



Reflections on Dermatology: Past, Present, and Future
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Remembering Hiroshima and Nagasaki through art

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Abstract Around 75 years ago, two atomic bombs were dropped over Japan, killing somewhere between 129,000 and 226,000 people in the cities of Hiroshima and Nagasaki. From amid the ensuing destruction, there came forth survivors of the blasts who have given us, through their words and art, vivid descriptions of the horrors they endured. This contribution features three works of art that portray two major skin injuries caused by the nuclear explosions: flash burns and acute radiation syndrome. These artworks serve as a remembrance for the victims of Hiroshima and Nagasaki. The art is also a tribute to the courage of the many atomic bomb survivors who have spoken out against the threat of nuclear weapons, sharing with us their vision of peace.

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August 6, 1945: *An atomic bomb explodes over Hiroshima, Japan. By December 1945, between 90,000 and 146,000 people are dead.*¹

August 9, 1945: *An atomic bomb explodes over Nagasaki, Japan. By December 1945, between 39,000 and 80,000 people are dead.*¹

Introduction

It has been almost 75 years since the atomic bombs were dropped over Hiroshima and Nagasaki. From amid the rubble and devastation of those cities came forth the “hibakusha” (Japanese for “bomb-affected-people”). They are the survivors. About 650,000 people have been recognized by Japan as hibakusha, but as of March 31, 2019, only 145,844 were still alive.²

The hibakusha have, through the years, shared with humankind vivid accounts of the horrors they witnessed and

suffered. Through words, poetry, and art, they have sent forth a powerful message against the threat of nuclear weapons and on behalf of peace. Hopefully, we will continue to listen.

As a tribute to the hibakusha, this contribution features three of their artworks, which graphically portray flash burns (Figures 1 and 2) and cutaneous radiation syndrome (Figure 3). Let us pause and reflect on these works of art as we remember the victims of Hiroshima and Nagasaki.

Flash burns and acute radiation syndrome

Death took on many forms during and after the atomic bombings of Hiroshima and Nagasaki. Burns from fires and flash burns caused the majority of deaths, followed by mechanical injuries from falling debris and flying glass.³ Many people were crushed in their homes or in the buildings in which they were working. Acute radiation syndrome was the third major cause of death.

With the explosions of the atomic bombs, an intense flash of light, accompanied by thermal radiation, spread over

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Fig. 1 Created by Haruo Ikegame. (Code GE 16-11). Reproduced with permission of the Hiroshima Peace Memorial Museum.

Hiroshima and Nagasaki, causing flash burns and eye injuries. Many of the people who were close to the blast site were simply incinerated, leaving behind their shadows imprinted on the ground. Flash burns had the following unique features:

1. The burns occurred on the body areas facing the explosion.
2. The burns often formed patterns on the skin that corresponded to the darker portions of a victim's clothing, which burned more due to increased thermal energy absorption.
3. Flash burns often healed with disfiguring keloid formation.

Clinical manifestations of acute radiation syndrome, such as nausea and vomiting, began within a few hours after the blasts.⁴ Other manifestations that developed over the ensuing days and weeks included diarrhea and mucosal lesions of the gums, buccal areas, and throat. These areas turned red and then violaceous in color, which was often followed by ulcerations and necrosis. Epilation, especially on the crown of the head, was a striking finding. Low blood counts resulted in petechiae, hemorrhagic complications, and infections. Loss of appetite, emaciation, and death occurred in severe cases of radiation exposure.

Acute radiation syndrome consists of four subsyndromes: (1) hematopoietic, (2) gastrointestinal, (3) neurovascular, and (4) cutaneous. These subsyndromes occur in various stages,

which can differ in their timing, severity, and prognosis, depending on the extent of radiation exposure. [Table 1](#) summarizes the stages for cutaneous radiation injury.⁵ Late sequelae of radiation exposure in survivors of the atomic blasts include increased risk for leukemia, solid cancers, and basal cell carcinomas.

Artwork by hibakusha

Presented here are the artworks of three atomic bomb survivors:

1. Haruo Ikegame, who was 20 years old at the time of the bombing ([Figure 1](#))
2. Kazuo Matsumuro, who was 32 years old at the time of the bombing ([Figure 2](#))
3. Masato Yamashita, who was 20 years old at the time of the bombing ([Figure 3](#))

They were not professional artists, and they all have since passed away. All three works were made on drawing paper. Ikegame used watercolor, a popular art material in Japan, as well as sumi ink, marker, and pencil. Sumi ink is ground charcoal soot bound with animal glue and is a traditional Asian art medium. Matsumuro used watercolor and marker,



Fig. 2 Created by Kazuo Matsumuro. (Code GE 03-40). Reproduced with permission of the Hiroshima Peace Memorial Museum.

and Yamashita used watercolor. All three images appear to be frozen in time, capturing fleeting moments of horror. The perspectives are all quite close, enhancing the feeling of an intimate but tragic experience that we share with the artist.

Comments by the artists

For Figure 1, the date of the scene is August 6, 1945, the dimensions of the artwork are 42 × 60 cm, and the location is the Yoshijima, Funairi, and Kan-on areas. Haruo Ikegame captioned his work:

These are people who were escaping in the direction of Yoshijima Air Field on August 6. There was a long line of people fleeing, crying for water and thrusting their arms forward. On the side exposed to the flash, their clothes were tattered, their bodies burned, red and festering, their skin peeled back and hanging in shreds.

For Figure 2, the dimensions of the artwork are 27.5 × 38 cm. Kazuo Matsumuro wrote in his caption:

She held her arms out in front to keep the burned, hanging skin off the ground. 1,050 m from the hypocenter/ Yagembori.

Kazuo Matsumuro (32 at the time of the bombing, 61 when he drew this picture).

Explanation in picture:

To prevent their red, exposed flesh from sticking, people thrust their arms in front of them like ghosts. Their skin, like the thin skin of potato, hung from the fingernails, where it was still attached.

For Figure 3, the date of the scene is August 31, 1945, and the dimensions of the artwork are 38 × 54 cm. For the caption, Masato Yamashita wrote:

Younger Brother Who Died While Vomiting Blood
Drawn by Masato Yamashita

Atsumu Yamashita was exposed to the bomb while doing building demolition work in Dohashi. He returned to his home on August 20th. On around the 25th, he came down with a nosebleed, his hair fell out, and small red spots appeared all over his body. On the 31st, he died while vomiting blood.

Conclusions

Almost 75 years after the bombings of Hiroshima and Nagasaki, we pause to remember the many lives lost and the

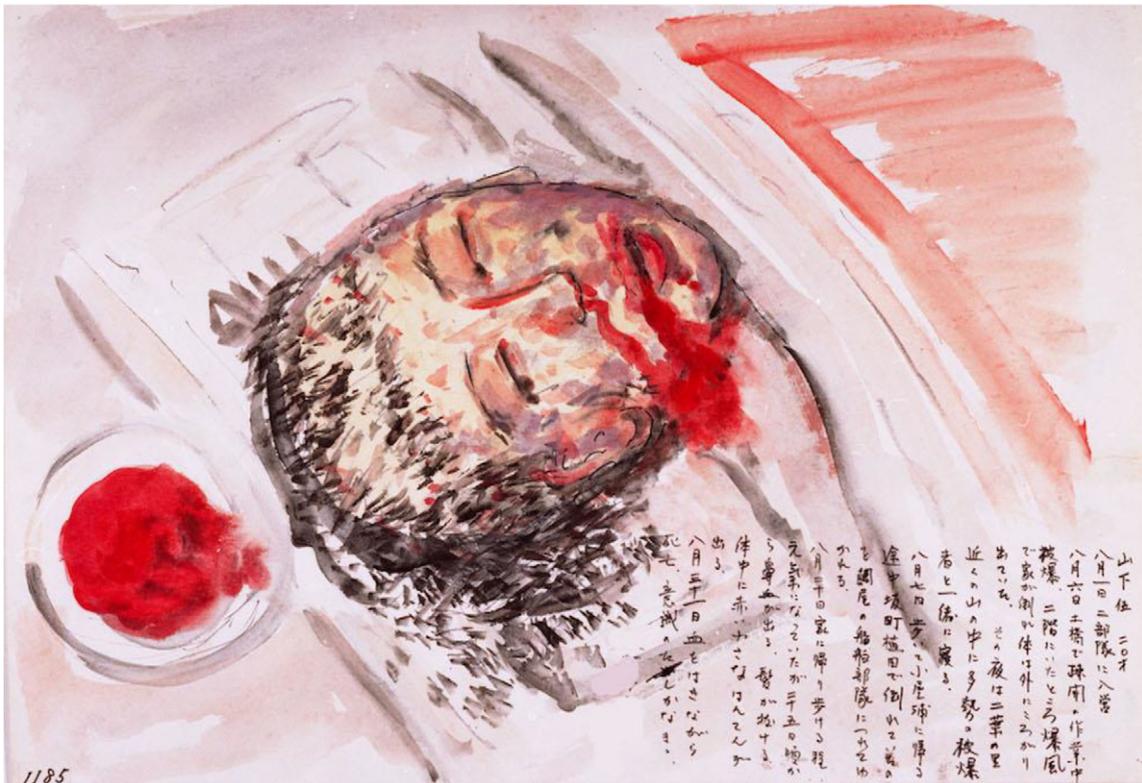


Fig. 3 Created by Masato Yamashita. (Code GE 06-36). Reproduced with permission of the Hiroshima Peace Memorial Museum.

terrible ordeal they suffered. The artwork seen here, as powerful as it is, provides but a small glimpse of the horrors of nuclear war and the impact it leaves on its victims' skin. The full pain and suffering of Hiroshima and Nagasaki are beyond any possible description; nevertheless, we must try to listen, even after 75 years, to the message of the hibakusha. It is not just a message of warning, but one of hope:

1. A hope that we can learn as fellow human beings to co-exist in peace.

2. A hope that no future generation will endure the curse of nuclear war.
3. A hope embodied in a poem from the survivor Sankichi Toge (1917-1953) inscribed on a monument in Hiroshima and translated into English by Miyao Ohara:

Give Back The Human

Give back my father, give back my mother;
Give grandpa back, grandma back;

Table 1 Stages of cutaneous radiation syndrome

- 1) **Prodromal stage:** Early erythema, heat sensation, and itching. Duration of 1 to 2 days.
- 2) **Latent stage:** No injury is evident for a variable time, usually 1 to 2 days post exposure. The skin of the face, chest, and neck will have a shorter latent stage than will the skin of the palms and soles.
- 3) **Manifest illness stage:** Erythema (second wave), heat sensation, slight edema, often accompanied by increased pigmentation. This may be followed by dry desquamation or ulceration to necrosis, depending on the severity of radiation exposure. Epilation can occur at this stage. This stage occurs days to weeks postexposure.
- 4) **Third wave of erythema:** Late erythema, blood vessel injury, edema, and increasing pain. A distinct bluish color may be observed. Epilation may subside, but new ulcers, dermal necrosis, and dermal atrophy may occur. This stage occurs 10-16 weeks postexposure.
- 5) **Late effects:** Signs may vary from slight dermal atrophy to continual ulcer recurrence, dermal necrosis, and deformity. Possible effects include occlusion of small blood vessels with subsequent blood supply disturbances (ie, telangiectasia formation); destruction of the lymphatic network; regional lymphostasis; and increasing invasive fibrosis, keratosis, vasculitis, and subcutaneous sclerosis of the connective tissue. Pigmentary changes and pain are often present. There is increased risk for skin cancer. This stage occurs over months to years post exposure.
- 6) **Recovery:** Occurs over months to years.

Source: Centers for Disease Control and Prevention.⁵

Give my sons and daughters back.
Give me back myself.
Give back the human race.
As long as this life lasts, this life,
Give back peace
That will never end.

Acknowledgments

The artwork (Figures 1-3) was provided by the Hiroshima Peace Memorial Museum. The Hiroshima Peace Memorial Museum requests that readers do not download or extract the images to a third party from the website, E-book, or other electric medium for free use. Please contact the museum for permission to use these images at the following url: hpmuseum.jp/?lang=eng. Ms. Rie Nakanishi, Curatorial Division, Hiroshima Memorial Peace Museum, provided background information on the artists and artwork. Carla Stansifer, Curator of Japanese Art at the Morikami Museum and Japanese Gardens, Delray Beach, Florida, provided information on Japanese art as it relates to the Hibakusha artworks.

Conflict of Interest

The author declares no conflict of interests.

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