

Perimortem C-Section Demands Quick Trip to OR

BY BETSY BATES

Los Angeles Bureau

PASADENA, CALIF. — Get a pregnant woman with cardiac arrest to the operating room.

That is where the best hope lies for her survival and that of her fetus, said Dr. J. Gerald Quirk at the annual meeting of the Obstetrical and Gynecological Assembly of Southern California.

"A cesarean section by you in the emer-

gency room 2 minutes after a patient is brought in by ambulance is no better than a C-section by the side of the road by EMTs [emergency medical technicians]," said Dr. Quirk, professor and chairman of obstetrics, gynecology, and reproductive medicine at the State University of New York at Stony Brook.

Potentially reversible causes of cardiac arrest during pregnancy include hemorrhage, trauma, hypoxia, hypothermia, hyper- and hypokalemia, myocardial infar-

tion, metabolic acidosis, and iatrogenic factors such as medication or anesthesia errors. But complex physiologic and metabolic changes of pregnancy can complicate resuscitation.

"Remember, pregnancy is a high flow, low resistance state," he said.

Cardiac output is high, and 30% of cardiac output perfuses the uterus. Systemic vascular resistance is low. Airway management may be difficult. Left uterine displacement is necessary, as is application of

cricoid pressure to avoid aspiration.

There is a need for increased chest wall compression force, "but it can be hard to know what that force is," said Dr. Quirk. "The patient is a risk for fractured ribs and pneumothorax."

In applicable cases, the patient may require aggressive restoration of circulatory volume as well.

The most critical issue is time, he stressed. "If you're going to attempt resuscitation, the best rule of thumb is to do it with the uterus intact for 4-5 minutes," he said.

In the face of declining oxygen saturation—in short, "if things are not going



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DR. QUIRK

well"—urgent preparations should be made for the operative delivery of the fetus. The OR offers three things: bright lights, the proper instruments, and an anesthesia cart. "In most hospitals, it's a very short sprint from ER to some operating room," he said.

In the time it takes to get the patient there, an anesthesiologist and several scrub nurses are likely to be available.

If resuscitative efforts result in restoration of sinus rhythm, "you can always decide not to deliver," said Dr. Quirk.

The imperative to perform a rapid C-section on a mother in cardiac arrest evolved after a pivotal 1982 case in which a 27-year-old primigravida of 37 weeks' gestation failed to respond to advanced cardiopulmonary resuscitation efforts following massive hemoptysis. An effort was made to save the fetus via C-section. Within moments of the delivery, the mother's pulse was detected and both the mother and infant survived without neurologic sequelae.

Several other case reports led to a "strong push" to do emergency C-sections in such patients. However, the setting is important, said Dr. Quirk.

"If one is going to entertain a perimortem C-section in hopes of salvaging both the mother and the fetus, one must first think of salvaging the mother."

"If you're going to undertake a C-section in the emergency room, the [mother's] going to die," he stated. "How are you going to staunch the hemorrhage?"

When the mother cannot be saved, there is still hope for the fetus, but only for a brief time.

Survival of a fetus postmortem, although the stuff of Roman lore, Greek myth, and Shakespeare, has never been actually documented until modern times. Dozens of cases have now been described, but survival of a neurologically intact infant appears to depend on a narrow window of opportunity, with a "break point" of about 15 minutes. Studies suggest that after that point, surviving infants without severe neurologic sequelae are very rare. ■

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