Cath Lab Digest

A product, news & clinical update for the cardiac catheterization laboratory specialist

CATH LAB SPOTLIGHT

UW Health University Hospital

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Tell us about your cath lab and facility.

UW Health University Hospital is a 505-bed facility affiliated with the University of Wisconsin School of Medicine and Public Health in Madison, Wisconsin, in the south central part of the state. University Hospital has been ranked as the top hospital in Wisconsin for the past 11 years and recently received its fourth Magnet designation. The cath lab is part of the Heart and Vascular Procedure Center (HVPC), which includes adult and pediatric invasive cardiology and electrophysiology (EP), along with a prep and recovery area for those patients. The 111-bed pediatric hospital, American Family Children's Hospital (AFCH), is connected to University Hospital by a sky bridge and houses one hybrid lab used for pediatric and adult congenital cath and EP cases.

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In This Issue

Competence, Capacity, Consent – Part of a Successful Pre-Cath Assessment

Morton J. Kern , MD, MSCAI, FACC, FAHA

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CUTTING-EDGE PERSPECTIVES

Selected Proceedings From the 2024 International Andreas Gruentzig Society (IAGS) Clinical Conference

Featuring presentations from J. Dawn Abbott, MD; David Wood, MD; William O'Neill, MD; Jimmy Kerrigan, MD; Toby Rogers, MD; Dmitriy Feldman, MD

Compiled and edited by Gary Rowbury; Laurie Onopa; H. V. ('Skip') Anderson, MD

The International Andreas Gruentzig Society meets biennially to discuss the latest topics in interventional cardiology and related fields. The 17th Biennial IAGS meeting was held from January 30 to February 2, 2024, in Chiang Rai, Thailand. IAGS is an international educational society of physicians and scientists. Society members cooperate in the advancement of knowledge and education through research, publication, study, and teaching in the fields of cardiology and vascular disease. Conference proceedings are published in the *Journal of Invasive Cardiology*, the official journal of the IAGS, and selected presentations are shared herein.

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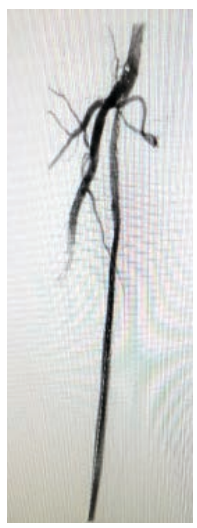
CHRONIC LIMB-THREATENING ISCHEMIA (CLTI)

Treating a CTO of the SFA Using Auryon Laser Atherectomy in a CLTI Patient

Nader Chadda, MD, FACC, FSCAI; Ilyas Chadda

History

The patient is a 77-year-old man with diabetes mellitus, congestive heart failure, and abdominal aortic aneurysm status post repair with stent graft placement, who has been suffering from bilateral foot wounds that have been nonhealing. The wounds have been present for more than six months. The patient has also been experiencing lifestyle-limiting bilateral leg and foot pain occurring at rest and with minimal ambulation for more than six months.



A recent arterial duplex ultrasound of the lower extremities was abnormal, demonstrating monophasic waveforms indicative of a total occlusion of the right superficial femoral artery (SFA). In addition, the arterial duplex ultrasound demonstrated a significant distal left SFA stenosis. The decision was made to proceed with lower extremity angiography and possible intervention.

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Competence, Capacity, Consent – Part of a Successful Pre-Cath Assessment

Morton J. Kern, MD, MSCAI, FACC, FAHA

It's the end of July as I'm writing, and my cardiac cath fellow's experience is still quite limited, as would be expected for a newly minted trainee. We teach the fellows that before each cath procedure, we need to review the patient's electrocardiogram (ECG), chest x-ray, and lab data. We discuss the indications for the procedure which, at times, may not always correspond to the referring physician's or nurse practitioner's history. The fellow then completes the assessment and obtains a signature on the informed consent. We recently had a patient who presented us with a challenge to know whether the informed consent was valid, something I thought we'd address in this editor's page.

Our patient was a 75-year-old asymptomatic man who had a small cancer on his back and was scheduled for surgery under general anesthesia. The patient had treated hypertension, hyperlipidemia, diabetes, and a history of smoking. When asked, he could not recall having chest discomfort or shortness of breath, either at rest or with activity. Moreover, he was not sure about the events leading to his surgical diagnosis, but he was scheduled for a liposarcoma resection sometime in the next month, pending completion of his cardiac work-up. Cardiovascular risk assessment (for anesthesia) was complicated by his inability to describe his physical activity level. For this reason, a nuclear stress test was performed and showed a mixed result, with a negative perfusion scan but a markedly positive ECG with ST depressions 2-3 mm during adenosine infusion. He was then referred to the cardiac cath lab for coronary angiography.

For most patients coming to the cath lab, we presume that they will understand the explanation of the procedure and can give informed consent. However, this is not always true. Some patients may have trouble understanding what will happen, particularly if they have Alzheimer's disease, senile dementia, a stroke, or other conditions that reduces their mental abilities (capacity). To give informed consent, the patient must have the ability to make a legal decision, called competence, and the ability to understand the information and make a rational choice based on the medical information and options presented (consent, terms to be discussed below). If the patient does not have capacity, another person with the patient's power of attorney to make medical decisions will be required to provide the consent for the procedure.

Before every procedure, I speak with the patient, usually in the procedure area while the nurses perform their intake assessment and preparatory tasks (shaving, intravenous line, ECG leads, etc.). By this time, the consent form has been explained and signed. [*NB*: We discussed when and who should obtain the informed consent in these pages several years ago.[1]].

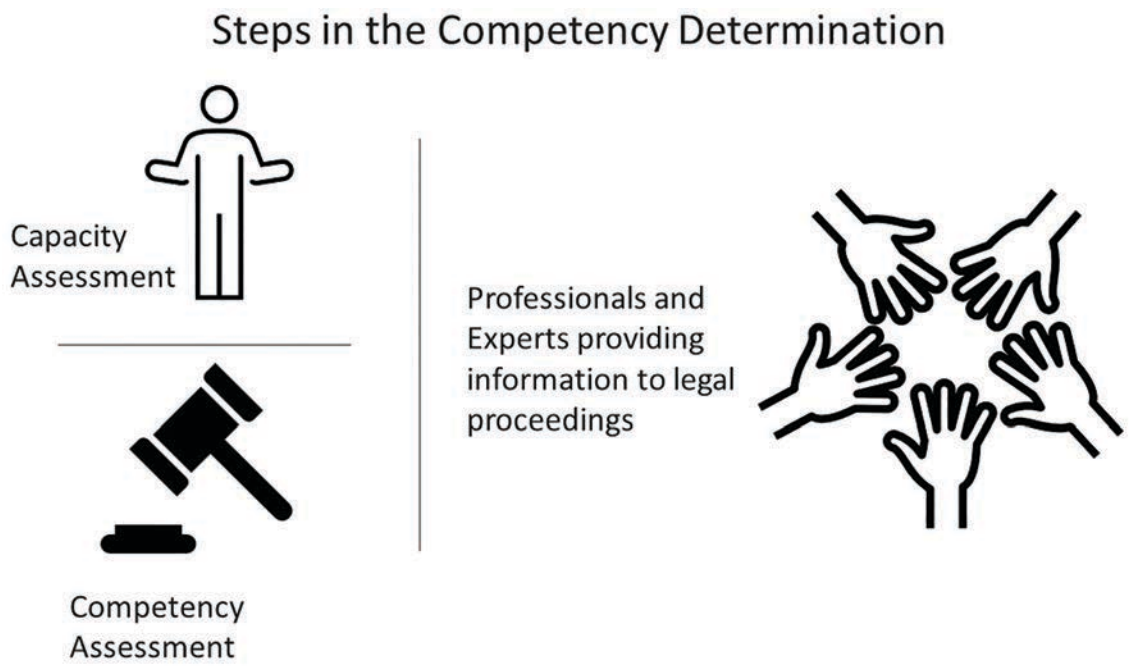

Figure 1. **Steps in the competency determination process.**

After I introduce myself, describe what my job is, and ask how he/she is feeling, I then ask the patient to tell me what we are going to do (ie, what procedure) and why we are doing it. I explain the procedure again, briefly, and state the risks simply and clearly, without scaring the patient. Then to get some gauge of the patient's mental status, I ask him/her to repeat back some of what I just discussed. Sometimes I am very surprised when I encounter a patient who does not understand why they are here, or the procedure that is planned and explained. Does this patient have enough mental capacity to give consent? In the absence of a spouse, family members, or someone with the patient's medical power of attorney, we should pause and consider whether we really have informed consent. In theory, we should never get to this point in the workflow only to find out a patient may not have the ability to give consent. We should never have to ask, "How did such a patient get this far in our series of assessments? Did the referring physician, specialist physician or nurse practitioner (NP), our specialty outpatient care nurses, and our in-lab nurses fail to see what we saw?" In practice, while a rare occurrence, this does happen.

Given our patient scenario, this would be a suitable time to upgrade our understanding of what constitutes a valid informed consent. One can only imagine the consequences of a complication occurring during a procedure in which the patient is later found to have been incapable of providing informed consent. While ensuring informed consent is obtained is principally a physician's responsibility, all those in the patient care chain hold some responsibility to identify and help the patient who does not have the capacity to consent.

What is Informed Consent?

Informed consent is the process in which a healthcare provider educates a patient about the risks, benefits, and alternatives of a given procedure. The patient must be competent to make a voluntary decision about whether to undergo the procedure or intervention, and must have the mental capacity to understand the information and make rational decisions.

What is the Difference Between Competency and Capacity?

Competency is the ability to make a legal decision. Competency is a legal term. Professionals are engaged to determine an individual's mental capacity and then competency. Incompetency is the lack of ability to understand either health care or financial management decisions. In patients thought not to be competent, a series of legal proceedings are conducted, at times leading to guardianship or a conservator appointed by the court (Figure 1).

Components of Mental Capacity

Capacity, on the other hand, is a functional assessment of one's ability to understand a particular

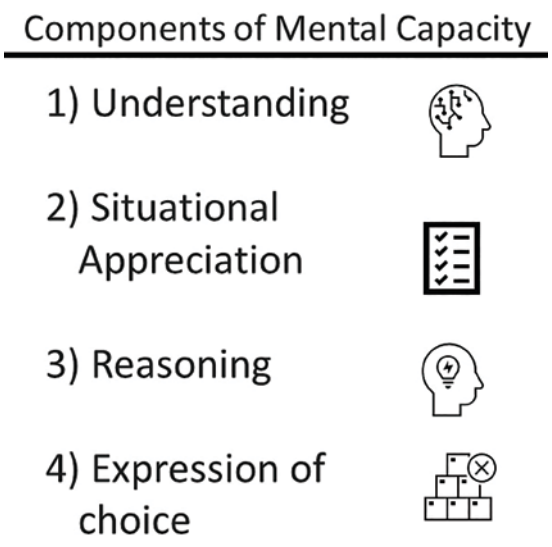

Figure 2. Components of mental capacity.

decision. Capacity can change depending on medical circumstances and is not always a fixed condition. An assessment of capacity can be performed by any clinician familiar with the patient. Capacity is determined by the patient's ability to make a choice, understand relevant information, appreciate the situation and its consequences, and use information in a logical manner. Thus the 4 components of decision-making for healthcare capacity are: (1) understanding, (2) situational appreciation, (3) reasoning, and (4) expression of choice[2,3] (Figure 2).

How did we apply this understanding to our patient described above? Performing a brief interview often reveals the patient's ability to consent. Our patient could not answer simple questions like, "Do you know why you're here today?" He said no, but that he had a lump. "Mr. Smith, do you know what surgery you are going to have?" No. I explained the cath procedure again in the simplest of terms and then the three major risks (bleeding, heart attack, and stroke <1 in 1000). I then asked him to tell me one of the risks. He couldn't recall.

"Mr. Smith, do you have a history of alcohol or drug use?" Yes to both. "Who do live with?" A friend. "Can you take care of yourself?" Sometimes. "Do you know where you are?" Yes.

After my interview, I had concerns over his capacity. The primary care physician, cardiology NP, and nurses in the intake area had raised no concerns. My fellow who obtained informed consent also did not appreciate the fact that this patient may be of diminished capacity. The patient did tell the fellow that he had a problem with his heart. A computed tomography scan showed the liposarcoma, but was also notable for dense calcium in the proximal coronaries, a finding which suggested that the coronary angiogram was necessary to take care of this man.

There were several additional issues that needed to be addressed before proceeding to the cath table. How much cardiovascular risk would anesthesia accept without an angiogram, given the stress test results? Should we postpone his procedure until we have a more knowledgeable expert assess competency? Was a conservator needed? We spoke to the referring physician again, who noted the patient needed the surgery due to the aggressive nature of the tumor.

Should we have canceled the procedure? It would take months to have a custodian appointed to provide informed consent if our patient was truly incompetent and of diminished capacity. This was a difficult decision point and required some more discussion with the patient, who did report some vague chest symptoms, though not consistently. We decided to take his consent as valid and we performed the procedure. How surprised we were to find he had a critical left main stenosis. He was referred to his primary care team with the strong recommendation for revascularization before the surgery.

The Bottom Line

Informed consent is required before cardiac catheterization. The question raised here concerns who is responsible for determining when an individual cannot give a valid consent. Everyone in the patient care chain should obtain some idea of a patient's capacity and if concerned, escalate the problem to the responsible physician team to act before discovering the problem at the last minute. Nonetheless, for an elective cardiac cath, it is almost always safe to defer the procedure until the loose ends around the patient are cleaned up. I hope this page stimulates discussion when a challenging patient shows up in the cath lab. If you see something, say something. ■

Missed one of Dr. Kern's monthly columns? Visit his page on *CLD* to read more:

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1. Kern MJ, with Michaels A, Blankenship J, Moses J, Klein L, Chambers C. Who should get the consent for cardiac cath in your lab? *Cath Lab Digest*. 2018 May; 3(26): 6-8. https://www.hmpgloballearningnetwork.com/site/cathlab/article/who-should-get-consent-cardiac-cath-your-lab
2. Appelbaum PS, Grisso T. Assessing patients' capacities to consent to treatment. *N Engl J Med.* 1988 Dec 22; 319(25): 1635-1638. doi:10.1056/NEJM198812223192504. Erratum in: *N Engl J Med* 1989 Mar 16;320(11):748.
3. Roth LH, Meisel A, Lidz CW. Tests of competency to consent to treatment. *Am J Psychiatry.* 1977 Mar; 134(3): 279-284. doi:10.1176/ajp.134.3.279

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LETTER TO THE CLINICAL EDITOR

Re: Kern MJ. Fasting vs Non-Fasting Status: It's Time to End the NPO Order for Most Patients. *Cath Lab Digest.* 2024 July; 32(7): 6-7.

Dr. Kern,

I read with interest your article regarding NPO status for cardiac cath procedures. The section regarding who to think twice about not making NPO, such as morbid obesity, significant sleep apnea, etc., was very helpful.

There was one sentence I found confusing. It is in the section "NPO for High-Risk Patients", the second sentence:

"An abbreviated fasting regimen of withholding liquids for two hours and solids for six hours before the procedure, permitting the patient to have ad libitum access to fluids and a meal before the procedure, is advocated."

The second half of the sentence seems to contradict the first half of the sentence. Could you clarify?

Thank you,

Ronald Fields, MD, Medical Director, Heart & Vascular Center, St Mary Medical Center, Langhorne, Pennsylvania

Dr. Fields,

Thanks for your note. I am glad that *CLD* has been helpful. You are correct as it was intended to convey that NPO after midnight to the procedure time is too long to go without water. Everyone could skip a meal without trouble, but some eat late and then sleep. This was my poor phrasing.

Ad libitum for both, right up to the procedure (ie, no NPO needed unless the patient is in one of the high-risk groups).

A 6-hour window before the procedure if you ate and 2-hour window for liquids would make our anesthesiologists happy. So far they don't like the ad libitum to time of procedure, but I am advocating for that approach.

Morton Kern, MD