Dentists Appt
discovery depo

DOC. 315

IN THE COURT OF COMMON PLEAS

OF CUYAHOGA COUNTY, OHIO

Karla Spehar, a minor etc., et al.,

Plaintiffs,

vs. Case No. 157883

Jeffrey J. Orchen, DDS, Inc., et al.,

Defendants.

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Deposition of DENNIS McTIGUE, DDS, a witness herein, called by the Defendant for direct examination under the statute, taken before me, Kathryn E. Smith, a Registered Professional Reporter and Notary Public in and for the State of Ohio, by agreement of counsel and without notice or other legal formality, at the Ohio State University College of Denistry, 305 West 12th Avenue, Columbus, Ohio, on Tuesday, November 13, 1990, at 8:40 o'clock a.m.

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APPEARANCES:

Ziegler, Metzger & Miller
1900 Huntington Building
Cleveland, Ohio 44115
By Mr. Timothy Bittel,

On behalf of the Plaintiffs.

Weston, Hurd, Fallon,
Paisley, Howley
2500 Terminal Tower
Cleveland, Ohio 44113
By Ms. Deirdre G. Henry,

On behalf of Dr. Orchen, DDS,
individually and
Dr. Orchen, DDS, Inc.

Baker & Hostetler
3200 National City Center
Cleveland, Ohio 44114
By Mr. Patrick Jordan,

On behalf of the Defendant,
Sherwood Medical Co.

Tuesday Morning Session

November 13, 1990

8:40 o'clock a.m.

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It is stipulated by and between counsel for the respective parties that the deposition of DENNIS McTIGUE, DDS, a witness herein, called by the Defendant for direct examination under the statute, may be taken at this time by the Notary, by agreement of counsel without notice or other legal formality; that said deposition may be reduced to writing in stenotypy by the Notary, whose notes may thereafter be transcribed out of the presence of the witness; that proof of the official character and qualification of the Notary is waived; that the signature of the said DENNIS McTIGUE, DDS to the transcript of his deposition is expressly waived by counsel and the witness; said deposition to have the same force and effect as though signed by the said DENNIS McTIGUE, DDS.

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INDEX

Examination By	Page No.	
Mr. Bittel	5	
Mr. Jordan	44	-> shewore
Mr. Bittel	92	
Mr. Jordan	97	-shewore.

DENNIS McTIGUE, DDS

by me first duly sworn, as hereinafter certified, deposes and says as follows:

MR. BITTEL: Maybe we should indicate for the record that we have assumed that we are just going to go forward. Mr. Yordan is not here. And he can -- I don't think we'll have a problem, right?

MS. HENRY: I don't think so since we have a time parameter.

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CROSS-EXAMINATION

BY MR. BITTEL:

Q. Doctor, good morning, my name is Tim Bittel, I represent the plaintiff, Karla Spehar. I think you know that, right?

A. Right.

Q. I understand you are going to provide some expert opinions on behalf of Dr. Orchen in this case.

A. That's correct.

Q. You are the chairman of the pediatric dentistry department here at Ohio State?

A. That's right.
Q. Is it true that you are not going to express any opinions concerning malignent hypothermia?
A. That's true.
Q. Is it true that you are not going to express any opinions concerning the level of, concerning the actions of Dr. Indresano?
A. Right.
Q. Are you going to express any opinions concerning the standard of practice that an oral surgeon is supposed to follow in the removal of a dental needle fragment broken off in someone's gum?
A. No.
Q. Is it my understanding that in your 16 years of clinical practice and teaching you've never had a needle break or known of an incident breaking, incident where a dental needle broke?
A. That's correct. Directly in any clinic that I was working or associated with.
Q. Have you heard some anecdotal events about needle breaking?

A. To be perfectly honest, I haven't. I would -- I mean I can harken back to my dental school days and hear of people talking about them happening prior to the advent of disposable needles. I don't have any direct involvement. I've never talked with a pediatric dentist when we meet and go to meetings and things. Obviously there are problems discussed in cases, and a broken needle is not one that I've ever encountered.

Q. Would it therefore be your opinion that a broken dental needle is a very rare occurrence?

A. Yes.

Q. Would you agree that where a patient does not move or jerk suddenly so as to cause the needle to break and where no unusally fibrotic tissue is encountered, there are only two reasons for a dental needle to break in use: one being a defectively manufactured needle or second being an improper technique by the dentist making the injection?

A. It's a hard question to answer, Tim. Improper technique in giving the

injection to cause a needle to break, it's a hard thing to imagine for me. My experience has been in treating young children, uncooperative children, and particularly in treating handicapped children and adults, maybe mentally retarded people who at times have been quite uncooperative, you know, they don't understand what's happening.

So I've had many occasions where I've given injections where the patient has moved and I would have to say that in that case, my technique wasn't the greatest because of the patient moving in the middle of it and having had it happen. What I'm trying to tell you is that if, to break a needle would be a very difficult thing to do. If you were trying to use a technique that was wrong to break a needle it would be a difficult thing to do.

Q. I'm not talking about handicap people and specifically in the Karla Spehar case.

From what you have seen, am I correct in saying that you know all of the

evidence in the case, that she was a cooperative patient, that she did not move or jerk?

A. That's what I read.

Q. Assuming that a patient, such as Karla Spehar was cooperative, was still, did not jerk or move abruptly and that the dentist did not encounter unusally fibrotic tissue, under those assumptions, would you agree that you can only conceive of two possible reasons for a dental needle to break, one being a defective needle or two, being some improper technique by the dentist?

A. Again, I'm going to have to tell you, I don't know what the improper technique by the dentist would be, I've never encountered that.

Q. Under those circumstances, what would be your opinion as to the needle breakage?

A. In my opinion, a needle had to be defective. If this child was a cooperative child and he utilized the technique which he described, which is the classic way to, you

know, to do a mandibular injection, if he did that, and she didn't resist or anything, I can't imagine anything other than a defective needle causing to break, I can't imagine how that would happen.

Q. So the answer to my question about there being two reasons for a needle to break in the case where a patient like Karla was still and cooperative and the dentist didn't encounter unusally fibrotic tissue, the answer is that you can only conceive the one reason, the defective needle?

A. To be perfectly honest, that would be true. Because I can't imagine what the improper technique would be to cause that thing to break.

Q. What is your understanding as to how many times, your factual understanding as to how many times Dr. Orchen palpated the area where the needle broke off?

A. I would have to re-read his deposition, Tim. If you can brief me, that would be easier than my trying to remember.

Q. That's all right. I'll go on and

we'll get to it. If Dr. Orchen, if the sequence were as follows: Dr. Orchen makes his injection, the needle breaks off and if immediately after the time the needle broke off, he palpates the area and says that he can feel the needle, would that, in your opinion, be an appropriate time for him to attempt to retreive the broken needle fragment?

A. Why don't you repeat that. I was distracted.

MS. HENRY: Let's stop.

(Discussion off the record.)

(Mr. Jordan has entered the room.)

BY MR. BITTEL:

Q. Doctor, I will just restate the question. If the sequence in this event has the needle breaking and then if Dr. Orchen, immediately after the needle breakage, palpated the area and verbalized and said that he could feel the needle fragment, in your opinion, would that have been an appropriate time for him to attempt the removal of the needle fragment?

A. The needle separates, he feels it,

when he goes back there to feel it, he feels it?

Q. Yes, sir.

A. Sure, that would be the appropriate time.

Q. If he said he could feel it, immediately after the needle broke off, but removed his finger from palpating the area and proceeded then to do the tooth restoration, would that have been an inappropriate action?

A. If he felt it and decided to leave it and go prepare the tooth, would it have been inappropriate?

Q. Yes, sir.

A. I think it would have been contrary to common sense. It's, good clinical common sense would dictate, if you can feel it and it's there, that would be the time to take it out.

Q. Would it have been contrary to the standard of practice in dealing with this rare situation?

A. You see that's an interesting point. When you say standard of practice, one

could infer that, that things have been written or documented and that there's a protocol published and well referenced regarding, you know, taking out needles and there isn't ones that are sitting there.

But I'm just, so all I can tell you is that it would be contrary to good clinical judgment to break a needle and to be able to feel it and to not take it out immediately.

Q. And the reason for that is because under that hypothetical situation, and if he could feel it immediately, he would have presumably had the highest probability of getting it recovered at that time?

A. Sure, it would be the easiest time to get it.

Q. Okay. You indicated in your report that he made, he did not make much manipulation. I believe those are the words that you used.

MS. HENRY: Tim, could you site him to the part?

MR. BITTEL: Sure.

Q. Doctor, it's on the first page, the

very last paragraph, the third line up from the bottom, he tried to find the needle without much manipulation of tissue and failing that --

A. This is after he made the incision?

Q. Yes, sir.

MS. HENRY: After he proceeded to -- are we talking about the manipulation he did initially when he thought he felt the needle and then proceeded to care for the tooth and then later went back, is that what we are talking about?

MR. BITTEL: That's what I was going to ask.

MS. HENRY: Okay.

BY MR. BITTEL:

Q. Where you talk about manipulation, do you refer there to the manipulation within the incision that Dr. Orchen made?

A. He then removed it and made a small incision where he thought the needle entered, he tried to find the needle without much manipulation of the tissue. My recollection is that he said he was careful, that he -- I

would have to paraphrase it. What I got from that is he made an incision and then gently tried to find it to see if it was right there. That was my impression from reading the deposition.

In surgical technique, depending on who the surgeon is and what the technique is, you might very aggressively lay tissues back, if you got to get way over there and you are way up here superficially, you may move tissues apart rapidly and get down there,

My impression from his deposition was he made this incision and was quite ginger in trying to detect the needle. And it didn't appear to me that he did a very aggressive manipulation of the tissues. My impression was that he was trying to see if it wasn't right submucosal, right under the tissue. And that finding that it wasn't right there, he didn't do much else. He just took the child to the oral surgeon. That's how I interpreted it.

Q. Whose depositions do you have copies of there?

A. I have Dr. Hauser's and Dr. Orchen's.
Q. If I were -- strike that.
My understanding is that Dr. Orchen says he made an incision about, of about a half an inch; is that your understanding?
A. That's what I remember reading.
Q. If Dr. Orchen explored within that half inch incision for five minutes with a hemostat, would that be, in your opinion, an excessive amount of exploration in that small incision?
A. Well, I guess the amount of time doesn't really have anything to do with how much you manipulate the tissues. I mean you could sit and look for five minutes and not even touch it. It would be more, a better indicator would be how deep, you know, he proceeded with the instruments, not really how much time he looked at the incision. That certainly isn't a very long time to fool with it.
Q. Okay.
A. He couldn't have done very much in

five minutes. My impression was he wasn't very aggressive; he didn't go very deep; he just looked submucosal.

Q. Okay. Dr. Indresano has indicated to us that when he saw the, saw Karla, the needle had migrated to approximately three centimeters below the surface of her gum tissue. If that's true, would you agree that it is probable that Dr. Orchen's surgical attempt to remove and manipulation of the area caused the migration of the needle?

MS. HENRY: Objection. I wouldn't call it surgical.

Q. Well, his incision.

A. No, I would not agree. You said 30 millimeters?

Q. No, sir. Three centimeters.

A. That's 30 millimeters.

Q. All right.

A. Three centimeters is over an inch. And I would not agree. In fact, I would disagree strongly with that. From what I read of what Dr. Orchen did, it sounded like a very gentle manipulation of the tissues. To push

something an inch or inch and a half into the tissues would be a force that would be different than what I read in, from what Dr. Orchen did.

Q. Well, if the sequence in this event is that the needle breaks off; Dr. Orchen manipulates the area twice with his digits; he does the tooth restoration --

A. He feels for it?

Q. Yes, sir. He feels for it twice; he does the tooth restoration; he makes the half inch incision and he palpates the, excuse me, yeah, he palpates with the hemostat. And that she's then taken to Dr. Callahan in the building who does no technique other than to look at it, and I believe he indicated he ran his finger gently down the gum line. Dr. Callahan takes an x-ray and then they refer her to Indresano at Metro. Under those circumstances, would you agree that there's no other force being applied to this girl that would cause the needle to migrate three centimeters?

A. No other force?

a. Yes, sir.

MS. HENRY: Objection.

A. I don't know.

Q. Under that hypothetical. Obviously you are not a fact witness.

A. Well, I think the issue there is the migration of the needle is a function of the movement of the child's mandible and the muscles that insert there. And it could be. And I don't know, I don't know really anything about what causes a needle to move through tissues. But it is certainly reasonable that the normal function there could have caused migration of the needles.

The muscle that inserts on the mandible right where the injection is given is a muscle that's very active in the opening and closing of the mandible, of the jaw. So I mean there's an awful lot of activity in that area. And I mean it's reasonable to assume that could have caused it as well.

Q. Maybe I'm asking you questions frankly that are beyond your expertise. You said that you don't know anything about what

causes needles to migrate. Is it therefore true that you don't have any expert opinions about what caused the needle to migrate in the Karla Spehar case?

A. Yeah, I think that's true.

Q. Okay. Do you consider the breaking of the dental needle in the Karla Spehar case to be a dental emergency?

A. No.

Q. Therefore, it was appropriate for Dr. Orchen to take the time to do the restoration as he did?

A. I think he exercised good clinical judgment in doing that.

Q. You read Dr. Orchen's deposition, do you understand that he has testified that at the time the Karla Spehar event took place, he had never encountered a broken needle and he had no experience in removing a broken needle, do you understand that to be a fact?

A. Yes.

Q. If I asked you further to assume that a mother was sitting in the waiting room while Dr. Orchen was working on Karla, and if

this was not a dental emergency and Dr. Orchen had the time to do the tooth restoration, would you agree that the exercise of pediatric dentistry within the appropriate standard of care would have required and did require Dr. Orchen to consult the mother, to tell her that this rare event had taken place, namely the needle breakage, to tell her that he had never encountered this, to tell her that he had never attempted a needle removal, a broken needle removal, and to obtain her consent for the further treatment that he undertook?

MS. HENRY: Are we talking about completing the restoration or what are we talking about, further treatment?

Q. Let me rephrase the question. Under the circumstances of Karla Spehar, we've agreed that this is a rare event, correct?

A. Yes.

Q. And assume that Dr. Orchen never encountered a broken dental needle before, assume that he had never had any experience in removing a dental needle, assume that this was not, as, according to your opinion, a dental

emergency and assume that he did have sufficient time to go ahead and complete the restoration, under those circumstances, would you agree with me that the proper standard of pediatric dentistry required Dr. Orchen to make those disclosures to Mrs. Spehar who was in the waiting room and to obtain her consent prior to the time he undertook an attempt to remove the needle?

A. Well, it's more, I don't think that can be answered with a yes or no, Tim. And the reason is the principle that one should follow at that time, I think, is the best care for the child. He had time to do the restoration. And as I said before, I think that was a prudent thing for him to do. He did that without leaving the child's side. And he was able to control that child the whole time.

This is the child's initial restorative appointment, meaning the first time the child had ever had an injection and he had control of her physically and he had, emotionally had her under control as well.

And if he, at the time, felt that leaving her to go out, you know, Just to leave her to go out and talk to mom would put her at risk for starting to cry or to move around or do something like that and make it more difficult for him to retreive it, then I can understand why he made the incision that he did.

The other thing is that the extent of treatment that he provided was minimal. I mean he made a superficial incision. And from my understanding, didn't manipulate the tissues much. And if he had made a lengthy incision and was laying flaps back and all that sort of thing, it would be a different thing.

But I think that what he did was within the standard of practice. He made a clinical Judgment based on the child's behavior and the situation at the time.

Q. So your answer is that he didn't have to make those disclosures to the mother to practice within the standard of care?

MS. HENRY: Before he completed them?

Q. Before he made the incision and an attempt to remove the needle.

A. My answer is that, you know, I cannot guess what was going on in the operating room, in the operatory at the time. But that if he felt that leaving the operatory and leaving that child, if that would, if that would have contributed to her becoming less cooperative or something, he would break the communication he had with her; if he felt that, then I would agree that his staying in the operatory and doing the procedure that he did was within the standard of care.

The issue is, would be a different one if we were talking about an adult or older child. And this is something that hasn't been factored into it. I've seen it. This is a rookie three-year-old, who, he demonstrated good technique in managing her behavior. And there's a risk incurred if he leaves the child's side.

If he felt that her behavior could have changed by his leaving, then I think he stayed within the standard of care by staying

with her.

Q. My understanding from your report, I'm on the second page now, the second full paragraph is that students were cautioned to use long needles and not to inject to the hub to facilitate retrieval of broken fragment. I quote that. That's part of your report, correct?

A. Students were cautioned to use long needles and not to inject them -- yes.

Q. Is it your --

MS. HENRY: Twenty years ago, right?

Q. That's what I'm going to ask. It's your testimony that at some time in the past students were taught not to inject needles to the hub. And to use long needles, so that if a needle broke off then the fragment could be easily retreived; is that right?

A. Surely they were then. I'm not saying that they are not taught that now. I'm saying that it was a more pertinent issue when there was a greater risk, when it was a greater occurrence. Then there was more

attention, probably more curriculum time spent on teaching people the technique.

Q. Well, what is taught now concerning whether a needle should be injected all the way to the hub?

A. I don't give the lecture on anesthetic technique, though we do lecture to students about technique with children.

Frankly, we don't spend an awful lot of time talking about it to tell you that we tell them do not inject to the hub. Routinely that doesn't come up. We tell them how to give the injection. And under normal circumstances, you don't need to inject to the hub.

But if you are asking me do we get up in front of the class and say now be careful, don't inject to the hub because if you break off the needle you'll have a hard time removing it, no, we do not teach that.

Q. Will you agree that the current standard of dental practice and standard which applied in 1987, October provided that ordinarily a pediatric dentist would not

inject a needle all the way to the hub?
A. Again, you keep saying standard of practice. In clinical practice, based on what, you know, you confront clinically, you inject the needle to the correct position and deposit the solution. And ordinarily you don't need to take a needle to the hub.
But certainly there are occasions that do occur where you do take the needle to the hub. And you don't sit there and say gosh, I'm going to have to go to the hub on this needle, let me take it out and put on a longer needle and reinject this child so I don't take it to the hub because I'm afraid it might break. That is not a consideration clinically. So you choose a needle that you use consistently and if on occasion it goes to the hub, and that's not a very frequent occasion, but if an occasion occurs, it does.
And I would suggest that most pediatric dentists have done that. It's not unusual. I mean it's not unheard of, let me say that. And it's not in violation of the standard of practice to inject to the hub

because you are afraid the needle will break.
Q. I guess the, what I'm having a problem with, an issue in my own mind with, is that I understand that there appears to be a change in teaching evolved over say, the last 20 years or so, where about 20 years ago, approximately, it was commonly taught that you use long needles for mandibular blocks and that you don't inject to the hub, both techniques in order to facilitate retrieval of a broken fragment; is that true?
A. I think that probably then it was true and it was a realistic concern. When needles were breaking those issues were pertinent.
Q. Okay. And you use the word, or the phrase "realistic concern" now, and in your report. Is it your understanding, again, as a clinician and as a professor who teaches pediatric dentists, is it your understanding that the breakage of needles, dental needles in use is not a realistic concern in today's dental environment?
A. It's a very rare occurrence. It's

something that people go through their lifetimes without having occur It's not something that we, it's not something that we spend a lot of time worrying about It just doesn't happen very frequently

Q From your experience, again as a clinician and as a professor, are the Sherwood Monoject needles the ones that you most typically use and encounter in the practice?

A Yes.

Q As a professor and clinician of pediatric dentistry, would it be -- I take it there would be some number of broken needle events in a given time period, for example, a year, that would make it important for you to believe that needle breakage was a realistic concern in use; is that true?

MS HENRY: Could I hear that question back again?

Q. Let me rephrase it. Your opinion is that needle breakage is not a realistic concern in today's dental practice?

A. When you say "realistic concern," let me say that it's not a frequent occurrence

and it's nothing that, it's nothing that we spend a lot of time teaching our students about, our dental students or pediatric dental residents about.

Q. Okay.

A. Let me put it in terms of curriculum time then. It's a rare occurrence. There are many very rare things that, pathologic situations, traumatic injuries, things like that that occur over a population over a period of time. And in a curriculum, you don't teach, you can't pick out all the most rare things to teach about. You teach and you practice to deal with those problems that occur regularly. So needle breakage is just something that is rare and as you've seen, many, many practitioners today don't encounter.

Q. But needle usage is very, very common?

A. Sure. Absolutely.

Q. In fact, it's essential for every dental procedure, other than simple prophylaxis, hypodermic dental needles are

used?
A. That's not exactly true. Particularly for pediatric dentists. There are things that are done. For restorative sorts of visits, surely.
Q. All I'm trying to understand is this: There, I presume there must be some frequency of needle breakages that would change your opinion as a professor as to what you should be teaching student dentists.
A. Sure. There is some threshold. And if there were a rash of needle breakages, if there was a rash of new disease or new traumatic injuries or things like that, then we would say this is an issue that's merited enough importance to really emphasize in our training programs. Sure, that's common sense.
Q. Now if I were to tell you that as an example, Sherwood had five reports of needle breakages in a given year, would that be significant to know as a professor of dentistry?
A. I would need more data, Tim. That doesn't mean much. I don't know how many

needles they sell. If you told me how many injections were given, and then how many needles broke on those injections, then I could make a better guess, But I guess that certainly didn't impress me as a very large number, given the number of injections that are given in a year.

Q. What needle do you teach students to use here for mandibular blocks on children?

A. Twenty-seven-gauge short, about one inch.

Q. Have you ever used any other needle, you personally, for mandibular block on children?

A. I've used other needles. When you say "children," I guess it basically depends on the size of the patient. I would routinely use a long needle, inch and a quarter needle on a large adolescent, teenager sort of thing. But in kids that are kind of, that are smaller than that, we use 27-gauge shorts.

Q. What's the risk of using the 27-gauge long on children?

A. The risk, I think it's a matter of

preference. It's a longer needle, so you have, you have less control intraorally. If it's shorter, you have a little bit more ability to move it around and not have it standing out as far. There may be a psychological component to the length of the needle. I probably wouldn't buy that too much. It's a matter of control. It's safe and effective.

Q. I didn't mean to cut you off.

A. It's just safe and effective. It's plenty long enough to do what we need to do with it. It's a matter of preference, Tim.

Q. Okay.

A, It's the needle that we teach here and it's the needle that we used at LSU for kids.

Q. Are you familiar with any written standard that would suggest that a 27-gauge short needle be used for mandibular blocks on children?

A. Well, it's in textbooks.

Q. That's what I'm asking you. Can you reference me to a textbook that says you

should use a 27-gauge short needle for
manubrium block?
A. I can reference you to several
It's a. I'm going to tell you several times
that it's a matter of opinion This is a book
by Richard Matthewson. Fundamentals of Pediatric
anesthesia It's is second edition
Q What's the year of that?
A This is '87 The most acceptable
presterilized disposable needle to the
pediatric patient is the 27-gauge. 25-
millimeter length That's the short Not
only is it well suited for the infiltrate
technique employed. But its length makes it
acceptable fr the inferior alveolar block
procedure. That's lidocaine injection
Xe goes on to say that Sanders
advocates use of a 25-gauge short needle for
this purpose. Believing the larger diameter is
more effective It is therefore, a matter of
personal choice as to size preference
Interesting we wrote a textbook,
several of us here, and we didn't even
reference the size of the needle in it

Q. I read it last night.
A. I looked at it and I thought my gracious, we didn't even put it in there. I guess it's because whether you use a 25-gauge or 27-gauge long or short, there's really no science to dictate what is -- there are several others here that say the same thing.
This is a book by Steven Wei, '88, Pediatric Dentistry Total Patient Care. The most common gauge needles used in dentistry are 25, 27 and 30, and the two most common lengths are 1 inch and 1 1/2 inches. Long needles, 1 1/2 to 1 5/8, are frequently recommended for the inferior nerve block anesthesia. Again, that's mandibular.
However, the clinical experience has shown that short or one inch needles are adequate and safe for nerve block anesthesia in children and are especially recommended for use in young, difficult to manage children. Then others will say use 25- or 27-gauge long or short.
Q. So it's a matter of opinion by the practitioner?

A. Yes. And I would tell you that I think somebody is practicing within a general standard of care if they use any of those. Now if you have someone who is using a 23-- gauge needle, I would have to be surprised about that. You can find a lot of people using needles.

Q. On the textbook, you wrote several chapters in Pediatric Dentistry, Infancy Through Adolescence; is that true?

A. I wrote them and then I edited a section.

Q. Which section did you edit?

A. Let me see what I did. I think it's called Section 2, The Primary Dentitioners. Section 2, The Primary Dentitioners, so that included Chapters 16, 17 -- Chapters 16 through 27 I edited. And that meant that I basically stayed in contact with the authors and kept them on line and, time line and all that. I didn't have any creative effort in a lot of those chapters.

Q. Do you use in your practice magnetic resonance imaging?

A No.

Q. As far as what is, and I think we covered this before, I want to make clear though, as far as what is the acceptable protocol for the removal of a broken dental needle by an oral surgeon, you are not expressing an opinion on that; is that true?

A. That's correct.

Q. Have you been involved -- strike that.

You wrote some chapters on dental trauma in this pediatric dentistry book.

A. That's correct.

Q. Have you personally been involved as a clinician in treating children who have been involved in various dental traumas?

A. Many times.

Q. And you describe in your book the techniques for treating various traumas, including the removal of broken tooth fragments in the lips, you deal with that?

A Yes.

Q Is there, have you updated this book? This is sort of recent, it's 1988 was

this been updated at all since the publication?

A. No. That's the most recent issue.

Q. The standards of practice that you write about in Chapter 14 styled as Introduction To Dental Trauma, Managing Traumatic Injuries In The Primary Dentation --

A. What page are you on?

Q. I'm just asking about the chapters, the standards of practice that you discussed in Chapter 14 of this book, and also in Chapter 33 called Managing Traumatic Injuries In The Young Permanent Dentation, are those still accurate to the best of your knowledge?

A. Right. There hasn't been an awful lot changing in this.

Q. The techniques that you describe in those chapters are the techniques that you believe are applicable to be followed by a pediadentist today and in 1987?

A. I don't think there's anything in here that was that controversial, that things have changed that much. Maybe restorations of teeth, there's some new materials out that

come out all the time that maybe we would update. I would say by and large, this is still pretty current. It's kind of general stuff.

Q. And further, what I'm trying to determine, this book was published in 1988. I'm assuming that you would have been writing it in 1987; is that true?

A. Yes.

Q. The standards that you talk about, and particularly in those two chapters that you wrote, Chapters 14 and 33, they would have been applicable standards of practice in 1987 also; is that true?

A. Yes. I think that the terminology has changed on some things in that Chapter 14 as I look at it. But it's pretty general stuff. The textbook is, it's difficult -- well, obviously it's published once and it's gone. But the stuff that we wrote about in these chapters is pretty general. I don't think it's changed that much. It's materially the same.

Q. Specifically the suggestions and

recommendations that you made for the use of radiographic examinations in those two chapters are still appropriate and were appropriate as a standard of care in 1987; is that true?

A. Yeah, I think so, Tim, I think so. Nothing has changed significantly.

Q. Would you agree that if a long 27-gauge needle were used in a mandibular block, there would be a higher probability that in the unlikely event of breakage it could be retreived easily?

A. I don't have any way of knowing if it could be retreived easily. I don't know, it depends on where it breaks, I guess.

Q. Do you have an opinion as to whether or not, if a dental needle breaks, they typically break at the hub or don't you know?

A. I wouldn't, I've read this stuff and I've read that it says the hub, but I don't have any direct knowledge. And I haven't read any studies that have done stress tests on them to show you. I can tell you that I've read the depositions that somebody said

somewhere along the line --

Q. I'm not asking you to adopt the other people's testimony unless you want to and you think it's true.

A. I don't have enough knowledge to do that, It would make common sense to me, but I don't know much about that.

Q. Does it follow and is it true therefore, that you don't have an opinion as to whether or not if dental needles break, they would typically break at the hub, an independent professional opinion?

A. It would be a guess. I would just, I would guess that that's the obvious spot where they would break but I don't have any data to show you that. That's just a supposition on my part.

Q. Before -- strike that.

Are you at all familiar with the ADA ANSI Standard No, 54?

A. Well, I've seen it now. I wasn't familiar with it before I was, I became involved with this case.

Q. So the first time you saw that

standard was in connection with this case?
A. That's correct.
Q. I understood that that was published in the ADA journal. Did you have that understanding also or are you just neutral on that?
A. I'm neutral. If somebody said it is, I'm sure it was.
Q. Would you describe for me what is the proper technique that is to be followed by a pediatric dentist in making a mandibular block injection on a patient like Karla Spehar?
A. Well --
Q. Do you know, I mean do you have an opinion about it?
A. I guess I could probably struggle through it if I had to. Of course, I know. I mean if you want me to read you the textbook, we wrote it.
Q. Or is it just what's in your textbook?
A. The precise technique is written in the textbook and I haven't read the technique

recently.

Q. I am not trying to prolong this deposition. If the technique --

A. Why don't you ask me what you want to know about the technique.

Q. Is the technique what is described in your textbook?

A. I would have to read this. If I knew where you were coming from, I could answer your question more directly. There are emotional components of giving injections to children that don't, that I don't think we dealt with well in this chapter. And that is, it starts on page 317 and I'm the one that's giving those injections there and that's my daughter that I am doing them to. Let me read. The injection technique is figure 27.7 on page 322 --

Q. Let me just ask you this because we are all working under a tight time constraint. If you say the injection technique is as described here beginning on page --

A. Well, 27.7 describes the inferior

aveolar block on page 322.
Q. And there's text underneath that that also describes that.
A. That's correct. I don't think we described the block in the body of the text. I think it's only in that figure, I guess that's how we did it.
Q. I'll accept that, that's fine.
A. There is a little bit on page 321 that relates more to the position of the foramen. I guess there is some stuff in the body of the text. Yeah, that's going to give you more detail than I can tell you off the top of my head.
MR. BITTEL: Doctor, I don't have any further questions.
MS. HENRY: Would you guys mind if we took a ten-minute break before we started?
(Short recess taken.)
- - - - -
CROSS-EXAMINATION
BY MR. JORDAN:
Q. Good morning. If I ask you any questions you don't understand, please stop me

and ask me to clarify.

A. I sure will.

Q. How did you become aware of what the standard of care is in the dentistry field for treatment after a broken needle has occurred?

A. I guess I would say that I, just reading the depositions is the first time that I really have gotten much into it. I reviewed some of the literature that I have got available to me.

Q. What literature did you review?

MS. HENRY: Before we go on here, Pat, are you talking about what an oral surgeon does?

MR. JORDAN: I'm just asking him what he knows.

MS. HENRY: Wait a minute. Let me just tell you this: I think we forgot to tell you. Before you came in, he's not rendering an opinion on the standard of care for oral surgeons, for the care of Dr. Indersano, for the care of the removal of dental needles by an oral surgeon. Is there anything else, Tim, that we missed?

MR. BITTEL: Those are the three things. Malignent hypothermia, Dr. Indersano, or the standard of care for the removal of dental needles by an oral surgeon.

MS. HENRY: Does that clarify anything for you?

MR.JORDAN: That's an additional piece of information that's nice to know.

THE WITNESS: I don't know much beyond that.

MR. JORDAN:

Q. What literature did you review?

A. I think I looked in a couple of these pediatric dental textbooks, but there isn't much that talks about the techniques of removing needles. I didn't go to the library and such.

Q. Did you look at any case studies?

A. No.

Q. I take it you have no personal experience in dealing with a patient who has had a needle break off?

A. That's correct.

Q. Have you talked to any colleagues

who have had instances where needles have broken off in one of their patients?

A. I don't know of anybody that it ever has, it's never come up.

Q. What dental needles are used at the Ohio State Dental School?

A. I think that everybody -- I can tell you what we buy and I think they are used throughout the school and those are monoject needles.

Q. It's your understanding that monojects are made by the company I represent, Sherwood Medical?

A. That's correct, right.

Q. Now do you buy all different sizes of the monoject, the 23 through the 30?

A. Do I?

Q. Yes.

A. We buy -- no, no. We buy 27- and 30-gauge.

Q. Both long and short?

A. We have 27-gauge short and we have 30-gauge ultrashort. Then I went to get a 25-gauge long needle and we didn't have any.

I went and found them in the adult clinic.
Q. When you said we, you are referring to the pediatric section --
A. The budget that I control is pediatric dentistry.
Q. Do you know what the -- is the other half of the dental school the adult section?
A. That's more than half, but yes.
Q. That's the other portion?
A. We are the only people that deal with children.
Q. Do you know what the rest of the dental school purchases or uses?
MS. HENRY: Objection.
A. I don't know. I know that I found monoject needles when I went to one place, but I don't know.
Q. How often do you use either a 27-- or 30-gauge needle in a week?
A. Myself?
Q. Yourself.
A. Several dozen times, I guess.
Q. Do you observe students or other colleagues using dental needles?

A. Yes.
Q. How many times in an average week would you say you've observed the 27- or 30-gauge dental needles being used?
A. Twenty-seven is what we use primarily. Thirty-guage we use for limited injections. Twenty-seven-gauge is the one that gets used almost all the time. What we would have to do is figure out how many injections we give a week in our clinics and that sort of thing.
Q. Could you give a ballpark estimate?
A. Hundreds of times a week in our clinics, sure.
Q. And have you been using the monoject needles ever since you have been at Ohio State?
A. Yes.
Q. Ever had any problems with the monoject needles? We've been talking about breakage, but have you had any other problems?
A. I have never had any personal problem with it.
Q. Do you know what's on the warning

labels? Do you know what's on the package that the monoject needles come in?
A. I do now. I went and looked at it as a result of reading these depositions, but I didn't before I went and looked.
Q. I take it you learn, in dental school you learn how to use a dental needle; is that fair to say?
A. Sure.
Q. Did anything on the warning label surprise you or teach you anything you didn't know?
MS. HENRY: Objection. Go ahead.
A. It said to not inject the needle to the hub.
Q. I asked sort of a compound question, did it surprise you or did it tell you anything --
A. I wasn't surprised.
Q. Was that something you had never heard before?
A. No, it was nothing that I had never heard before.
Q. I take it you had heard in law

school --

MR. BITTEL: Dental school.

Q. -- dental school that you are not to inject the needle to the hub?

A. You know, I can tell you that I suppose that I heard that some time, but I certainly cannot tell you that it's a principle that was engrained into me clinically or in the didactic fashion.

Q. Are you aware of any studies that demonstrate that 25-gauge needles can be used as painlessly as 27- and 30-gauge needles?

A. There are a couple of studies that I'm aware of that state that even, I think it includes, included 23- gauge needles as well, that patients could not perceive the difference.

Q. Do you have any reason to disbelieve those studies?

A. Oh, sure.

Q. What is the basis for your --

A. Clinical judgment, clinical experience.

Q. Do you think the patient should have

noticed a difference from when you used a 25- and 27-gauge needle?

A. No, I didn't say that. I said that I think that there is a difference that can be determined. I think they can tell the difference between the extremes.

Q. Between the 23 and 30?

A. And in my clinical experience the needle that we selected we selected because we were able to use if effectively.

Q. I understand you were talking about the control and that sort of issue. I'm just asking about the discussions I've seen in some literature about the various trauma the patient may have or may not have.

A. There's essentially one paper that reported that. I think that kids can tell a difference, right. Now if you ask me can they tell a difference between 25 and 27- --

Q. Exactly. That's the question I want to pose to you.

A. There are not any well controlled studies to dictate one way or the other. And I think that's why personal preference

dictates and my personal preference is to use 27.

Q. I understand for other reasons that you articulated during Mr. Bittel's questioning about the control of the needle.

A. No, no, that's a different issue, that's the length of the needle.

Q. What other issues dictate your preference to the 27 as opposed to the 25?

A. Frankly I've always used the 27. I guess I have no real reason to go to a 25. I can't tell you that I give *so* many kids injections with 25 and *so* many kids injections with 27 and I can tell the difference. I just have always used 27-gauge needles. I see no reason to change it.

Q. So sort of past practice and the fact that you feel that there's better ease of control of the 27-gauge --

A. No, the gauge has nothing to do with it. Control was the length. That's a separate issue.

Q. Aside from the length issue, is it just your past experience with the 27-gauge

that dictates its use rather than the 25?
A. Right.
Q. Would you recommend the use of a 30-gauge needle for a mandibular block in a child the size of Karla Spehar?
A. Of the appropriate length?
Q. Yes.
A. I wouldn't recommend it. I wouldn't say it's wrong. I think that some people use 30-gauge needles. I have no reason to argue that.

The issue with gauge of the needle relates a lot to ability to aspirate. And there have been enough studies to show, and my clinical experience is you can aspirate with any of those. As I told Mr. Bittel, in my opinion now, the choice of your needle has a lot to do, has most to do with personal preference.

I don't think as hard as you look, I don't think you are going to find any science that is going to dictate that one is more appropriate than another. Nor do I think you are going to find a universal opinion. I

think what we are seeing and able to document pretty easily is it's a matter of personal preference.

Q. Do you think a 27-gauge needle more easily breaks than a 25-gauge needle?

A. I don't know.

Q. Do you think that a 30-gauge needle breaks more easily than a 27-gauge needle?

A. I just don't know.

Q. How about bending, the flexibility that you observe between the needles, do you observe more flexibility or bending in a 27-gauge than a 25-gauge?

A. I haven't used a 25-gauge enough to really be able to tell you that. But I could tell you if you looked at the extremes that a 30 would bend easier than a 23.

Q. How about just the 30 -- 23 hasn't really come up in this case so far.

A. It's in the ADA standards.

Q. I'm just going to focus on the 30 and 27 right now. Do you notice that there's a greater degree of flexibility of bending in the 30 as opposed to the 27-gauge?

A. No, I don't. Again, I don't use a 30-gauge long or short needle, I use a 30-gauge ultrashort. It's that much shorter and the fulcrum isn't that long and I don't use it in a technique where it would bend. I don't think about the bendability.

Q. I take it when the fulcrems are very short the needle --

A. You don't have as much opportunity to bend it. When I use a 30-gauge short, it's either for ligamentary injection or most frequently for infiltrations right there.

Q. Have you ever used a 30-gauge needle for a mandibular block?

A. No.

Q. Do you know any colleagues who do?

A. I hear people talk about using 30-gauge needles routinely. I can't tell you who they are, but I know that people use them. And their clinical impression is that there's, that the children have less sensation. I can't tell you who they are. I know they are used.

Q. Have any of them complained that the

30-gauge needle breaks during those mandibular block injections?

A. I have already said that I've never heard of anybody who has had anything to do with any type of breakage.

Q. Would you agree that the primary difference between the gauges is the degree of aspiration that you can obtain with the different gauges?

A. The primary difference is the size.

Q. And what is the effect of that size difference in the gauges that you have observed?

A. I think the lumen is smaller. The smaller the needle, I think that the lumen is smaller. In terms of ability to aspirate, that was one of the original concerns about not using smaller gauged needles because there was concern that you couldn't aspirate. And, but through clinical experience and then through a number of other studies that have been published it has been shown that you can aspirate through. I don't know that that's a difference. I would probably think it is not.

Q. What does the phrase "hubbing the needle mean to you"?
A. I don't know, I would guess that it means pushing it to the hub.
Q. I just want to make sure we are operating on the same page.
A. Why don't you just tell me, taking it all the way so the hub hits the mucosa.
Q. We call it the gum line. Is that the same thing?
A. No.
Q. What's the difference?
A. Basically the gums are around the teeth and the area where you are giving these injections aren't into the gums, it's into the mucosa, soft tissue. I think people understand when you say gums, I think that's pretty good.
Q. Would you agree that needle breakage is usually -- strike that.
You won't be able to give an opinion as to the usual cause of breakage of the needle since you haven't experienced any; is that fair?

A. You are right about that.
Q. Have you ever treated any patients who have malignent hypothermia?
A. No, I have never treated anybody. Now wait a minute, in New Orleans we were referred a pair of kids who had, whose dentist thought they had malignent hypothermia and we treated them pretty routinely. I cannot guarantee -- I have never treated anybody that I know for sure had a definite diagnosis of malignent hypothermia. You hear about it, but I have never personally treated anybody that there was laboratory evidence that they had, confirmed, let's say.
Q. And here there is no biopsy to confirm that there is malignent hypothermia.
A. Right.
Q. But I take it you had an occasion in New Orleans where you performed some dental procedure that he or she may have had malignent hypothermia?
A. Yes.
Q. Did you take any extra precautions with that patient, that you recall, did you do

anything different than with a normal patient?
A. I think what we did, through a history we pretty much eliminated the rationale. We eliminated the diagnosis. We did a lot of consultations with the physicians and things and we were treating the child in the middle of New Orleans Children's Hospital, but we treated her routinely.
Q. How many times have you performed a mandibular block?
A. I have no idea.
Q. Is it in the thousands?
A. Sure.
Q. Would you have done anything different than what Dr. Orchen testified to in his deposition about the mandibular block?
A. From his description, it sounds like he did a mandibular block the way we do mandibular blocks. There isn't an awful lot of different ways to do them. There's another technique that is called a different injection that he didn't use. He said he just gave a mandibular block and the way he described it seems to be the classic method.

Q. What is this other technique? Is that a different type of technique?
A. You block the same nerve, but you go to a different spot, you go to a different position.
Q. Why would you perform one technique as opposed to the other?
A. That's a good question. I think that if you had -- there are some patients that are, particularly adults, that are particularly difficult to get mandibular blocks on. And then you go to other techniques. But it's Just rarely done. The technique that he did was the one that you use over 99.9 percent of the time I would say.
Q. If you are trying to have a successful mandibular block and it's not successful the first couple times using the technique Dr. Orchen used, would you try this other technique?
A. I don't know the technique. I've done it once or twice. I don't know the technique well enough to do it. What I would probably do is deposit the solution in a

different position, but I would use basically the same approach.

I've never had a child, I've never had difficulty with local anesthesia, profundity of local anesthesia in a child. There are a lot of anatomic and physiologic reasons for that. Problems that I have had have been more with adults or older teenagers, and things, it has to do with the density of the bone and permeates the tissues and gets to the nerve block, Children's bone is quite porous really and usually you are able to get the anesthesia. It's not infrequent that you give a second injection, but usually that will do it.

Q. With children under five, you started to answer the question I'm about to ask, and that is how many times, I mean does it just take one injection to, normally to successfully perform the mandibular block on a child under five?

A. I would say in a good majority of cases you get it with one injection. But I'm sure that in our clinics every day we need to

readminister a block. I think it would be, it's a little bit different for a pediatric dentist versus a learning student. But even for a pediatric dentist, probably a busy pediatric dentist, every week that person is using more than one block. That's not unusual at all.

Q. What about three, is that unusual, would you say?

A. When you say three, what factors then is the amount of anesthesia, the amount of local anesthetic the child is going to be administered and that's what the dentist would be concerned about.

Q. I don't really know how much anesthesia you need, but if you assume the amount of anesthesia that would be required for a child.

A. If you gave three Carpules on a, it's a milligram per kilogram issue, you are talking about the toxicity of local anesthetic. That's my concern. You, it's not like saline, you can't just keep shooting until, let's start with the kid's ears and

move in and we'll get this kid's whole head.

MS. HENRY: I think there's a problem here. If you are talking about a mandibular block, he considers using one Carpule, regardless -- are you talking about times you insert the needle as opposed to do one mandibular block and you go back with a second Carpule?

THE WITNESS: I'm thinking you are talking about using a whole Carpule every time you go in.

MR. JORDAN:

Q. What about just the number of injections.

MS. HENRY: On one Carpule?

Q. Right.

A. You may give several with one Carpule, sure.

Q. What would be the reasons that would affect the number of times you would inject the needle?

A, Well, probably the profundity of anesthesia. And typically when you give a mandibular block, you don't get total

anesthesia of like the soft tissues in the outside surface. You have to give, come outside and give a long buckle block, that many times will accompany and be a normal part of a mandibular block.

If you are using a rubber damn with a clamp that's going to impinge upon the gum tissue or if you are going to do crowns and possibly impinge upon that tissue, then you would give that. So let's say you give a mandibular block and then you give a long buckle, then you set it down and have this needle recapped, you may well then, if you find your anesthetic procedure isn't profound enough, you may redo that again.

Q. What about the number of injections on the inside mucosa, are there occasions when you put it in and it doesn't feel like it's in the right location and you pull it out and put it in again?

A. On occasion, yes.

Q. And what factors dictate to you when you put a needle in why you would want to pull it out without injecting and putting it back

in again, looking for another location?
A. Well, probably the anatomy of the area. There's a large muscle that's right there and you don't want to inject into the muscle. You want to inject into a space adjacent to the muscle. Depending on the anatomy and angulation of the ramus of the mandible, the size of the ramus of the mandible, those, there are anatomical considersations.

And then there are times when a child will have infection back there and it's difficult to visualize it. And then times when a child isn't behaving where it's a moving target and you just didn't get it in the right spot. So the idea is to put the needle where it's supposed to be.

Q. Eliminate the moving target for this question. Would you say that resistance in the mucosa is the reason that you would pull out the needle and inject it back again looking for a better area, a softer tissue to inject the or deposit the anesthesia?

A. That might be one. That if you went

in and felt that you were in the muscle, then you might take it back out and reposition it.

Q. And how can you tell if you've hit the muscle?

A. Sometimes you can't. Sometimes you can't. Usually if the child is cooperative, it's just not that difficult to see. The landmarks are pretty clear. And particularly if you are experienced. The technique is to put your fingers on the mandible and look for, these are technical things we do. We pull the tissues taut to get a good look. If you pull the tissues taut, you can see this little triangular space, called the mandibular triangle, there's several names, and we know our anatomy that way. And you get a feeling for the sort of resistance that is routine when you give an injection. It's clinical experience I would say.

I would think the dental students would far more frequently inject to muscles, the less experience, the less they are going to know what it's going to feel like.

Q. Do you notice different resistance

levels in different children when performing those?

A. Even when I'm doing it correctly, sure.

Q. And some tissues are tougher than others?

A. I would say some tissues, sure, if you hit a ligament or if you hit bone, it's going to feel differently. Your technique normally is to try to just retract a little bit and slide by it.

Q. Ever taught that you shouldn't bend a needle before inserting it?

A. Yes, I've heard that.

Q. Have you ever bent a needle before you inserted it?

A. I probably have. I can't tell you exactly when. Probably -- certainly rarely, I can't remember the last time I've done it. I can't tell you I've never bent a needle. I would be lying if I did.

Q. Would you agree that most dentists that you are aware of have probably bent a needle prior to its insertion?

A. I don't know.
Q. Would you agree that a dentist should not attempt to change the direction of a needle during a mandibular block while the needle is embedded in tissue?
A. No. I don't agree with that. I think that generally speaking, when you give the injection you go in and you put it in one spot. But I can also tell you that in the daily practice of giving mandibular injections to children, there are times when we retract a little bit and position it somewhere else. Particularly in kids that the anatomy is not real distinct.

It's an approach. We have plenty of anesthetic solution in the Carpule. If we put a little bit in this position and retract and put a little bit somewhere else, then we stand a better chance of having profound anesthesia the first time. So to say that it's contraindicated and it's beyond the standard of practice to deviate and needle when it is in, I would have a hard time agreeing with that.

Q. Would you agree that's what is taught in dental school?
A. I have no idea.
Q. Do you remember what was taught in dental school?
A. I really don't remember what was taught in dental school.
Q. Did you look at any x-rays in this case?
A. I don't think so. I don't think I ever saw any x-rays.
Q. Do you twist the syringe at any point during a mandibular block?
A. Twist the syringe. How do you mean twist, in what dimension?
Q. I guess the normal meaning, side to side is twist to me.
A. Twist would mean rotation.
Q. Right.
A. Let me think. I might a little bit. Probably would be hard not to. When you say twist it, are you talking about a needle that's like this and it's rotating just like this?

Q. I'm taking my pen and just going like this with it, side to side.

A. Yeah, there's probably a little rotational when you give an injection, yeah, a little bit, not much, but I'm sure there is some.

Q. Do you have any idea about how much pounds of pressure or ounces of pressure you apply in a syringe around a needle during a mandibular block?

A. The hands pushing it in?

Q. Yes. There's no other force that's putting the syringe in, right?

A. I was looking at the pressure that you exert by plunging it. The solution can come out in different volume, depending on how much pressure. No, I don't know. I guess I can tell you that one of the hallmarks in pediatric dentistry is giving painless injections. And one of the basic tendencies we teach is don't hurt the kid.

So I can tell you from direct experience that you are going to find a difference in the technique of a pediatric

dentist from maybe someone who only treats adults or an oral surgeon or something like that. You can see a definite difference in the technique.

Q. Are there any handbooks or textbooks that talk to you about how much pressure to apply to the syringe or needle during a mandibular block or any injection?

A. No, it's more the art and the science there. I think that you will find in textbooks, and I'm sure I have them, one of our principals, we give much slower, when I say we, pediatric dentists give much slower injections or are slower to insert the needle. You will find that it will take a pediatric dentist significantly longer to deposit a given amount of solution of anesthetic than someone who is maybe only treating adults. And we are very gentle with the tissues. So I would think that it would be easy to conclude that the pediatric dentist is more gentle in the technique, less pressure.

Q. We had talked earlier or you had

answered some questions about the ANSI ADA, specifically No. 54. Had you ever heard that term "ANSI ADA"?

A. I've heard, sure, I know that they've got standards.

Q. What is the ANSI ADA?

A. I don't know what ANSI stands for, I don't know what it's an acronym for. The ADA is frequently involved in, through counsels of consultants in evaluating products and materials and things like this, published standards that I suppose dictate or regulate maybe materials that are used. I don't know a lot about it. It's nothing that we, it's nothing that we refer to with any frequency.

Q. When you say we, you mean dentists generally?

A. Probably.

Q. Well, what standards do you as a dentist follow?

A. Toward what now?

Q. Well, say the selection of a needle.

A. Well, I guess in selection of the needle, it's an easy, it's the one that we

have always gotten. A better example might be of something new that's coming out, a mouthwash, Plax, P-l-a-x, there's a good example of material that was marketed directly to the public without any scientific information. And normally in those sorts of things you look to, you look to literature, to data to support something that is new. In terms of needles, to be perfectly honest, I mean it never occurred to me before all this came up. Again, I'm just using what I was taught and have used and taught all these years.

Q. Would you agree that mandibular blocks are deep penetrations?

A. They are probably the routinely, the most deepest penetration that we routinely do. Particularly in dentistry for children. Most of the other injections we give are just kind of infiltration injections, there are exceptions, but routinely those are the deepest ones.

Q. How deep do you normally need to go to have a successful mandibular block? In

other words, to deposit the anesthesia, how much in millimeters must you go inside the mucosa?

A. Well, you know, it's an interesting question. It varies. Probably 15 millimeters, maybe 10 to 15 millimeters, something along those lines of what is usual. But frequently, you know, as I said earlier, frequently depending on the anatomy of the situation, you go deeper. It's just not unusual to do that.

Q. What are supraperiosteal injections?

A. Well, it's, periosteum is tissue that's attached to the bone, so if you are giving a subperiosteal injection, that means you are going down and really engaging bone. Supraperiosteal deep, basically you are depositing solution before you engage the tissue it is attached to.

Q. Would that be a mandibular block?

A. I guess that would fall into that category.

Q. Would you have done anything

different than Dr. Orchen after the needle broke off?

A. You know, I read through his deposition and obviously I wasn't there, I didn't see the behavior of the child, it's very difficult, hindsight is 20/20, but I think I probably would have done exactly the same thing that Dr. Orchen did.

Q. Including not telling the mother?

A. You see that I can't know because as I told Mr. Bittel, I wasn't there to see what the child's behavior was like, but I could envision a scenario where that would occur.

Q. If the child was perfectly calm, and perhaps even unaware that the needle had broken, given that hypothetical situation, what would you do?

MS. HENRY: Objection.

Q. Given the same scenario prior to that point.

A. It's really hypothetical because I've really never had a needle break off.

Q. I understand this whole thing is hypothetical for you.

A. Right. Well, there are other issues that factor into it too. If I felt that it was -- I can't tell you for sure. I may have gone out and talked to the parent, I may not have, depending on the kid at the time.

Q. If a decayed tooth is properly treated in a child and a steel crown is placed on it such as in this case, how long will that tooth remain healthy?

A. Boy, is that a loaded question.

MS. HENRY: Objection. Go ahead.

A. Yeah, I mean that's a -- it depends on how much decay was there, what the vitality of the tissue in the root canal is, what your definition of health is, all those things. I mean I can't give you a simple answer to that question.

Q. Say the tooth in this case fell out tomorrow or has to be removed, it was another dentist's opinion that the tooth should be removed tomorrow, would that surprise you?

A. How old is the kid?

Q I'm talking about this particular case, Karla Spehar

A. It was a primary tooth that under normal circumstances would exfoliate probably around the age of anywhere from 10 to 11 years old, maybe. In the absence of any pathology, you know, and I don't know really have much information about that, I believe that he did a pulpotomy technique, which means he took tissue out of the chamber but not out of the roots. And the technique that he used is successful in most cases, but certainly it does fail. And I've certainly had it fail with me. There's no guarantee. And it could well be a function of the, if it had failed, you know, if you do a technique like that and it fails, it's usually indicative of a advanced disease process.

But very honestly it is just sometimes impossible to detect clinically and that's why they fail.

The child was three at the time and she is almost seven now?

MR. BITTEL: Yes, sir.

Q. After you are done using a needle, one of these monoject needles, what do you do

with it?
A. Well, that's changed over time too
MS. HENRY: Objection.
Q. What do you do with it now?
A. It's recapped and it's disposed in a safe container and disposed of.
Q. And prior to recapping it and disposing of it, what was the procedure, what did you do with the needle?
A. It's probably sitting right there.
Q. Did you ever break the needle?
A. No.
MS. HENRY: Intentionally break it are you talking about?
A. I see. Put it in one of those needle cutters or something like that?
Q Right Or just bend it and break it off
A. That would be a stupid thing to do But you would be in violation of OSHA standards. We are not to touch those things
Q. Plenty though?
A Right. The needle is out of site. the whole thing with a chance is to do it and

get it as far gone as you can. We don't use it again normally.

Q. I'm not talking about breaking it in front of the child.

A. We have no reason to do anything with a needle when we are finished with it other than to dispose of it, according to whatever the protocol is.

Q. That's what I was asking about, are you aware of any protocol in which the needle is broken from the hub or shaft?

A. There are needle cutters that people used to use, and I really don't even think they are appropriate anymore. I think that is kind of out of the window now.

Q. How many degrees do you bend the needle when you are performing a mandibular block in a child?

A. I don't bend it.

Q. Well, during the insertion, does the needle bend at all or move off center, off line from the shaft?

A. I'm sure you get a little flex. It doesn't go in directly, but --

Q. That's what I'm trying to get at, how much, if you had to put a little degree to that flex.

A. Gosh, 10 degrees maybe, maybe 15. You are talking about a child that is totally cooperative, not somebody who moves in the middle?

Q. Right.

A. Not an awful lot.

Q. What does asymptomatic mean?

A. Well, without symptoms, means that normally you would say there are no complaints. Typically the child isn't complaining, people differentiate between symptoms and signs. And symptoms might be more subjective. It's what the child would report, if there are no symptoms, the child says it doesn't hurt, it doesn't feel funny, it doesn't feel different.

Q. Is it your understanding that the decayed tooth in this case was asymptomatic?

A. I think that's true. I would have to go back and report that. I don't remember that the child came in in pain.

Q. Does the placement of a steel crown -- what type of crown was placed in it --

A. I think it was a stainless steel crown.

Q. Does the placement of a stainless steel crown require removal of the rubber dam prior to the completion of the procedure?

A. Not necessarily.

Q. Doesn't the placement of a crown usually require some compression by the patient, their top teeth to their bottom teeth?

A. Not necessarily. I mean you can do the same thing. Pediatric dentists who have a good knowledge of the child's occlusion will frequently, particularly when we are in the operating room and doing a lot of things under the rubber dam, will do a number of crowns under the dam and you can compress them with your hand or an instrument and push them down to its appropriate occlusion.

It does occur in some cases that you have a child use their occlusion to put it

together. But it can be either way, there's no right or wrong in that.

Q. Some pressure needs to be placed on top of the crown?

A. To seat it.

Q. To seat it.

A. Yes.

Q. And sometimes that is simply compression by the patient themselves when they bite. On other occasions that's pressure applied by the dentist through some instrument or just their hand; is that correct?

A. Just their finger, you can pop them on pretty easily.

Q. What's the normal procedure to achieve occlusion?

A. The normal procedure is to prepare the tooth, select a crown size and to seat it with your thumb basically, a pediatric dentist you know, one who has done a lot of them, that's basically what you do.

Q. Do you use a drill at all during the restoration of a tooth such as the one Dr. Orchen was doing?

A. Sure, sure you do.
Q. Do you children that you have used a drill with normally have some tension when they hear that drill, Just physical tension in their muscles?
MS. HENRY: Objection.
A. No, I wouldn't say normally.
Q. Do you ever notice that children's -- do you notice any difference in a child's gum tissues or facial muscles when you begin drilling?
A. No.
MS. HENRY: Don't volunteer anything.
Q. Would you agree that a deep incision is outside the area of expertise for a dentist?
MS. HENRY: Do you want to define deep incision for him.
Q. If he needs to. You would use the term "deep incision."
A. No, of course, 1 would not agree with that, no.
Q. So a deep incision can be performed

by a dentist?

A. Sure.

Q. How deep of an incision can a dentist perform?

A. That's an impossible question for me to answer. My gracious. I mean, you know, we don't measure it that way. We don't have curriculum standards that say you go to 15 and stop, you can't go to 16. It depends, common sense here dictates. It depends on your training. And some general dentists have gotten an extensive amount of training in oral surgery and do a tremendous amount of oral surgery, including, it's not so much, this depth of incision thing has very little to do with degrees or how complicated a surgical procedure is. But some general dentists with no advanced training have laid flaps and removed bone and extracted impacted teeth and repositioned teeth and all those sorts of things.

So surgery is a component of a general dentist's education. We mandate that our dental students do surgeries. It's an

accreditation standard that they do surgeries.
Q. Does a dentist normally perform surgery during his normal practice?
A. Sure.
Q. What type of surgeries?
A. Well, extraction of teeth, extraction of impacted teeth, depending on who the person is and their interests.
Q. I guess we should limit it to pediatric dentists because that's what we are talking about.
A. Okay. Pediatric dentists would extract impacted teeth, remove tissue in bone overlying unerrupted teeth. Remove odontomas, an odontoma is like an extra tooth, let's say a supernumerary tooth, extra tooth that's in the midline. And its baby teeth are there but the permanent teeth can't errupt because it's in the way. So the particular procedure is lay back a flap of soft tissue and remove some bone and then remove this thing.
Other surgeries, our residents routinely do all the intraoral lacerations that come into Children's Hospital, tongues,

fragments of tooth that are in lips and things like that, residents routinely do. Removal of benign lesions, things like that.

Q. Are there any muscles in the mucosa in the area that the mandibular block was performed in this case?

A. Sure, yeah.

Q. Are you familiar with the muscle structure in that area?

A. Yes.

Q. And would any oral, excuse me, any pediatric dentists be familiar with the muscles that are in that area?

A. Yes.

Q. Would you feel comfortable performing any surgery that would affect those muscles that are inside the mucosa area?

A. A limited amount, sure.

Q. What does an oral surgeon do that you wouldn't do then?

A. Many things. I mean --

Q. In terms of surgeries in the mouth.

A. Far more complex, complicated surgeries, that's their area of expertise.

think just to say that, just the complexity of the case they were given is far more than a pediatric dentist would.

Q. Do you agree children's behavior is more erratic than adults in your field?

A. It depends on the age of the child and their development, you know.

Q. How about a three-and-a-half-year-old child?

A. Good question. That's kind of the threshold. That's what we teach the students, the 36- to 42-month-old, 48-month-old is really at its threshold at a time from where they transition to a precooperative to potentially cooperative and it can vary tremendously from the same child and with the same child from visit to visit.

Q. What is formo-cresol pulpotomy?

A. It's basically removing tissue, the nerve and the blood vessels from the crown of the tooth, that portion of the tooth that you can see. And then --

Q. How do you do that?

A. You open the tooth with a bur,

b-u-r, and you remove the soft tissue that's inside the tooth.

Q. How do you remove it?

A. Various ways, particularly with a larger bur or a hand instrument. You medicate the tissue that is there and then you fill the chamber with a cement and then in almost all cases after you do that you do a stainless steel crown.

Q. How do you put the stainless steel crown on the tooth?

A. You prepare the tooth down, make the tooth smaller with a dental bur, then you fit a crown on it that fits, put one on that fits.

Q. How do you put a rubber damn in a mouth?

A. You, there's a little clamp that fits around a tooth and you punch a whole in this rubber damn, I'm sure you all know this, and put the hole around the tooth and put the clamp on it to keep the damn from coming off.

Q. I'm trying to heart back to those wonderful moments, where do you put the clamp?

A. On the tooth.

Q. On the tooth that you are restoring?
A. Do you really want to know?
Q. I do.
A. I can show you a picture. It may or may not be the tooth that you are restoring. I don't mean to be short with you. I would be happy to show you this.
Q. Do you know in this case? I'm more particularly interested in this case, if you know.
A. Yeah, I could guess what tooth he's got it on because it's, the clamp has to go on the tooth that's behind or distal to the tooth that you are restoring, or the same tooth. So I assume that the clamp was on the same tooth that he was restoring. That was the lower right second molar, if I'm correct.
Q. Does the clamp, regardless of the tooth it's on, the teeth or tooth behind, does it go all the way down to the mucosa?
A. There it's gum.
Q. Does it touch the gum?
A. It all depends, sometimes they don't, depends on the morphology of the tooth.

Q. And is that normal for the dentist to put the clamp and rubber clamp on or is that the dental assistant's job?
A. Could be either way.
MS. HENRY: Off the record.
(Discussion off the record.)
BY MR. JORDAN:
Q. Was the tooth that was treated here the last tooth in her mouth?
A. Probably, yes.
Q. And that's why it is your opinion that that was the tooth that he clamped?
A. That's right.
Q. And just sort of a last question here, do you have a ruler or anything here that would indicate how much two millimeters is?
A. Sure. This is a little gauge here. These are centimeters and these are millimeters, ten millimeters in a centimeter. So two millimeters comes to just like between the C and the M from here. It's about the, from this line to about the other side of the C.

Q. Would you be able to bring that with you Thursday?
A. I'm not going anywhere Thursday, guys.
Q. We are coming here.
MR. JORDAN: That's all.

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FURTHER CROSS-EXAMINATION

BY MR. BITTEL:
Q. Doctor, I think you indicated that in your injection technique for a mandibular block, the needle might bend about 10 or 15 degrees and I want to -- is that what you said to Mr. Jordan?
A. I'm guessing. I've never thought about it, I've never paid much attention to it. Certainly you don't bend it a lot when you do it. You are talking about the needle itself bending, you are not talking about the angulation I'm entering the tissue, you are talking about once you go in the needle bends.
Q. I'm talking about the bend of the needle relative to the syringe.
A. Yes.

Q. Yes, sir.
A. So it's the needle that's flexing?
Q. Yes, sir. That's what I am trying to determine, so I am clear.
A. I wish I had one of those things, a compass, that shows you how many degrees. The technique is not to go in there and bend over.
Q. Again, you have your book in front of you and I'm looking at page 322, figure 27.7, and what I'm trying to ask and ascertain is when the point of the needle first touches the mucosa, does proper technique call for the needle and the syringe to be injected in a straight line without deviation?
A. Depends on how you define straight line. Pretty much so. I mean there may be a little deviation. But the technique is not to go in and try and leverage a needle. Part of the technique, we are blocking two nerves, blocking the mandibular and also blocking the lingual nerve when we are giving this block. We call it a mandibular block inferior alveolar. But you are in essence doing two different things. You deposit the solution in

a couple of different spots, so that's why I say that there is, frequently we move it around. So there may be some needle bendage doing that, but it's not, I mean it's not a lot.

Q. This is, I understand that in making one of the injections, one of these mandibular block injections, you and any dentist working in a clinical atmosphere, but I want to determine, if my understanding about proper mandibular block injection technique is correct, and when you testified for Mr. Jordan a few minutes ago, it was my understanding that you indicated the needle might flex 10 or 15 degrees during the injection. Is that true?

A. That's what I said and I'm guessing. I'm sure there is some needle flexion. It's just not extensive. You asked me a question that I have difficulty answering. I have never measured it in degrees, so it's hard for me to tell you that.

Q. I'm not trying to conduct a geometry lesson, but certainly there is a, you can

ascertain the difference between a 10- or 15-degree flex and a 45-degree bend?

A. Yeah, I can do that.

Q. Okay. And I'm not trying to be funny in anyway, joking about this.

A. I understand.

Q. Your technique and proper mandibular block technique does not call for the needle to be bent or flexed in the magnitude of 45 degrees during the injection, does it?

A. I have to repeat it, I cannot answer the question in degrees. I'm telling you there's some flexion, and that is a routine part of giving a needle or giving an injection, excuse me. And it would be so much easier if I could sit here and do this and I could get a handle on it. I've never measured it in terms of this. There is definitely going to be some needle flexion. Probably depends a lot on the size of the people. There are a lot of clinical issues. And I cannot quantify how many degrees it's going to bend. I'm sure there's going to be some bend.

Q. Well, let me ask it this way: Do

you, in making an injection, mandibular block injection, contact the bone?

A. Yeah, frequently.

Q. Is that by design or inadvertence?

A. Oh, some people have taught that the appropriate technique is to go to the bone and then to back off and deposit the solution. And I would never say that that's inappropriate. My experience is that when you do that, when you touch the bone, you are touching periosteum and that can be a more painful thing. So I will frequently stay somewhat short of that.

But it's neither, I mean I can't tell you that it's a standard of care not to or that it is a standard of care to. There is certainly nothing wrong with doing it.

Q. Well, do you know of any case that it is acceptable -- strike that.

Is it an acceptable mandibular block technique in a child of Karla's age to inject the needle to hit the bone so that only about five millimeters of the needle is through the mucosa and then to rotate the syringe and the

needle to bring the syringe and the needle parallel to the mandible?

A. Yes.

Q. That's acceptable?

A. Yes.

MR. BITTEL: I don't have any other questions.

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FURTHER CROSS-EXAMINATION

BY MR. JORDAN:

Q. Doctor, I know it's difficult to figure out degrees and you don't have a compass here, I've just drawn a very crude syringe. Could you add a needle to that and show how much the needle would move?

A. No, I really couldn't. I'm telling you I can't do that. I can't give you an idea. It's not something that I routinely think about. And I would have to -- you have to understand my bias as an academician is not to make offhand comments to things like this, but rather to measure them and do them in a repeated fashion. Then you would have facts, but then it would only be conjecture on

my part.

Q. Did you look at the ADA standards where they talk about testing the resistance to breakage?

A. No.

Q. Did you see how much the ADA recommended testing needles, what degrees they --

A. No, didn't read any of that, no.

Q. If needles were tested to see if they could withstand 20 cycles of bending at 25 degrees and the needles passed that type of test, would that strike you as an adequate test of --

A. I don't have any way of commenting on that.

MS. HENRY: Objection.

A. I don't know any of that stuff.

MR. JORDAN: Nothing else.

MS. HENRY: Thank you

MS. HENRY: You have a right to read this transcript, it's between now and Thursday they are going to get it done or not done, but you have the right to read it to make sure

that it is true and accurate before it could be used in court and to examine you.

THE WITNESS: Yes, I would like that.

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Thereupon, the deposition was concluded at 11:10 o'clock p.m.

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_____
DENNIS McTIGUE, DDS

IN WITNESS WHEREOF, I have hereunto set my hand and affixed my seal of office at _____, Ohio, on this _____ day of _____, 1990.

_____
Notary Public in and for the _____

My commission expires: _____

CERTIFICATE

STATE OF OHIO

COUNTY OF FRANKLIN : SS.

I, Kathryn E. Smith, a Registered Professional Reporter and Notary Public in and for the State of Ohio duly commissioned and qualified, do hereby certify that DENNIS McTIGUE, DDS was by me first duly sworn to testify to the truth, the whole truth, and nothing but the truth in the cause aforesaid; that the testimony then given by him was by me reduced to stenotypy in the presence of said witness, afterwards transcribed by means of computer; that the foregoing is a true and correct transcript of the testimony so given by him as aforesaid; and that this deposition was taken at the time and place in the foregoing caption specified, and was completed without adjournment.

I do further certify that I am not a relative, counsel or attorney of either party herein, or otherwise interested in the outcome of this action.

IN WITNESS WHEREOF, I have hereunto set my hand and affixed my seal of office at Columbus, Ohio, on this 13th day of November, 1990.

Kathryn E. Smith

KATHRYN E. SMITH, Notary Public - State of Ohio.

My commission expires January 14, 1993.