



Members of the Hmong tribes — Southeast Asian refugees dispossessed from their mountain homelands — try to assimilate a new culture while a medical mystery clouds the future of the males: Some are dying of unexplained heart attacks. At left, Chong Vang Yang learns English, the puzzling language of his new country. The 12-year-old students at right do the same thing during a summer session. Above, Somchanh Sanapanya teaches English to adults at a class in a Santa Ana community center.



Photos by THOMAS KELSEY Los Angeles Times

## Refugees' Medical Mystery

# Men of Hmong Dogged by Death

By EVAN MAXWELL, Times Staff Writer

The attacks were all unexpected, fatal and utterly mysterious. The 20 victims — all but one of them young, apparently healthy men — were stricken in the middle of the night, and they died in agony.

Autopsies by some of the best pathologists in the country have been unable to explain the cause of the seizures, at least four of them occurring in Orange County. "We are still baffled," said one medical investigator who has been studying the matter for almost six months.

What is even more vexing is that all of the victims are members of the Hmong tribes — Southeast Asian refugees dispossessed of their Laotian mountain homeland because they backed the United States in an ill-fated war.

These sudden and unexplained deaths are deeply distressing to the Hmongs, fiercely independent and superstitious nomads who did not even have their own written language until 30 years ago.

About 35,000 of the Hmongs have come to the United States in the past five years. Many of them were mercenaries for the CIA during the Vietnam War.

They have settled in Southern California, particularly in Orange County, and in the Minneapolis-St. Paul area, Seattle, Portland and in the highlands of western Montana, among other places.

In several of these places, the mysterious seizures are the leading killers of Hmong adults, according to medical detectives who are studying the problem.

That study, which involves local health officials and investigators from the Center for Disease Control in Atlanta, has not uncovered the cause of the attacks.

But, according to the experts, it has begun to yield information that may help prevent or treat these mysterious attacks that kill in the night.

"We believe they are cardiac in nature, perhaps some kind of spasm or disturbance of the electrical mechanism of the heart," said one doctor.

"We may never know exactly what causes them;

there are so many variables. But at least we may teach the Hmong how to treat and prevent them."

The malady is so new that neither the medical investigators nor the Hmongs themselves have a formal name for it. The refugees have told investigators that such deaths apparently never occurred while the Hmongs lived in the remote highlands of Southeast Asia.

The first documented case apparently occurred in Orange County in 1977 when a healthy young man named Ly Doua died in his sleep.

Joanne Gill, then a county social worker, recalls the death because she knew Ly Doua so well.

"He was such an extreme example because he was so big and robust. And he had been a medic; he was at least sophisticated enough about health matters that he would have known if he was sick."

Gill said she was unable at the time to convince anyone else that the death suggested a problem.

"There was an autopsy which put down the cause of death as 'acute cardiac insufficiency.' That is a fancy way of saying they didn't know exactly what killed him," she said.

Other deaths followed during the next several years and throughout the country. Only in retrospect did authorities begin to pay attention.

"I first learned of the possibility last spring, when I received a call from a reporter in Minneapolis asking whether we had any unexplained deaths among Hmong men," said Dr. Tom Prendergast, Orange County epidemiologist.

"Before I even had a chance to check, I had another call from Portland asking the same question. That was when we began to suspect we had a problem."

What Prendergast and his colleagues found on further study was a total of 20 clearly establishable cases — 19 men and one woman between 25 and 65 who went to bed seemingly well and died during the night.

"All were either found dead in the morning or were observed during the night to be making some

gurgling noises and in a collapsed state from which they could not be revived."

Prendergast said that since the deaths were not attended by physicians, they became coroner's cases, adding, "in all the cases, an autopsy was not able to uncover an adequate explanation of the deaths."

Prendergast said that four of these cases were discovered in Orange County. In addition, two other cases which he calls "possibilities" have occurred but not enough is known about them to say definitively that they were caused by the mysterious syndrome.

The number is relatively limited, even for a community of 7,000, the number of Hmong refugees in Orange County.

"But it becomes more meaningful when you discover that there have only been 13 deaths among Hmong adults in the county in that time," he said. "In other words, it may be that half of all deaths of Hmongs have been caused by this."

When Prendergast and federal public health officials began exploring the phenomenon in the rest of the country, they found similarly alarming figures.

"It was reported in Portland, for instance, that in one year there had been only four deaths among the Hmongs," Prendergast said. "And all four of them were unexplained."

According to Dr. Roy Baron of the Center for Disease Control in Atlanta, the heaviest concentration of cases is in Minneapolis-St. Paul, where between 10,000 and 12,000 Hmongs have settled and where six cases have been reported. Four confirmed cases each have been reported in Orange County and in Portland, and single cases have been reported in Los Angeles, San Diego, Toledo, Lawton, Okla., Seattle and Des Moines.

The extent of the disease has spawned an intensive national study. One of the first concerns was whether the deaths might involve a disease that could be spread from Hmong to other groups. The

investigators have been able to rule that possibility out, they say.

But the search for the cause of the attacks has not been otherwise successful, according to Dr. Baron. "I'm afraid we are still fishing. We are accumulating data which may soon allow us to discard some possible causes, but we have not narrowed the field very far."

This lack of success in explaining the attacks has given rise to widespread speculation about causes. The most widely circulated speculation revolves around the enormous stress or culture shock which the Hmong people are presumed to be encountering in their efforts to adapt to life in the United States.

"It is all but impossible for any of us to understand how much change these people have experienced," said Prendergast. "And there is no question that such change can have fundamental importance to health."

But the medical investigators say that it is all but impossible to chart the effect of stress since it is so hard to measure.

In addition, such stress would have to be more severe on men than on women, if it is to be a viable explanation.

"And besides, the most recent death in Orange County was that of a well-adapted individual — a social worker who participated in the American system and was helping his fellow refugees," said Prendergast.

"He was serving a useful function and appeared to be adapting quite well."

A second possible explanation for the attacks — that they are delayed reactions to gas attacks by the North Vietnamese — is widely held by the Hmongs themselves.

"Most of them believe it is somehow related to the gasings," said social worker Gill.

Hmong leaders have sought in the past several years to draw international attention to the plight of their people by focusing on the alleged cam-

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# HMONG: Mystery Deaths

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paigns of extermination being waged against the Hmongs in Laos.

Gen. Vang Pao, the most powerful single leader in the Hmong community in the United States, has made clear his desire to mobilize international opinion against the Vietnamese. The allegations of gassing have played an important political role in that effort.

But U.S. medical investigators say they have not been able to find any indications that gas attacks might be responsible for the mysterious deaths.

"None of the next of kin were aware that any of the victims had been exposed to gas," said Orange County's Dr. Prendergast. "On top of that, there aren't any known toxic materials that would induce those kinds of delayed effects months or years after exposure."

In addition, he said, the Orange County coroner's office toxicology lab, which has an international reputa-

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## *No indications that gas attacks might be responsible for deaths.*

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tion, found no signs of poisoning in any of the Orange County victims.

"When we don't have an adequate explanation for the deaths, anything is a possibility," he said. "We cannot rule out gassing.

"But we have found no evidence of it either, and one would usually expect that kind of evidence if it were the cause."

Even though gassing and stress do not seem particularly promising explanation of the mysterious deaths, the medical detectives studying the 20 cases say they have made some progress in the past several months.

Dr. Vu Dinh Minh, a U.S.-trained Vietnamese physician who has worked extensively with the Hmongs, said that the cause of death may still be in question, but "it seems relatively clear now that the mechanism is cardiac."

Minh and others say that the victims display the symptoms of some form of heart attack, perhaps a disturbance in the rhythm of the cardiac muscle.

This diagnosis is supported by the discovery of at least one survivor of an attack who was saved by emergency medical aid and hospitalization.

The unidentified victim, a member of the Hmong community in Seattle, has become in effect a living laboratory for the study of the malady.

"When he arrived at the hospital, he was found to be in ventricular fibrillation," said Prendergast. "The heart muscle was contracting without effecting normal beats, just sort of quivering.

"With appropriate treatment, the patient survived and went on over the next several weeks to develop the typical electrocardiogram pattern of a person who had suffered a heart attack."

But, said Prendergast, when the man was examined surgically, he was found to have "no sign of cardiac ar-

tery disease of the type we traditionally would expect with a heart attack."

That suggests that the attacks may involve disturbances in heart rhythm, perhaps spasms which appear quickly and then quickly dissipate without inflicting the kind of long-term damage that might be discovered at autopsy.

It also suggests that victims of the attacks might be saved by emergency medical aid and cardiopulmonary resuscitation.

"Our study also indicates that the deaths may not be as abrupt as we first thought," said Minh, who is also a UC Irvine professor of medicine. "The victims may have as much as 15 minutes before death arrives."

That 15 minutes would be more than enough time to summon help, he said.

"A cardiac mechanism can be handled," Minh said. "It just takes organization and training."

For that reason, he and Prendergast have recommended to the Hmongs that they seek assistance from Orange County health officials and from other sources to begin a CPR training program for the wives and other family members of Hmong men who might become victims.

The Hmongs also need training in the kinds of emergency care available, so that paramedics and others could be summoned quickly to help any stricken men.

"The fact that there is so little evidence of damage to the heart may be a sign that we can intervene with CPR and save lives," said Minh. "But the important thing is that rather than just calling it a mystery, may have a positive way of dealing with the problem."