

MARKUS PERRY, and his wife, VERONICA PERRY, Plaintiffs, v. THE  
PRESBYTERIAN HOSPITAL, HAWTHORNE CARDIOVASCULAR SURGEONS, and  
DAVID SCOTT ANDREWS, M.D., Defendants.

NO. COA10-150

(Filed 4 January 2011)

**Medical Malpractice - causation - compartment syndrome - genuine  
issue of material fact**

The trial court erred by granting summary judgment in favor of defendants in a medical malpractice case where the evidence established a genuine issue of material fact as to the cause of plaintiff's compartment syndrome.

Appeal by plaintiffs from order entered 8 October 2009 by Judge Richard D. Boner in Mecklenburg County Superior Court. Heard in the Court of Appeals 2 September 2010.

*Ferguson, Stein, Chambers, Gresham & Sumter, P.A., by James E. Ferguson, II, C. Margaret Errington, and Lareena Jones Phillips, for plaintiffs.*

*Shumaker, Loop & Kendrick, LLP, by Scott M. Stevenson, Stacy Stevenson, and Christian Staples, for defendants.*

ELMORE, Judge.

Markus Perry and his wife, Veronica Perry (together, plaintiffs), appeal an order of summary judgment entered in favor of The Presbyterian Hospital (defendant or defendant hospital). After careful consideration, we reverse the order of summary judgment and remand to the trial court for additional proceedings.

**Background**<sup>1</sup>

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<sup>1</sup> Because we review an order of summary judgment *de novo*, we view the evidence in the light most favorable to the nonmoving party. *In re Will of Jones*, 362 N.C. 569, 577, 669 S.E.2d 572, 578 (2008).

Mr. Perry was admitted to the defendant hospital on 14 August 2006 for surgery to repair the mitral valve of his heart. The surgery was performed by David Scott Andrews, M.D., and lasted approximately nine hours, which is an unusually long time for this procedure. Most thoracic operations in hospitals similar to the defendant hospital are performed within three hours, which is considered a "moderate" length of time, and it would be unusual for an operation to last longer than four hours. Dr. Andrews inserted cannulas into Mr. Perry's femoral artery and vein to circulate blood through the heart/lung bypass machine, which maintains oxygenation and circulation while the heart surgery is performed.<sup>2</sup> A femoral cannula blocks the artery going to the lower part of the leg; as a result of the cannulation, blood flow to Mr. Perry's lower leg was reduced. The longer a cannula is in the femoral artery, the longer "it reduces the blood flow to the leg, cuts off the blood flow to the leg, and increases muscle ischemia and ischemia to the tissues." A well documented risk of the reduced circulation associated with femoral cannulation is major damage to the muscles of the leg, resulting in amputation or even death. In particular, compartment syndrome is a high risk complication of cannulating a leg for a long period of time. Compartment syndrome is the compression of muscles, nerves, and blood vessels within a closed space, or compartment, of the body. It is caused by extreme

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<sup>2</sup> When Dr. Andrews removed the femoral arterial cannula, the artery tore in two. Dr. Andrews sewed the artery back together, and he felt "a good pulse distally" after the procedure.

pressure within the connective tissue that separates groups of muscles, called the fascia.

After the surgery was complete, Mr. Perry was admitted to the Cardiovascular Critical Care Unit (CVRU) at the defendant hospital and was cared for by Dr. Andrews and the CVRU nurses, who were employees of the defendant hospital. Mr. Perry was in poor condition following the surgery, and he endured a difficult post-operative recovery period. Among other things, he was on a ventilator with high concentrations of oxygen, he had blood clots in his chest, and he gained about forty pounds of fluid as a result of the bypass. His creatinine level was also elevated, which is a sign of kidney failure.

Mr. Perry was sedated and unable to speak for several days following his surgery. However, two days after the surgery, nurse Sylvia White lifted his sedation and Mrs. Perry told Nurse White that she thought her husband was in a lot of pain. The nurse told Mrs. Perry that Mr. Perry wanted to write something, but that he was too weak, and the nurse would not let him write anything. Nevertheless, Mrs. Perry was concerned and wanted to figure out what her husband was trying to communicate. He pointed down to his leg, and Mrs. Perry thought that he had a cramp. She told the nurse that she thought he had a cramp in his leg, and that that was what he was trying to communicate. The nurse replied that she was glad that Mrs. Perry had "figured it out." However, when Mrs. Perry went to massage Mr. Perry's leg to ease his cramp, she noticed that his calf was "harder than . . . a normal leg." At

some point during the conversation between Mrs. Perry and Nurse White, Mr. Perry indicated with his eyes that he was experiencing pain in his leg. That same day, Mr. Perry's parents were in the hospital room with Mrs. Perry. Mr. Perry's right foot was uncovered, and his father said, "Mark's foot is cold. And it's purple. Look at it." They called Nurse White over to look at Mr. Perry's foot, telling her that it was cold and "purple or blue." Nurse White replied, "that's normal after heart surgery." The Perrys did not talk to Dr. Andrews about the cold, blue foot because Nurse White had reassured them that it was common.

That night, at approximately 1 a.m. on 17 August 2006, CVRU nurse Tim McMurray who was caring for Mr. Perry noted that there was no pulse in his right foot. Nurse McMurray contacted Dr. Andrews's physician's assistant, who then contacted Dr. Andrews. Dr. Andrews determined that Mr. Perry had developed compartment syndrome in his right leg, and Dr. Andrews immediately performed a fasciotomy to address the condition. A fasciotomy is a surgical procedure in which long incisions are made to separate the connective tissue that separates groups of muscles to relieve the pressure within the muscle compartment. Despite the corrective procedure, a lot of the muscle and nerve tissue in Mr. Perry's right leg had already died. Mr. Perry underwent extensive debridement of dead tissue, losing approximately thirty percent of the muscle mass in his right leg. He has permanently lost feeling in his right foot, beginning two inches above his ankle. His right

leg is permanently disfigured and unsightly, and he has difficulty walking.

Plaintiffs sued defendant, Hawthorne Cardiovascular Surgeons, P.A., and Dr. Andrews. In their amended complaint, plaintiffs alleged that defendant was negligent in its care and treatment of Mr. Perry because it "fail[ed] to ensure that its employees, servants, and agents would properly monitor and manage Mr. Perry's postoperative recovery" and defendant's "employees, servants, and agents [failed] to appropriately detect and report Mr. Perry's signs and symptoms of compartmental syndrome and to act upon it before it became an irreversible problem." The amended complaint alleged that the nurses who provided care to Mr. Perry were "employees, agents, or servants of defendant Hospital" and that Dr. Andrews was "an agent or servant of defendant Hospital." The amended complaint also included claims for loss of consortium and emotional distress.

After plaintiffs deposed their expert witnesses, defendant moved for summary judgment. The trial court granted defendant's motion and also granted a stay of proceedings in plaintiffs' case against Hawthorne Cardiovascular Surgeons and Dr. Andrews until plaintiffs' appeal to this Court is complete. Plaintiffs now appeal.

Plaintiffs argue that the trial court erred by granting summary judgment to defendant because the evidence establishes a genuine issue of material fact as to causation. We agree.

Summary judgment is properly granted "if  
the pleadings, depositions, answers to

interrogatories, and admissions on file, together with the affidavits, if any, show that there is no genuine issue as to any material fact and that any party is entitled to a judgment as a matter of law." N.C. Gen. Stat. § 1A-1, Rule 56(c) (2007). This Court reviews an order allowing summary judgment *de novo*.

In deciding a motion for summary judgment, a trial court must consider the evidence in the light most favorable to the non-moving party. If there is any evidence of a genuine issue of material fact, a motion for summary judgment should be denied. The moving party bears the burden of showing that no triable issue of fact exists. This burden can be met by proving: (1) that an essential element of the non-moving party's claim is nonexistent; (2) that discovery indicates the non-moving party cannot produce evidence to support an essential element of his claim; or (3) that the non-moving party cannot surmount an affirmative defense which would bar the claim. Once the moving party has met its burden, the non-moving party must forecast evidence that demonstrates the existence of a *prima facie* case.

*Azar v. Presbyterian Hosp.*, 191 N.C. App. 367, 370, 663 S.E.2d 450, 452 (2008) (additional citations omitted). The essential elements of a medical negligence claim are: "(1) the standard of care, (2) breach of the standard of care, (3) proximate causation, and (4) damages." *Turner v. Duke University*, 325 N.C. 152, 162, 381 S.E.2d 706, 712 (1989) (citation omitted). Here, the only element in question is causation.

Two of plaintiffs' expert witnesses, Nevin M. Katz, M.D., and Robert M. Bojar, M.D., testified during their depositions that Dr. Andrews breached the standard of care by not creating a heightened awareness for compartment syndrome in his notes or by orders to the nursing staff. Dr. Katz also testified that it was a breach of the

standard of care for Dr. Andrews not to lighten Mr. Perry's anesthesia in order to ask Mr. Perry whether he could move his foot, whether he was experiencing pain and, if so, where that pain was. According to Dr. Katz, pain in the leg is a "really important sign[] of leg ischemia and leg impending necrosis[.]" Had Dr. Andrews asked the nurses to lighten the anesthesia and to ask Mr. Perry, "Does your leg hurt," and had Mr. Perry pointed to his leg, then the caregiving team "would have known that muscle was dying and that the compartment syndrome was having an effect. In addition, one could ask him to move his foot, and if he couldn't move his foot, then that would have been an additional indication." Dr. Katz testified that, had Dr. Andrews been appropriately concerned about compartment syndrome, he would have been measuring the creatinine phosphokinase muscle fraction (CPKMM) levels, which rise when muscle dies and are an indicator of muscle death and compartment syndrome. CPKMM levels were very high when they were measured on 17 and 18 August 2006, after the compartment syndrome was discovered, but Dr. Katz explained that if the care team had begun measuring CPKMM levels "early postoperatively, they would have seen the rise in the CPK[MM], and one would have said there is irreversible damage." Dr. Katz testified that it was a breach of the standard of care for Dr. Andrews to fail to order CPKMM measurements. He also testified that Mr. Perry developed kidney failure as a result of the compartment syndrome, and creatinine levels, which were measured postoperatively, suggested kidney failure stemming from muscle death.

Dr. Katz testified that a heightened awareness of Mr. Perry's risk for compartment syndrome "could" have allowed an early fasciotomy. He explained, "Whether it would have prevented most of the damage, I don't know, but I suspect it would have made an important difference." In particular, an earlier fasciotomy would have made an "[i]mportant difference in terms of the amount of muscle that had to be debrided," though he qualified that statement by saying,

I am not able to and I don't know that anybody would know, along the time scale from the time of the operation to the time of fasciotomy, when all the irreversible damage occurred. And all I know is that there were signs it was going on early after surgery, and if we had more laboratory information, we would have been able to pinpoint it better.

Similarly, Dr. Bojar testified that Mr. Perry's compartment syndrome was discovered once his pedal pulse disappeared, which is "an extremely late phase of compartment syndrome[.]" When asked to pinpoint the exact moment that "the cell death in Mr. Perry's leg reach[ed] the point of no return in that nothing was going to make th[e] outcome different," Dr. Bojar explained:

We know that compartment syndromes once they're established, cell death occurs, it's written six to ten hours after that.

So I believe that the initial cell death was occurring most of the 16th [of August] and perhaps starting on the evening of the 15th [of August] because once there is a slight decrease in pulse, that's a very ominous sign because that shouldn't have happened because that's the last thing you see.

So I believe that the progression of ischemia from the reprofusion time and all the different phenomena post-op which is causing



more capillary leak and more fluids caused more compartment syndrome and it [was] evident even on the 15th.

So I believe some irreversible injury was occurring as early muscle necrosis on the evening of the 15th into the 16th.

The following colloquy then ensued between counsel and Dr. Bojar:

Q. So if there is muscle necrosis on the evening of the 15th, if a fasciotomy had been performed on the evening of the 15th, let's just pick a time, at 7 p.m., change of shift, would Mr. Perry's outcome have been any different than it is today.

A. Yes. The reason I say that is it's a progressive phenomenon, that is, the earlier you intervene, you have less damage.

Q. And are you able to quantify that?

A. I cannot.

Q. So what I hear you saying, and I don't mean to belabor the point, but what I hear you saying is in terms of the compartment syndrome, which we know is absolutely irreversible -

A. Well, it's irreversible if it's treated too late.

Q. Right. - your opinion is it could have been as early as the end of the surgery on the 14th?

A. In theory it's possible because of the fact that he complained of pain on the morning of the 15th per Mrs. Perry, that's a sign of ischemia of your nerves and your muscles at that time.

Now, that does not mean that is irreversible damage at that time, but it's a manifestation [o]f inferior perfusion so we don't know the exact progression of how impaired the perfusion became and what the repeatedly [sic] was.

So if one had intervened on the 14th or 15th or even early on the 16th, the amount of damage would have been less, but there would have been damage.

Q. And you're not able to quantify how much damage there would have been?

A. At any point it's impossible to say, it's simply progressive.

\* \* \*

Q. If . . . Dr. Andrews had intervened and performed a fasciotomy on the morning of the 15th, can you say to a reasonable degree of medical certainty that Mr. Perry's outcome would be different than it is today?

A. Yes.

Q. And can you quantify how different the outcome would be?

A. Better.

Q. So the answer is no, you can't quantifi[y] it?

A. Well, I can quantify it in quantum leaps. You can't give an exact percentage because no one knows and anybody that gives you an answer with a number is making it up.

The point is if he is having ischemia on the morning of the 15th with pain, he may be having minimal damage that's irreversible so he may have a fasciotomy and have no damage whatsoever.

When I say damage, I mean clinical damage as opposed to microscopic damage.

Later on the 15th, again, we don't know even though I believe he had some increase in his compartment pressures leading to a compartment syndrome, we can't say it's irreversible at that time either, but it could have been.

But on the 16th I think it would have been irreversible and progressive over the course of the 16th and the 17th. So I know I am sort

of answering your question because I am answering the best I can.

Plaintiffs presented sufficient evidence to raise a genuine issue of material fact with respect to Dr. Andrews's negligence, but whether Dr. Andrews's alleged negligence can be attributed to *defendant* is a different matter.

As this Court has held, under the doctrine of *respondeat superior*, a hospital is liable for the negligence of a physician or surgeon acting as its agent. There will generally be no vicarious liability on an employer for the negligent acts of an independent contractor. This Court has established that the vital test in determining whether an agency relationship exists is to be found in the fact that the employer has or has not retained the right of control or superintendence over the contractor or employee as to details. Specifically, the principal must have the right to control *both the means and the details of the process* by which the agent is to accomplish his task in order for an agency relationship to exist.

*Diggs v. Novant Health, Inc.*, 177 N.C. App. 290, 299, 628 S.E.2d 851, 857 (2006) (quotations and citations omitted). Here, plaintiffs have not provided sufficient evidence that Dr. Andrews was defendant's agent. In an interrogatory answer, defendant said that Dr. Andrews was not an employee of defendant. When asked to produce "a copy of all contracts in effect from August of 2006 through October of 2006 between [defendant] Presbyterian Hospital and any of the other named defendants in this action," defendant objected to the request and then responded, "Subject to and without waiving this objection, this Defendant is not aware of any documents responsive to this request." It is not apparent from the record before us that defendant retained control over Dr. Andrews

such that an agency relationship existed between them. Accordingly, plaintiffs' evidence of Dr. Andrews's alleged negligence cannot be imputed to defendant.

However, plaintiffs also deposed two nursing experts, Frances R. Eason, R.N., Ed.D., and Rosemarie Ameen, BSN, CCRN, CINC. Eason testified that the nursing staff deviated from the standard of care, but she testified that she could not say that these breaches were the proximate cause of Mr. Perry's injuries. Ameen also testified that the nursing staff deviated from the standard of care for various reasons, and that defendant deviated from the standard of care by failing to teach its nurses to recognize the signs and symptoms of compartment syndrome.

Ameen then testified that the nurses' failure to inform Dr. Andrews when Mr. Perry's pulse changed caused Mr. Perry's adverse outcome. Dr. Andrews ordered the nurses to check the pulses in Mr. Perry's feet every four hours. The nurses assessed the strength of those pulses using a scale of one to three, with three being a "strong and palpable" pulse and one being "intermittently palpable." The strength of the pulse in Mr. Perry's right foot dropped from a three at 6 p.m. on 15 August 2006 to a two at 7 p.m. on 15 August 2006. It dropped again from a two at 9 p.m. on 15 August 2006 to a one at 7 a.m. on 16 August 2006. Although Dr. Andrews ordered the nurses to check Mr. Perry's pulses every four hours, there was no record that Nurse McMurray checked the pulse in Mr. Perry's right foot between 9 p.m. on 15 August 2006 and 7 a.m. on 16 August 2006. According to Ameen, "had a doctor been notified

of the change in pulse from three to one at three a.m. on August 15th[,] . . . the outcome for Mr. Perry more likely than not would have been different." However, Ameen later provided conflicting testimony:

Q. But you can't sit here and tell me that more likely than not had Dr. Andrews been notified or someone on his - in his practice been notified at three a.m. on August the 15th that that would have more likely than not altered the outcome for Mr. Perry, can you?

[COUNSEL]: Object to the form. It's already been answered. She's already answered the question.

A. No, I can't tell you that for sure.

Q. Okay. And at any other point that you've opined that the nurses should have notified the doctor with regard to Mr. Perry's condition are you able to tell me that had the doctor been notified at any of those other instances where you believe he should have that more likely than not the outcome would have been different for Mr. Perry?

A. I can't - I can't say yea or nay.

Q. Okay.

A. It's - because I can't - you know, I can't say what the doctor would have done or not done.

Ameen's testimony was inconsistent on this point, but resolving that inconsistency is not appropriate when deciding a motion for summary judgment. *See Draughon v. Harnett County Bd. of Educ.*, 158 N.C. App. 208, 212, 580 S.E.2d 732, 735 (2003), *aff'd per curiam*, 358 N.C. 131, 591 S.E.2d 521 (2004) ("Summary judgment is not appropriate where matters of credibility and determining the weight of the evidence exist."); *see also City of Thomasville v.*

*Lease-Afex, Inc.*, 300 N.C. 651, 655, 268 S.E.2d 190, 193-94 (1980) ("[I]f there is any question as to the credibility of affiants in a summary judgment motion or if there is a question which can be resolved only by the weight of the evidence, summary judgment should be denied.").

Based on the record before us, plaintiffs have raised genuine issues of material fact with respect to their negligence claim against defendant. Plaintiffs' nursing experts opined that the nurses, defendant's employees, deviated from the standard of care. Although Eason testified that she could not state that these breaches caused Mr. Perry's injuries, Ameen *did* testify that the nurses' breaches caused Mr. Perry's "adverse outcome." She also testified that, in her opinion, if the nurses had notified Dr. Andrews of the drop in pulse quality on 15 August 2006, it is "more likely than not" that Mr. Perry's outcome would have been different. Dr. Bojar and Dr. Katz both testified that Dr. Andrews's earlier intervention would have changed Mr. Perry's outcome. Dr. Katz testified that Dr. Andrews could have safely performed the fasciotomy earlier. Although none of the experts could say exactly what percentage of Mr. Perry's injuries could have been averted if Dr. Andrews had performed the fasciotomy one or two days earlier, all of the experts agreed that compartment syndrome is progressive and that earlier intervention would have prevented at least some of the damage to Mr. Perry's leg.

Accordingly, we hold that summary judgment was inappropriate, and we reverse the order of the trial court and remand for further proceedings.

Reverse and remand.

Judges JACKSON and STEPHENS concur.

Judge JACKSON concurred prior to 31 December 2010.