

# Marshall Islander's Death Tied to Fallout

By WALTER SULLIVAN

The first known death from a disorder typical of radiation exposure has occurred among those subjected to heavy fallout from nuclear weapons tests.

The victim was a 19-year-old Rongelap islander named Anjain, who died last Wednesday of leukemia at the National Institutes of Health in Bethesda, Md., after an intensive effort to stem rapid progress of the disease with chemicals.

Mr. Anjain was one of 64 inhabitants of Rongelap Atoll who were subjected in 1954 to a "snowfall" of fresh, heavy fallout from a hydrogen bomb explosion over Bikini Atoll, 100 miles to the west.

Over the years, the islanders have continued to display apparent effects of their exposure. Two of them, for example, were operated on in Cleveland last week to remove thyroid nodules, which have been a typical manifestation. But until now none had contracted leukemia, which is known to be, in some cases, a long-delayed consequence of radiation exposure.

## Death Rate Is Up

It is estimated that of 284,000 survivors of the atomic bomb attacks on Hiroshima and Nagasaki, about 100 have died of leukemia who would not have had they not been exposed to radiation from the bombs.

Since 1950 the Atomic Bomb

Casualty Commission Japanese-American agency — has been following somewhat less than 100,000 survivors of the bombs dropped on Japan. From their histories the total number of leukemia deaths has been estimated at 330, compared to 230 to be expected in a normal population of equal size.

According to Dr. Gilbert W. Beebe of the National Research Council, a participant in the study, the incidence reached its peak seven or eight years after the bomb blasts. However, he said yesterday, the leukemia death rate cannot yet be said to have returned to normal.

## Islanders Health Checked

For the last 18 years, Dr. Robert A. Conard, a specialist in radiation effects at Brookhaven National Laboratory, and his colleagues have been paying periodic visits to check on the health of the Rongelap islanders. Rongelap Atoll is a necklace of 61 islets in the Marshall Islands.

The most obvious effect of the exposure, Dr. Conard said yesterday, has been the development of thyroid nodules. They have been surgically removed and often found to be of a harmless type. On the last visit, in September, Leko Anjain was found to have a somewhat depressed count of white blood corpuscles.

A follow-up test showed an even lower count and he was flown to Brookhaven, where the diagnosis was myelogenous leukemia. A hospital plane took him to Bethesda, where the most advanced chemical therapy was administered.

He shared a room, at the clinical center of the National Institutes of Health, with Stewart Alsop, the columnist, who was in with lobar pneumonia. Mr. Alsop's column in Newsweek on Oct. 30 was on "Leko and the unusable weapon."

The visit to the islanders in September was delayed six months, reportedly because of suspicions raised by a representative of the Marshallese in the Micronesian Legislature, who charged that the American medical team was not being candid about its mission.

To prepare the way for the September trip two Japanese physicians and another from

Britain were included in the party, and this apparently reassured the skeptics. Had the visit been made earlier, however, it is possible that the leukemia case might have been identified at a less advanced stage.

It was this last visit that disclosed the thyroid nodules removed in Cleveland last week. At least one was found harmless, or "benign." Mr. Anjain and one of his five brothers had had such nodules removed. One brother, at school in Hawaii, was brought to Bethesda as a blood donor during the effort to save Mr. Anjain's life.

Dr. Conard pointed out that it was never possible to fix the blame for the onset of a disease like leukemia. However he said the chances were "fairly good" that in this case it was a result of fallout exposure.

The explosion that showered fallout on Rongelap, when Mr. Anjain was a year old, was the same that rained radiation material on the Japanese fishing vessel Lucky Dragon. However, according to Dr. Conard, none of the 23 men on board have died of radiation-related disease. The device fired over Bikini was reportedly the first deliverable hydrogen bomb.

## 10 Hours of Fallout

The fallout began on Rongelap some 4 or 5 hours after the explosion and continued for 10 or 12 hours. The primary exposure was from particles emitting gamma rays so penetrating that if a person was indoors or outdoors, probably made little difference in his exposure, Dr. Conard said.

Such "close-in" fallout is particularly dangerous because it is still rich in material that decays rapidly and becomes harmless within a few hours. The total exposure of the islanders was believed to have been 175 rads (a dosage unit) which, Dr. Conard added, had not been expected to produce a high leukemia incidence.

In addition to those at Rongelap and aboard the Lucky Dragon, 18 on Ailingine Island were also exposed, but the doses were estimated at only about 69 rads. Any dose in excess of 600 rads is considered almost invariably fatal. The Rongelap islanders were evacuated and they did not return until 1957.

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