peterson included Dr. Yip, who did change the date.

HARRIS And Dr. Tow-Der -- Dr. Tow is his partner, isn't she?

MARCH: Yes.

HARRIS And Dr. Endraki is his partner, isn't she?

MARCH: Yes.

HARRIS And they both said in their practice it is the standard practice of their office, if it's within one week, they don't change the date?

MARCH: But the date was changed in the medical records. Not by me, by Dr. Yip.

JUDGE: No, the question was -- was the -- was the practice of the other two doctors that they did not change the date of birth if it was within six days?

MARCH: I -- okay. I'm sorry, sir, I misunderstand --

JUDGE: I think that was the question, I believe.

MARCH: I just didn't know how many doctors you were speaking about. Yes. Doctor Tow-Der does not change and Dr. Endraki does not change, but Dr. Yip does.

HARRIS And you have that information because there's a notation that it says corrected EDC of 2/16?

MARCH: Yes, sir.

HARRIS Even though Dr. Endraki and Dr. Tow were here and say We notate that but we don't change the due date?

MARCH: Yes.

HARRIS Now, Doctor -- let's go back through this again. You talked about, when you were asked your qualifications, that you've written some textbooks, right?

MARCH: No, I said I had written 80 -- more than 80 chapters in textbooks.

HARRIS All right. Those would be medical textbooks?

MARCH: Yes, sir.

HARRIS And you're familiar with, what is it, Kaylen Ultra-Sonography and Obstetrics and Gynecology, Fourth Edition?

MARCH: Without -- I'm familiar with some ultrasound texts, but go ahead. I mean I don't know that I know that one by name. Maybe yes, maybe no.

JUDGE: Did you consider that book in making or forming your opinions here today?

MARCH: I don't -- any other authors besides Kaylen?

HARRIS Kaylen is the textbook. The authors of chapter six is Filly, F-I-L-L-Y, and Frank Hadlock.

MARCH: I don't think I referred to that.

HARRIS Isn't Hadlock's one of the formulas that are used on these machines in this case?

MARCH: Yes.

HARRIS So you're aware of Dr. Hadlock's work?

MARCH: Oh, yes.

HARRIS And you're aware in this particular chapter --

GERAGOS: There would be an objection. He didn't rely.

JUDGE: If he didn't rely on it.

HARRIS Well, Doctor, isn't it the standard practice -- or isn't it -- what Hadlock says is that if you have a first trimester ultrasound, you never change it with a subsequent one; is that correct?

MARCH: I don't know what Hadlock says.

HARRIS Well, isn't Hadlock one of the experts that you looked at and reviewed in terms of plugging in these figures on the age of this baby?

MARCH: Hadlock came in at -- for a couple of manuscripts that Hadlock has written and the fact that Hadlock's equations are built into the computer system of many ultrasound machines.

HARRIS Okay. So you would agree then Hadlock is good enough that, in the medical community, his work, his formula, is in the computer that everybody uses, right?

MARCH: It's in the computer with many machines for some measurements. I cannot give you a yes on it's the one that everybody uses. I don't know that.

HARRIS Is it in your machine?

MARCH: Hadlock in my machine is for femur length, it is not for crown rump length. For yolk sack size we use Hellman. For crown rump we use Robinson.

HARRIS Okay. So the answer to the question is yes, it's in your machine?

MARCH: For femur length, yes, sir.

HARRIS So you would agree that you're not going to use a program or you're not going to use a formula that would not be scientifically acceptable; isn't that a fair statement?

MARCH: I don't understand. I'm sorry.

HARRIS Well, Hadlock's formula is to determine age based on certain sizes, right? That's what we're talking about here; isn't it?

MARCH: Femur length, yes, sir.

HARRIS So that's in your machine. And you would agree that you would not use a formula or a scientific theory that's not accurate in your medical practice, would you?

MARCH: We really -- if you're talking about femur length, Hadlock, the answer to your question is yes.

HARRIS So you're aware then that Hadlock says -- he's one of the -- one of the kind of golden standards in the community that you don't change a due date based on second ultrasounds if you've got one that's earlier, right?

MARCH: I think somewhat earlier when you quoted from that manuscript or textbook, whatever it was, I told you that I had not relied upon that in that textbook nor had ever read that word from -- in manuscripts by Dr. Hadlock, which I had read.

HARRIS Well, Doctor, if -- if you're here to give an opinion on ultrasound -- ultrasonic dating of the fetus, don't you -- don't you think you should know what the most common, accepted rule is in using the first ultrasound instead of the second ultrasound, right?

MARCH: What information is there that this is -- that -- to support the statement you just made?

JUDGE: Well, that's the way -- you're asking him a question. (Laughter)

JUDGE: He asks the questions and then you give the answers. (Laughter)

JUDGE: So, you want to repeat the question?

HARRIS Would you agree that Hadlock is one of the foremost authorities in that area?

MARCH: "That" meaning?

HARRIS Meaning dating of a fetus based on bone measurements?

MARCH: Yes.

HARRIS And wouldn't you agree that he says you should use the first trimester or first ultrasound over a second one all the time?

MARCH: I told you I don't know that that's what Hadlock says. I haven't relied upon that text.

HARRIS Now, you were also talking about, in this fruit salad thing, because you were using this second ultrasound, that there were different machines involved. Did I hear you correct about that?

MARCH: Yes, sir.

HARRIS Now, in your report you cited a paper, let me see if I can find that. I'm not sure I can pronounce it, S-A-L-T-V-E-D-T ultrasound dating?

MARCH: Tell me what page that is on, I'm sorry.

HARRIS Doctor, did you cite this particular paper in your report as an authority for basis of your opinion?

MARCH: Just please answer -- just please tell me where it is in here. That's all I asked.

HARRIS Well, Doctor, I'm asking you did you cite this paper in your report?

MARCH: If you could please identify what page --

JUDGE: What he's got in his hand.

MARCH: -- I could answer your question.

JUDGE: He's got it in his hand.

MARCH: Sir, I want to make sure that this is exactly the document that I cited. That's all.

HARRIS Okay. Let's go back through this. When you go to a journal and you read something, you read it, right?

MARCH: Yes, sir.

HARRIS And if you read it, you know what its contents are, correct?

MARCH: Yes, sir.

HARRIS Looking at that document that I just placed in front of you, does that appear to be the article that you cited in your report?

MARCH: I don't remember. Just please tell me what page it is.

HARRIS I'm asking you to look at that document.

JUDGE: Okay. Look at the --

GERAGOS: I've got the same document. Can you just tell me what page?

JUDGE: First of all, you need to identify the document, seems to me, so he can be looking at the document and see whether or not this is the report or the article that he relied on in forming his opinion, then he can direct it to more specificity.

MARCH: The answer to your question is yes.

JUDGE: All right.

MARCH: It is on the third page.

JUDGE: All right. That's your answer.

HARRIS All right. Now, it's in your report. Is that the document right there that you reviewed that you have cited as part of your report for authority?

MARCH: Yes, sir.

HARRIS Okay. Now, that we have that clear, right here, looking on page 43 of this particular report, do you see the highlighted portions?

MARCH: Yes, sir.

HARRIS So this report that you have cited for authority, doesn't it say that these examinations were performed on multiple different machines?

MARCH: Yes.

HARRIS So this authority that you have cited for the proposition for one point doesn't seem to have a problem using different types of ultrasound machines, does it?

MARCH: In that neither -- none of the machines used were the machines used for comparison in this case? Yes, sir, that's correct.

HARRIS All right. So let's talk about the machines that are used as comparison in this particular case.

MARCH: Yes, sir.

HARRIS So it's okay in that study to use multiple machines, but you find a problem with the machines in this case?

MARCH: No. That's -- that's not what I said. All that I said was that in that particular reference a GERT 3200 Advantage and Sonosite 180 were not utilized. That's all that I said. Also in my report you notice that there is a deviation, when multiple machines are used, in a report by Jeanty, who showed a variation of up to -- many machines three days, and other machines up to five or six days. So it's a -- I -- I believe a very simple concept that in order to reduce the chances of error when there are so many in this already, to do something very simple, and that is take one variable out and use a GERT 3200 Advantage that's all.

HARRIS So, Doctor, what were the results when you did that in this case?

MARCH: I didn't.

HARRIS So you didn't do any testing?

MARCH: No, sir.

HARRIS So do you know that there's a problem with these two machines?

MARCH: Do I know that there's a variation?

JUDGE: No. Is that your question?

HARRIS Do you know if there's a problem with these two machines?

MARCH: I don't understand the word "problem." I presume they both function. I don't know what you mean by "problem."

HARRIS Well, let's go back through that. Ultrasound machines are used in the medical profession, are they not?

MARCH: Yes, sir.

HARRIS And won't you say it's a fair statement that, if ultrasound machines were so variable from one machine to another, that that would be dangerous to patients' health?

MARCH: How is -- can you --

GERAGOS: Objection. It's irrelevant.

MARCH: I don't understand the question.

GERAGOS: Dangerous to persons.

JUDGE: I don't think so. Why don't you rephrase it.

HARRIS If you -- if the medical profession are using ultrasound machines that are so variable from one machine to another, don't you think the different results would be produced and that would be dangerous to a patient's health?

MARCH: I still can't answer your question. You're using the word so different, which is not, at least, interpretable by me. But there's a second issue. And this is an issue addressed by Jeanty, and that is to try to be as consistent as possible. It isn't important -- if I were to say that there is eight ounces exactly in this cup, and every time I look at this cup I came up with eight ounces, then there's consistency because when I double it or triple it I get 16 or 24. If somebody says it's 7.9 and they double or triple it, they get the same consistency, then we're okay. Slight variations of absoluteness are not the issue. The issue becomes introducing extra variables as you introduce when you have two doctors, Dr. Yip, Dr. DeVore. When you have a bone at 20 weeks, when you have a bone at 33 plus weeks. When you have a living bone with the artifacts introduced by ultrasound waves coming to and proceed through an abdominal wall in the uterus and the soft tissue of the infant and the amniotic fluid and one in a water bath. That's the difficulty. There are so many variables in this measurement that in the measurements and the people, that what you want to do is take minimal effort to reduce the amount of variability, knowing that you can never compress it, giving you much more security in your opinions.

HARRIS With regards to some of the things that you just said, didn't you already just tell us that the measurement of a bone in a water bath is not less accurate than one in a living body?

MARCH: No, I didn't say that. What I said was that -- and that there is information about bones measured outside the body comparing them to measurements outside the body by ultrasound, and that certainly has been reported. But in those instances there were, again, the same machines. I also don't know whether there was in -- in the -- in the manuscripts which I am familiar and which these comparisons have been done with a bone, femur, surrounded by the soft tissue of the leg, and then after that soft tissue has been stripped away, I don't know if it was a water bath with pure water but -- or saline. Most times, in order to increase the exogenicity of the medium through which the sound waves are being passed in these extirpated bone studies, some talc is added. I don't know if Dr. DeVore added talc. I did not see that he did. So, again, it's -- Dr. DeVore's 64 millimeters, 64 and a half and 65 millimeters, I absolutely accept. There is no reason to challenge those numbers. Zero. And I've never tried to do that.

HARRIS And Dr. Galloway's numbers? Do you have any reason to challenge those numbers?

MARCH: Absolutely not. In fact, Dr. Galloway is the one who, with her measurements and her expertise, takes the range of size, not by ultrasound but by caliper and the estimated date based on Sherwood, based on Fazekas and Koza. And Fazekas and Koza, although a Hungarian study, has been shown to correlate exactly with a study by Warren, which was of a population of the United States of America, that, if you look at those measurements, your range takes you out to 40 weeks -- even into February -- telling us that in a biologic system, to hone in on only one day is not something that is possible. Biologic systems vary. That's why even the crown rump length by -- excuse me, by Robinson at the early time in pregnancy at -- when it measures crown rump length 32 millimeters, giving us a mean of ten weeks one day, we have to go five weeks -- five days on either side, because even then when it's -- you're locked in, you can't -- to very early, you can't be locked in to one day. With in vitro fertilizations, I mentioned earlier when you know you put a sperm and egg together today, you do an ultrasound measurement of a fetus sometime later in early pregnancy, a low of seven, high of nine weeks, your variation there from when you know conception is three days. In my practice, fertility practice, I see that all the time from in vitro fertilization, and when I've done a single insemination, knowing exactly the day the sperm was put in that lady's uterus.

HARRIS So, Doctor, the answer to whether you agree with Dr. Galloway's measurements is what?

MARCH: That Dr. Galloway's measurements are and the interpretation thereof and the reference standards thereof --

HARRIS I didn't ask you about that.

MARCH: I agree with her measurements, yes, sir.

HARRIS Okay. So we've got that.

MARCH: Right.

HARRIS You agree with her measurements. And you've already told us you have zero experience in anthropology, right?

MARCH: Yes, sir.

HARRIS So you would agree that Dr. Galloway is in a far better position to give an opinion about her estimate of bones and the date of the death based on her examination than you are?

MARCH: I didn't know that she gave a date. I read her information. She did a broad range of the age of the fetus based on the measurement of the femur, the humerus, the tibia, and I think the bones in the head. I thought that she measured those. And, in reading her testimony, she measured all of these bones, and her testimony and report -- and she plugged them in to a variety of formulae and gave a range of 36 to 38 -- well, with Sherwood, 35.1, but then -- and this is the interpretation of the forensic anthropologist, which, as you rightly stated, I am not; she understands that you need variation, and she moves two weeks on either side.

HARRIS So, to go back to my question, would you agree that she's far more qualified to give an anthropologic opinion than you are?

MARCH: Yes.

HARRIS Now, with regards to this range that you keep talking about, Dr. DeVore said that there was something different about the ranges in his determinations, right?

MARCH: Dr. DeVore, as I understand, gave no ranges. He gave three absolutes.

HARRIS Well, would not three days be a range?

MARCH: No. No, sir. See, that's -- Dr. DeVore did not give three days. What Dr. DeVore did is he said that Jeanty's formula is everything. So if I measure 64, I get this date. I measure 64.5, I get this date. I measure 65, I get that date. If he had measured 65 three times, he would have gotten only one date. He doesn't give a range. He's locked into this incredibly diverse biologic system, and he gives one day. He is singularly the only person who comes up with a one day. It -- it doesn't make sense.

HARRIS Let's talk about this diverse biological system. Doctor, in your practice have you ever heard the standard growth curve?

MARCH: Yes.

HARRIS Isn't that something that every pediatrician in America knows?

MARCH: Yes.

HARRIS And isn't that something that every mother, when they take their child in, wants to find out if their kid's going to be big or tall?

MARCH: Yes.

HARRIS And isn't that something that they take and they plot on that standard growth curve and they determine whether you're in the 10th percentile, the 50th percentile, or the 90th

percentile?

MARCH: Yes.

HARRIS So, when you have points on a line, you can make a determination?

MARCH: Of?

HARRIS Of how a person's going to grow?

MARCH: People -- infants -- now we've moved into pediatrics, and infants grow, or at birth, in this percentile, and they commonly move from percentiles. And percentiles, of course, are extremely important because we recall that Dr. DeVore drew a bell-shaped curve, and he said We're going to focus in on this 95 percent. And that's everything that we do within the bell-shaped curve. Ala Fazekas and Koza, ala Sherwood, ala Hadlock, Robinson, Jeanty, and everybody, and the pediatricians; so, yes, in a biologic system, we call normal what's in that 95 percent of the bell-shaped curve.

HARRIS Okay. So you agree then that it seems like everybody uses these growth curves, right?

MARCH: Yes, sir.

HARRIS So the fact that Dr. DeVore applied a prediction of a growth curve based on first trimester, second trimester, and ultimate measurement of the bone to reach a conclusion, you think that something's wrong with that?

MARCH: Dr. DeVore did not do what you just said he did.

HARRIS Okay. So he didn't take those measurements and plot where he predicted a growth estimate would be?

MARCH: When you say those estimates, "those measurements," if you could please tell me what you mean by those, I can answer your question.

HARRIS Well, Doctor, you read his testimony, didn't you?

MARCH: Yes.

HARRIS And you read his report?

MARCH: Yes.

HARRIS And you know what he did, right?

MARCH: I know what he did, yes, sir.

HARRIS Okay. So when we're talking about this -- this -- what was it, a diverse biological thing -- I can't even remember the term that you used. What we're really talking about is a growth rate, right?

MARCH: See, the first time you asked the question you sort of slipped in crown rump length, and crown rump length has nothing to do with the growth pattern. The growth that Dr. DeVore was talking about was comparing two different ultrasound measurements of femur lengths and plugging it in to Jeanty's formula, one of very many formulae out there; and not everyone marches to the tune of the Jeanty drummer, okay?

HARRIS Let's talk about that, then.

MARCH: Okay.

HARRIS This particular femur length that we're talking about, would you agree that the femur length of Conner Peterson is at least second trimester?

MARCH: When?

HARRIS Let's take Dr. DeVore's measurement of the bone.

MARCH: Oh, okay. Fine.

HARRIS Would you agree?

MARCH: That it's in the --

HARRIS At least second treatment?

MARCH: In the third trimester, yes, sir.

HARRIS So you would say the third trimester?

MARCH: Yes, sir.

HARRIS So would you agree that Dr. DeVore is in a far better position to examine a third trimester bone than you are?

MARCH: I never tried to do that. I never said I did. I never based one piece of information on a measurement that I took.

HARRIS Would you not -- you agree that he's in a far better position to give an opinion about that than you are?

MARCH: An opinion about what?

HARRIS About measuring a bone and doing what he did.

GERAGOS: Objection.

JUDGE: Irrelevant.

GERAGOS: That's compound. Both measuring a bone and giving an opinion.

JUDGE: Well, doing what he did is vague. Measuring -- start measuring the bone.

HARRIS Measuring the bone.

MARCH: Please re-ask that question.

HARRIS Would you agree that Dr. DeVore is in a far better -- far better position to measure a third trimester bone than you?

MARCH: Yes.

HARRIS And wouldn't you agree that he's also in a better position to give an opinion about a third trimester bone than you are?

MARCH: No.

HARRIS Now, to go back through this just a little bit. Would you agree that Dr. DeVore's information and Dr. Galloway's information in terms of their measurements of the femur bone, femur length, are almost identical?

MARCH: Yes.

HARRIS Would you agree that the information that Dr. Peterson and Dr. Galloway has is almost the same in terms of bone?

MARCH: Did -- I don't recall Dr. Peterson measuring bones.

HARRIS Did he include Dr. Galloway's information in his report?

MARCH: Yes, he did, but I think that's different than Dr. -- I don't think he had an opinion about bones. He didn't measure them. He completely deferred to -- to Dr. Galloway on the bone measurements.

HARRIS All right. So the forensic pathologist in this particular case that had the bodies -- that had the bodies there for examination deferred to the forensic anthropologist; you agree with that?

MARCH: To measure the bones, yes, sir.

HARRIS And that's because the forensic anthropologist was the best person in that position to help with that determination, right?

MARCH: I think that's correct, yes, sir.

HARRIS Isn't -- and forensic anthropologists, isn't that what they deal with is bones?

MARCH: My difficulty with some of your questions, sir, is that best position to do this or do that. She didn't simply measure. She applied to reference standards. So sometimes I'm not sure that I 100 percent understand the questions, and sometimes there are adjectives that, at least, are not very clear to me. I'm trying to be as precise as I can be and accurate as I can be.

HARRIS Now, this preciseness --

MARCH: Um-hm.

HARRIS -- such as in your report where you state that although there's other information that suggests that delays in menses had been detected in the time the couple tried to conceive; did you find that in the medical records?

MARCH: In the medical records, no. It was in a -- a -- one of the testimonies, I think, of Dr. Endraki is that there had been some irregularity.

HARRIS Is that where she talked about going through and filling out that particular form that we were talking about?

MARCH: No.

HARRIS Because you've already read to the jury that particular form says it was regular, right?

MARCH: Yes.

HARRIS And that pretty much it was what you would expect, in a regular monthly cycle, right?

MARCH: That's a question, I think, moves us to why this interpretation is not an ultrasound case and why it moves it to the specialty of reproductive endocrinology and infertility for dating. And in research that I have done, in interviewing patients and talking about menstrual periods, when the word is they are regular and yet when they are mapped, monthly, and even if you speak to a patient after she has mapped 20 periods, and says they are regular, and you show interval variations of five or six days, that's what's very normal. Also in my report is some work from Treloar. Treloar is from the -- teaches graduate students at the University of Minnesota and has recorded almost 300,000 menstrual intervals in more than 2700 women, showing tremendous variation. A fellow by the name of Volmann reported in a text called Science and the Safe Period that his most regular of almost 300 patients studied had only -- 63 or so, or 68, with 225 menstrual cycles that were 28 days in intervals. So the one thing that we absolutely know about the menstrual period is that it's very variable. The second thing that a fertility doctor knows is that the -- whether it's the stress of attempting to conceive, or who knows what, that cycles tend to bounce around. And that if an ovulation predictor test is used, this month there may be evidence of ovulation at day 12, next month day 16, 17. And that three, four, five, six or even seven day range is within the range of normal for a single woman.

HARRIS So trying to go back to the question, again, is that where Dr. Endraki said she was having a regular monthly cycle?

MARCH: I thought that that information on that chart was recorded by someone in Dr. Endraki's office, and my comment about some irregularity was from a testimony, not from that document. Not from the medical record.

HARRIS And it's your belief that that's what Dr. Endraki testified?

MARCH: Someplace, whether it was Endraki or Tow-Der or somebody, there was information there was some irregularity, yes, sir.

HARRIS And -- and you went on to go on about putting in your expertise about infertility dealing with those issues; is it a fair statement?

MARCH: Yes.

HARRIS Wouldn't it also be a fair statement that you don't have any knowledge about anthropology, right?

GERAGOS: Objection. Asked and answered.

JUDGE: Sustained. He said he isn't an anthropologist.

HARRIS So in this particular case the opinion that you're giving is without any anthropological background --

GERAGOS: Objection. Asked and answered.

HARRIS -- without --

JUDGE: No, he's formulating a question. Overruled.

HARRIS Without a proven pathology background and your area of expertise being infertility; is that a fair statement?

MARCH: Could you ask that again, please. I'm sorry.

HARRIS The opinion that you're giving here is being given without any background in any anthropology, without a background in forensic pathology and with your area of expertise being in infertility?

MARCH: Yes, sir.

HARRIS The People have no other questions.

Redirect Examination by Mark Geragos

JUDGE: Mr. Geragos?

GERAGOS: Doctor, I have a question. If you didn't know that there was a phone call to Rene Tomlinson on May the -- June the 9th, if you didn't know that, take that out, would that change your opinion? As to the -- the dates?

MARCH: Not really. I think it -- it's nice to have that information, because it reinforces.

GERAGOS: And what does it reinforce?

MARCH: It reinforces the -- you know, the --

GERAGOS: Second ultrasound?

MARCH: It reinforces the second ultrasound. It doesn't negate the first ultrasound I think it's extremely important that the first ultrasound, which everyone, there's no question everyone says the first ultrasound is more accurate, even though it was done a little bit later than the peak time of seven to nine weeks, the time I tend to do ultrasounds because of my practice, that --

GERAGOS: Let me -- let me ask it this way.

MARCH: Okay.

GERAGOS: If you're telling me that the ten week ultrasound, ten week ultrasound is after the -- whatever the gold standard is, right?

MARCH: Yes.

GERAGOS: Gold standard is seven to nine weeks?

MARCH: Yes.

GERAGOS: You get a crown rump length. And then if that is the gold standard or the platinum standard, why is there a variation of five days on either side?

MARCH: The variation is there for -- and this is -- look at Robinson's data, because you cannot lock -- you don't know the absolute moment of conception.

GERAGOS: Right.

MARCH: And at ten weeks one you're going to be off a little bit in each direction. Coinciding perfectly with the in vitro fertilization data where you're putting sperm and egg together, and in one study three and another study three and a half days of variation, either side.

GERAGOS: Okay. So all you're doing -- if I understand correctly, you're coming to an opinion that's based on the first ultrasound, plus or minus five days, correct?

MARCH: Yes.

GERAGOS: You're using a second ultrasound which now shows -- and I don't have to put it up here again, but every single measurement shows it's on the low side for where you would expect it to be, right?

MARCH: Yes, sir.

GERAGOS: Five for five?

MARCH: Yes, sir.

GERAGOS: All five measurements are lower than 20 weeks two days?

MARCH: Yes, sir.

GERAGOS: Okay. So you've got one ultrasound that's not in the gold standard time in the seven to nine weeks, right?

MARCH: Right.

GERAGOS: And that says you've got plus or minus five days, right?

MARCH: Yes, sir.

GERAGOS: Okay. You do a second ultrasound and you now find that all five measurements on whatever -- three different, Robinson, Hadlock, and whoever, all five of them are less than weeks two days, right?

MARCH: Yes, sir.

GERAGOS: And whoever -- it was Dr. Yip doing it, correct?

MARCH: Yes, sir.

GERAGOS: Dr. Yip, like everybody else, assumes the date of conception's two weeks after the last menstrual period, right?

MARCH: Yes, sir.

GERAGOS: Which would be May the 20th, right?

MARCH: May 19th, yes, sir.

GERAGOS: May 19th. So he takes that date, yet he on the medical record writes down -- there's a form on here, correct?

MARCH: Yes, sir.

GERAGOS: Or a space?

MARCH: Yes, sir.

GERAGOS: And in that space it says corrected EDC, correct?

MARCH: Yes, sir.

GERAGOS: And he writes 2/16, right?

MARCH: Yes.

GERAGOS: So he shifts it six days, right?

MARCH: Yes, sir.

GERAGOS: And the reason that, if it's within seven days, that they didn't change the due date is because they know that it's a -- that life or babies are diverse biological systems and it doesn't matter one whit whether it's the 10th or the 16th except if the woman goes past that time, right?

MARCH: That's what the concern is.

GERAGOS: And the concern is you don't want to induce her unnecessarily, right?

MARCH: And prematurely, yes, sir.

GERAGOS: And prematurely?

MARCH: Yes, sir.

GERAGOS: So when he's correcting the date, it's so if one of his other partners picks it up and gets a call on February 24th, they don't induce her on that date, right? Because that's two weeks past the -- the original February 10th date, right?

MARCH: It's kind of like an asterisk. Draw the attention.

GERAGOS: We're talking your attention when we measure the baby at this 9/24 date on the second ultrasound, all five measurements are less than what we would expect them to be?

MARCH: That's correct, yes, sir.

GERAGOS: Okay. And when you then factor in a positive pregnancy test -- and one of the reasons we know there's a pregnancy test is because, when we review Dr. Endraki's testimony, they say they don't let people into the office unless a physician refers them or they've done a home pregnancy test?

MARCH: Positive pregnancy test. I don't remember the word "home"; yes, sir.

GERAGOS: Okay. And presumably when somebody finds out -- what you're saying is presumably when they find out, they call their loved ones?

MARCH: Yes, sir.

GERAGOS: Okay. Or their friends?

MARCH: Yes, sir.

GERAGOS: Okay. Now, in addition to that, the information that you have got, you -- was that there were -- Rene Tomlinson was not the only person who said when it was that Laci told her; isn't that correct?

MARCH: That's correct.

GERAGOS: Okay. And what year -- even if you take that out of the mix, somebody still has to account for the fact that Dr. Yip did the six day correction, right?

MARCH: Yes, sir.

GERAGOS: That the measurements, all five for five, were younger? Made the baby younger, correct?

MARCH: Yes, sir.

GERAGOS: And I would assume, most importantly, isn't the sum total of your testimony that you can't pick a specific day? That it's a range?

MARCH: Yes, sir.

GERAGOS: And that at this point if you map out this and you use whatever -- all the scientific data at your -- that's available, that the earliest date is December 29th?

MARCH: Yes, sir.

GERAGOS: Thank you. I have no further questions.

Recross Examination by David Harris

HARRIS Yes. Just real briefly. Doctor, you -- again go back to that second ultrasound Now, the second ultrasound you're saying that the baby is younger. What if the baby was just small?

MARCH: That's fine.

HARRIS So if it's a small baby, all those numbers match, don't they?

MARCH: Of course they do. But that -- that is exactly -- Mr. Harris, that's exactly the point. If the baby is small, then what we see at 33 weeks and two days or 33 weeks and -- 33 even, we see that, in fact, there's much more growth. So it's really later, because growth patterns are established in the second trimester So if we had a small baby at 18, what we're going to call -- I'm sorry, at -- at 18 or 19 weeks, when we call it now 33, it's kind of like 35, because we have to account for the extra prolonged growth You remember that Dr. DeVore said, using Jeanty's formula, it was -- this isn't absolute, but zero point three three nine days per such and such. And that adds extra days So if you want to say Ah-hah, we have a small baby, and then you have a baby that's in sync with some date later on, that pushes the date much farther out because that little baby, having a preordained growth pattern, Charles March versus Shaquille O'Neal, that you're going to get extra days. And so that pushes it out So, yes, if we take Dr. -- the femur length of 19 weeks four days -- could I stand up

JUDGE: Yes. Of course

MARCH: See, if -- what do I do with this (Hands exhibit to

JUDGE) Thank you, sir If we say now we have a little baby, and on September 24th, by femur length, this is now 19.4, and now we say 33.2, let's see, 33.2 is kind of like 32.9, so 19.4, so 5 and 3 and 1 So now we have to add December 24th, we have to add, what, 13 times seven. We have to add 91. We have to add 96 days. I don't have a calendar, but if we add 96 -- well, let's do it. So let's see, we've got six days here in September. And then we've got October, 31, November, 30, December, 31. That is now 98 days, that gives us December, when we say we have a small baby And then we stretched it out. That gives us December 29th as a -- the day when Conner Peterson's femur was 33 weeks two days, measured by Dr. DeVore, December 29th said by me; it all fits. The baby could not have died sooner than December 29th based on what your question to me: Suppose it was a small baby? It all fits. All fits

HARRIS So, Dr. March, what you're telling us is that you have the absolute ability to say that the baby died on December 29th?

MARCH: No, sir. What I said --

HARRIS Isn't that what you just said?

MARCH: If I did, I would certainly retract it. What I thought I said --

HARRIS Well, Doctor --

MARCH: No, no. Please, no. I said earlier

JUDGE: Wait --

HARRIS Judge --

JUDGE: The answer was the baby could not have died sooner than December 29th based on what your question to me: Suppose it was a small baby: It all fits The baby could not have died sooner than December 29th That's what he said

HARRIS All right. Now, to go through this.

MARCH: Yes, sir.

HARRIS So what you're telling us is when we look at that December 24th date, the growth pattern of that baby was established, wasn't it?

MARCH: Most folks go a touch later --

HARRIS Doctor, isn't that what you just demonstrated to us, is you just got up there and said Ah-hah, it's a small baby, so the baby's pattern of how it's going to grow, you versus Shaquille O'Neal? Isn't that what you just said?

MARCH: I think you're leaving out a number of phrases that I utilized.

HARRIS I'm sure I am, but isn't that what you just said?

MARCH: Well --

HARRIS The -- September 24th, the baby's growth potential was established, wasn't it? Yes or no?

MARCH: I said if we presume that, and I also said earlier in my testimony that most growth patterns, in terms of establishment, are accepted a little bit later than 20 weeks.

HARRIS Okay.

MARCH: That's what I said.

HARRIS So the testimony, it's either this way -- or let me try this a different way If you presume then that the growth pattern on September 24th for that child is established, Dr. DeVore is correct in his calculations; isn't he?

MARCH: No.

HARRIS All right. To take the other side, if that baby's growth pattern --

MARCH: I'm sorry, "calculation." You mean estimate of the dates?

HARRIS Yes.

MARCH: Okay. Fine. I disagree. No, he's not. Yes, sir.

HARRIS On the reverse side, if the growth pattern isn't established on that particular date and there's a variable, all this mathematics that you just went up in front of this jury and demonstrated doesn't mean anything, does it?

MARCH: Well, I was responding to your question which said this could be a small baby --

HARRIS So, then --

MARCH: -- and, therefore, if you -- if I wanted -- and I tried to answer your question based on that assumption And based on that assumption, I come -- and never, of course, knew that you were going to ask that question -- and there is the coincidence that it comes to exactly the first date that I picked So Dr. DeVore and Dr. Yip and Dr. Tow-Der and Dr Endraki and Rene Tomlinson all say, by their information, that the soonest date of death would have been December 29th; yes, sir.

HARRIS Now, I want to go back to the first question that counsel was asking you about, if we throw out the December 9th information from Rene Tomlinson, because it's wrong --

JUDGE: I think you meant June 9th

GERAGOS: June 9th

HARRIS June 9th information of Rene Tomlinson, because it's wrong, so we throw that out, the fact that you were wrong; would that change your opinion

GERAGOS: Objection. I didn't say that he was wrong

JUDGE: I don't think the doctor ever admitted that he was wrong. If you want to have the question read back

HARRIS I'll try it again

JUDGE: Okay

HARRIS If we take out Rene Tomlinson's information, because it's wrong -- you agree with that?

MARCH: Why is it wrong

GERAGOS: I never said it was wrong

JUDGE: If you admitted it entirely. That's what he said

HARRIS Do you have any evidence that there was a pregnancy test on June 9th?

MARCH: The answer to that question is yes.

HARRIS On June 9th?

MARCH: Yes.

HARRIS So if you take that information out, even though it is completely contradicted by everything in the medical records, it still wouldn't change your opinion

GERAGOS: There's an objection that's argumentative and assumes facts not in evidence

JUDGE: Well, I think it's argumentative Sustained

HARRIS Doctor, would you agree that the medical records -- you wrote in your report that they believe that there's a different date of conception.

MARCH: I did not know that there was a date of conception written into the medical records.

HARRIS Under number two

JUDGE: Do you have that -- he doesn't have it in front of him

MARCH: Oh, my report, yes. Go ahead, I'm sorry

HARRIS Isn't that -- in asking you about that --

MARCH: I thought you were asking about the medical records, I'm sorry.

HARRIS Well, the medical records goes through and it establishes due date, right?

MARCH: Yes.

HARRIS And it establishes menstrual date, right?

MARCH: Yes.

HARRIS And then you've read the testimony of the doctors, what they were saying And so, in terms of the conception, your determination of the date of conception is different than anybody else that made that determination, isn't it?

MARCH: No.

HARRIS Isn't that what it says in the report? It would be ten days later than what everybody else's is?

MARCH: I'm not aware -- please, who is everybody else?

HARRIS Who was -- Dr. DeVore asked about what the date of conception would be. Didn't you already testify that you said it was his testimony?

MARCH: Dr. DeVore said -- no, he did not say that. What Dr. DeVore said was we -- we presume that conception occurs two weeks after last menstrual period. I do not believe that Dr. DeVore offered an opinion that that's what happened in this specific case. That was a generic answer.

HARRIS All right. So in terms of a generic answer, even if you take away Rene Tomlinson's information, you still wouldn't change the fact that in your report you believe the date of conception was ten days later than everybody else?

MARCH: Who's everybody else? Please help me.

HARRIS The general standard that you just talked about that Dr. DeVore testified to.

MARCH: Rather than ten days, based -- I would make it probably closer to six or seven, based on the totality of information available: Simply the second ultrasound, simply measurements of and ranges given by experts, including Dr. Jeanty, and including all of the ranges plugged in to -- simply reading the information As -- as you stated, I am not an anthropologist, but I can read a report. And in looking at those bones and the report by Dr. Galloway, she moves everything farther after December 29th than I would, based on medical records, period.

HARRIS Let me see if I understand that. All the information -- all the things that you just talked about is the same information that you state at the top of your report that you're relying upon in forming your opinion, isn't it?

MARCH: Yes.

HARRIS And in your report you say it's ten days. So you're telling us now here on the stand that you would change your opinion, based on the same information, to six or seven days; is that correct?

MARCH: No. I changed it when you said delete the pregnancy test information.

HARRIS And we talked about earlier about you wrote in your report it was June 11th, right?

MARCH: Yes, sir.

HARRIS And anywhere in any of the medical records do you have any information that shows that there was a home pregnancy test on June 11th or June 9th?

MARCH: In the medical records? No, sir

HARRIS The People have no other questions.

2nd redirect Examination by Mark Geragos

GERAGOS: I do have a question.

JUDGE: Go ahead.

GERAGOS: What if I told you the Modesto Bee quotes Sharon Rocha --

HARRIS Objection. Relevance.

GERAGOS: Relevance as saying that she found --

JUDGE: Just a minute.

HARRIS Objection.

JUDGE: Did he consider this in forming his opinion?

GERAGOS: I'm going to ask him if he knows that how -- what that would do to his opinion. Tell you what, if she's publicly quoted in the paper as saying June 9th --

MARCH: Then --

GERAGOS: -- what if Jackie Peterson gave the police a statement that it was June 9th, Jackie Peterson, her mother-in-law?

MARCH: Everybody agrees with the -- with the information I had on and upon which I relied of Rene Tomlinson, yes, sir.

GERAGOS: What if Stacey Boyers also said, one of her friends, that it was June 9th?

MARCH: Same answer. All in agreement.

GERAGOS: Okay. And one would expect that, if June 9th is the date, she's told her mother or her friends that that -- and one of the friends has testified that's when she found out, that would be a pretty good evidence to you, wouldn't it?

MARCH: Yes, sir.

GERAGOS: No further questions.

HARRIS No questions.