

## Dr. Rabl' s opinion (2)

Questions 12-17 by defense counselors and answers by Dr. Rabl

Please answer the following additional questions Q12 – 17.

In 1955, the Supreme Court in Japan adjudged that judicial hanging was not cruel punishment. Though the decision never showed the reason for its conclusion, it seems to be very probable that its scientific and forensic medical grounds were on the written opinion by Tanemoto FURUHATA , MD, in 1952, who was professor of forensic medicine at Tokyo Medical and Dental University and ex-professor at Tokyo University at that time.

Dr. Furuhashi enumerated 5 execution methods in his opinion. After mentioning shooting(“with remarkable damage to a body by penetration of bullets”), beheading(“resulting in a ghastly scene with a head-trunk separation and massive bleeding”) , electrocution (“not being regarded as an ideal method today”) and lethal gas (“being said to be most humane because of an instantaneous and least painful death”) briefly, he went into hanging.

He made reference to the article (Deutsche Zeit. Ges. Gericht. Med. vol.11 p.145 1928) by Dr. Schwarzacher who was professor of forensic medicine at Wien University as of the year 1952. Dr. Furuhashi said, “Dr. Schwarzacher states in his article that when the ligature runs symmetrically toward the posterosuperior region and when intravascular pressure is 170mmHg, 3.5kgw force is needed for occluding the carotid arteries and 16.6kgw force is needed for obstructing the both vertebral arteries by compression.” And Dr. Furuhashi continued, “Therefore, being suspended by a ligature around the neck with constricting force of the body weight (hanging), the body weight over 20kg will make it possible to obstruct the bilateral carotid and the both vertebral arteries completely by compression. He shall faint away and lose consciousness at the very moment when the body weight is put on the neck. Thus it is commonsense in the field of forensic medicine that typical hanging is comfortable way of death with the least pain and suffering. There, however, shall be some differences in the dying situation, between when the ligature around the neck is a kind of flexible fabric and when the ligature is of hard material such as a hemp rope or an ordinary rope. Using a soft fabric as the ligature shall be able to give a far easier death, comparing using a hemp rope or ordinary rope. From the forensic medical point of view, among above-mentioned 5 execution methods, using hydrocyanic acid gas or hanging is considered to be the best as the method giving a condemned inmate little pain and instantaneous death.

If, however, the actual execution method in Japan is carried out without full understanding of this forensic medical principle, I guess there will be a non-ideal part in the dying situation. If the hanging is executed ideally, I believe that it is superior to the other execution methods in regard to not making damage to the corpse, not giving pain (except for mental one) to the inmate, and not leaving the sense of cruelty after death.”

And he mentioned the time it takes from the start of the execution to the death of the inmate for each of the 5 execution methods.

Dr. Furuhata’s conclusion of his opinion was as follows: “From the medical point of view, hanging which is actually carried out in Japan is not cruel, compared to the execution methods which are actually carried out in other countries. However, there is room for improvement in the details of this execution method. Though beheading and lethal gas shall result in death immediately after the start of execution and in hanging the inmate shall lose his consciousness just after the drop and shall not feel any pain at all, the heart shall still keep beating slightly and irregularly for about 10-30 minutes.”

Q12. Considering from the viewpoint of current forensic science, are there any respect to be corrected or to be added in the above-mentioned experiment performed by Dr. Schwarzacher in 1928? If any, please explain them.

The forces mentioned by Schwarzacher are correct.

Q13. Considering from the viewpoint of current forensic science, are there any respects to be corrected or to be added in the above-mentioned opinion written by Dr. Furuhata in 1952? If any, please explain them.

The text passages marked in red (Translator’s note : the passage are marked with underline in this text) are definitely wrong. In hanging unconsciousness occurs not “at the very moment”, because even if the blood circulation in the brain stops immediately there is a lot of oxygen left in the brain – enough for at least few seconds of consciousness. See the experiments of Rossen et al. (Rossen R, Kabat H, Anderson JP (1943) Acute Arrest of Cerebral Circulation in Man. Arch Neurol Psychiat 50:510-528). The authors used a blood pressure cuff around the neck of young men (n=111) to compress the neck structures. Using a pressure of 600 mmHg the test subjects lost consciousness in 5 to 10 seconds. Immediately afterwards general seizures occurred. Most of the people reported pain of different characteristics and intensity. Dr. Furuhata did not take into account the painful period of consciousness. In the article of Rossen et al.

the test persons to some extent described serious pain.

Ministry of Justice had disclosed the several photographs of the execution chamber at Tokyo Detention Center last summer. We have attached them (ref.13). Please examine them. Through the disclosure, the height of the trap door was proved to be about 4 meters as ref.10 had reported.

Q14. From your article, we have understood that if the drop is short and a thin and hard ligature like steal wire is not used in JH, decapitation will hardly occur owing to the shortage of falling energy put on the neck. Is this correct?

**Yes.**

Q15. Is the 4 meters height of the trap door at the Tokyo Detention Center high enough to generate the marginal force of 12000 Newton which can cause decapitation? If necessary, please explain on condition that the rope is not so elastic and the body weights (BW) of the inmates are 65.8 kilograms (the average body weight of Japanese male older than 19 years old in 2007) and 100 kilograms (our client's BW).

**Yes.** As you can see in fig. 5 of our article, decapitation can occur even if the falling height is lower than 4 meters. The critical factor is the distance of deceleration (factor s).

Q16. After examining the photographs, do you change your opinion that there will remain high risks of decapitation or slow strangulation with consciousness in Japanese JH (answer to Q7)?

**No.** As one can see, in the situation of the Japanese execution chamber the falling height would be at least 4 meters.

Q17. This is the confirmation of the meaning of your answer to Q7. You stated that an "accurate" drop table may reduce the risk of DC, on the one hand, but on the other hand, lower falling heights (rope lengths) increase the risk of slow strangulation with consciousness (SSC). Do you mean that because an "accurate" drop table may give lower falling heights, it may reduce the risk of decapitation, but at the same time a lower falling height (rope length) increases the risk of SSC since SSC may occur independently of the falling height?

**Yes.**