

U-M uses camera to monitor heart attacks

At University of Michigan Hospital, the newest star of the silver screen is the human heart. By watching it perform, U-M physicians can identify both real and potential heart attack victims more quickly and accurately and at less cost than ever before.

The computerized device which takes the motion pictures of the heart is called the "nuclear isotope gamma camera." Armed with four such cameras and four computers, James H. Thrall, M.D., and his colleagues run one of the nation's most versatile and comprehensively equipped cardiac diagnostic units.

According to Dr. Thrall, U-M associate professor of internal medicine and radiology, the new unit furnished improved care both for victims of heart attacks and those who might be headed for one.

"In the instance of a patient rushed to the hospital unconscious or with severe chest pains, the gamma camera helps us identify a heart attack in less than an hour," notes Dr. Thrall. "One day, sometimes two days, may elapse

before the same conclusions can be reached through traditional tests alone, such as the electrocardiogram (EKG) and blood enzyme analysis."

He says the gamma camera does not affect emergency care because these symptoms are so dangerous that the assumption must be "heart attack," and treatment begun at once. But an early confirmed diagnosis of a serious heart attack allows more aggressive use of anticoagulants and other drugs to stave off future crises, such as the often-fatal spells of fibrillation, during which the heart quivers uselessly and stops pumping.

"Further, since two of three suspected heart attacks are false alarms, the gamma camera enables us to more quickly relieve the anxiety of patients and their families, and to begin checking for other, usually far less serious, reasons for the distress," he reports.

The steps involved in seeing the heart via gamma camera are simple enough, although the equipment and medical experience required are formidable.

The camera is positioned directly above the patient's heart. A harmless radioactive "tracer," to which the camera is especially sensitive, is injected into the arm. The tracer mixes with the blood and journeys to the heart, where it is absorbed by healthy heart muscle.

"A healthy heart, having absorbed the tracer-labeled blood evenly and completely, shows up on the screen in its entirety," Dr. Thrall explains. "A malfunctioning heart, however, will have a shadow or black spot where no blood is being absorbed because of blockage (heart attack) or scar tissue."

The unique design of the testing table, which allows the gamma camera to remain focused on the heart while the patient peddles with a minimum of discomfort, is one of several important contributions of the Michigan team.

"At rest, the heart of a person with CAD may function normally," Dr. Thrall explains. "But as the patient peddles, the heart is stressed and demands more blood. A normal heart works better in this situation; arteries supply ample blood. In a victim of

CAD, however, the stressed heart doesn't work better. In fact, its functioning may deteriorate."

Again, the gamma camera will project either a whole, healthy heart that has abundantly absorbed tracer-tagged blood, or a spotty image indicating inadequate blood supply.

"Likewise this condition to that of a car engine that's running badly," Dr. Thrall says. "It seems to be okay until you accelerate, then the engine may miss and sputter, perhaps stall — a heart attack."

Another test, in which the radioactive tracer Technetium is tagged to red blood cells, illuminates blood within the patient's hollow chambers. This gives doctors a slightly different picture of the beating heart and shows them how efficiently it functions as a pump at rest and during exercise. Technetium scans also can be used to diagnose heart attack and coronary artery disease and is superior to radioactive Thallium in evaluating how much heart

can make a diagnosis after a few minutes' observation, he says.

To assure ready availability for those who may need it most, the new unit has been situated among three intensive care units at University Hospital. Two of the cameras are portable and can be brought to the bedside of patients too ill to be moved.

On an out-patient basis, coping with coronary artery disease (CAD) is a primary mission of the unit. "Not only is CAD the leading cause of death in this country, but fully one-

quarter of these deaths are sudden, eliminating any chance of treatment," Dr. Thrall points out. "Therefore, the development of a reliable screening process to spot CAD before it surfaces as a heart attack has been a major national health goal."

Tapping the interdisciplinary resources of nuclear medicine, cardiology, physics, engineering, and nursing, the U-M team has devised a system that Dr. Thrall estimates will pinpoint CAD with an efficiency of about 95 percent.

'People mover' on display

Shoppers and workers in downtown Detroit Tuesday can see a display on the proposed Downtown People Mover by the Southeastern Michigan Transportation Authority (SEMTA).

The display will run from 11:45 a.m. to 1:30 p.m. in the Woodward Room of the Book Cadillac Hotel, Michigan Ave. at Washington Blvd.

SEMTA staff members will show a movie, slides and scale models. The main presentation will run from 12:15-12:45 p.m., but visitors may come and go throughout the open house. Coffee and cookies will be served.

SEMTA General Manager Larry Salci said the open house will "offer the

public an opportunity to comment on the various systems available prior to selection of a manufacturer to construct and design the DPM within a few months."

The people mover is one element in SEMTA's 1990 regional public-transit system. Other elements are major bus expansion, improved commuter-rail service and a light-rail system in the Woodward corridor.

The people mover is expected to carry 71,000 passengers a day, linking travelers to parking facilities, highways, bus routes, commuter trains and the light-rail line. Cars will travel about three miles in a single lane around the downtown, stopping at 13 stations.

Specialty dog show set

The Motor City Specialty Clubs dog show will be held Saturday, Nov. 22, in the Detroit Artillery Armory, 15000 W. Eight Mile east of Northland Center. Puppy sweepstakes start at 9 a.m.

Obedience trials run throughout the day. Adult conformation judging runs from 11:30 a.m. to 6 p.m. Admission is \$2 general, \$1 for senior citizens and children under 12.

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