

Dr. Rabl's Opinion(1)

Questions 1-11 by defense counselors and answers by Dr. Rabl

Please give us your answers to the following questions. Concerning the style of the answers, we request you to answer Q1 at first; regarding the other questions, you can choose either to answer the questions one by one, or cover the all of the questions comprehensively in one integrated answer. Thank you again for your consideration.

Q1. Could you please write about your career and achievements (books and articles, etc) as a forensic scientist?

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1977 - 1983 study of medicine Leopold-Franzens-University Innsbruck

1983 - 1989 medical specialisation Institute of Legal Medicine Innsbruck
(GMI)

1985 apprenticeship for public health officer

since 1992 officially certified and authorized expert for forensic medicine,
including forensic toxicology and biological stains

1991-1992 Institute of Forensic Medicine St.Gallen, Switzerland; public
health officer for the city of St. Gallen

1998 postdoctoral lecture qualification (Theme: "Injuries caused by

cardiopulmonary resuscitation”)

1986 - 2000 GMI department of biological stain analysis; since 1997 National DNA Database of Austria

since 2000 GMI department of forensic toxicology (since 2002 accredited laboratory according to ISO/IEC 17025)

since 2004 president of the Austrian Society of Forensic Medicine (ÖGGM; www.oeggm.com)

actual position Vice director of the Institute of Legal Medicine Innsbruck

Q2. Is it possible that decapitation (DC : including complete and incomplete one) of a hanged person would occur in judicial hanging(JH)? If so, under what conditions could it occur? What kinds of studies and researches have you made concerning hanging with DC? Please explain your methods and results. (We have attached files No.1 – 7.)

Yes. The risk of decapitation depends on several factors: length of the rope; flexibility of the rope; weight of the hanged person; thickness of the rope; position of the knob; ...

Based on a case of complete decapitation caused by suicidal hanging we did biomechanical experiments and calculations concerning the forces needed for a complete decapitation. By adding the tensile strengths of neck skin (150 Newton/cm), native cervical spine (1000 Newton) and neck muscles (e.g. M. sternocleidomastoideus – 80 Newton) we found the critical value for decapitation at approximately 12000 Newton. Then we calculated iso-force-curves for 12000 Newton depending on the body weight and rope length. Elasticity of the rope and elongation of the rope length caused by tightening of the loop were expressed as the factor s (distance of deceleration). The article was published in 1995 (Rabl et al.: Erhängen mit Dekapitation. Kasuistik – Biomechanik. Archiv Kriminologie 195:31-37)

Q3. Royal Commission on Capital Punishment (1949-1953) in UK reported that ‘a man might be given too short a drop and die slowly of strangulation ‘(ref.7). Is it possible that slow strangulation with consciousness (SSC) of a hanged person would occur in JH?

Yes. This would be a typical cause of death. An immediate death caused by displaced vertebral fracture with compression of the medulla oblongata is the exception of the rule in cases of judicial hanging.

Q4. You mentioned 'the variability of the causes of death by hanging'(Radiology Vol.196 no.3 p.615). Could you enumerate every possible cause of death which could happen in JH?

- Asphyxia caused by compression of cervical veins and arteries;
- slow asphyxiation caused by occlusion of the pharynx (1-2 minutes of consciousness are possible in the case of asymmetrical strangulation);
- decapitation;
- cervical fractures with compression of the medulla oblongata (rare);
- acute cardiac arrest caused by injury of the vagus nerve

Q5. It is often said that the death caused by JH is 'almost instantaneous'. Is it true? Please show us the reason of your answer too.

Death caused by judicial hanging only exceptionally is “almost instantaneous” – when the medulla oblongata is severely injured. In the case of complete occlusion of the cervical arteries (Carotids and vertebral arteries) it lasts for 5 – 8 seconds until unconsciousness occurs. In the (rare) case of severe irritation of the nervus vagus with following cardiac arrest the period of consciousness lasts for approximately 10-12 seconds. If not all cervical arteries are compressed (typical in judicial hanging because of the asymmetric position of the rope!!), the period of consciousness may last for up to 2-3 minutes.

Questions Q6 - 9 below are about JH in Japan. The Supreme Court has confirmed the validity of Decree No.65 in 1873(ref.9). If actual JH has been carried out according to the decree, there is no room for carrying out executions based on ‘a drop table’. But it is not clear whether they actually use the table (or something like that) or not. We can say, no drop table is adopted at least officially in Japan.

Q6. We have attached two news stories of Japanese newspapers reporting an accident during the execution of JH with incomplete DC on July 6, 1883 (refs.1 and 2). Could you infer the cause of this accident?

The newspaper articles describe a case of incomplete decapitation during judicial hanging. Most likely this accident was caused by a combination of a too long rope (fall height) and a high body weight of the prisoner. A higher tightness of the rope with little flexibility could have been a promotive factor.

Q7. In case where JH is carried out according to the law(ref.8) and the decree(ref.9) at the present gallows with the trapdoor of the height of about 4 meters in Japan(ref.10), do you think there are any risk of DC and SSC? Do you think that the risks of DC and SSC in Japanese JH are as the same level as those in countries where they use the drop table? Please explain the reasons of your answers.

Of course with this preconditions in Japan there will remain high risks of DC or SSC. An “accurate” drop table may reduce the risk of DC on one hand, but on the other hand lower falling heights (rope lengths) increase the risk of SSC. There are several other important factors beside falling height and body weight that influence the injury patterns of judicial hangings, e.g. mechanical properties of the rope; anatomical differences; kind of knot; ...

It has been shown, that the length of the drop does not produce expected or consistent results (Reay et al. Injuries produced by judicial hanging. Am J Forensic Med Pathol 1994; 15:183-186)

Q8. Do you think that both risks of DC and SCC in JH of an inmate with 100 kilograms or more weight (like our client) are the same as those of a man with 69.1 kilograms (the average body weight of Japanese male at the age of 40-49 in 2005)? Do you think they can give 'proper' drops to all condemned inmates over the weight of 100 kilograms (ref.11 and 12)? Please explain the reasons of your answers.

There is no possibility to derive “proper” drops from the body weight only. There are several other factors that affect extent and direction of the resulting forces. Even if one could calculate the exact forces, it cannot be anticipated which effect this forces would have on a specific individual.

Nokes et al. stated in 1999, that there is no clear cut-off point between DC, immediate unconsciousness due to spinal cord disruption and death following a period of apparent consciousness (Nokes et al. Biomechanics of judicial hanging. A case report. Med Sci Law 1999; 39:61-64)

Q9. Do you think that an official adoption of a drop table or any other scientific reforms can

eliminate both risks of DC and SSC from JH in Japan? Please explain the reasons of your answer.

An official drop table cannot eliminate the risks of DC and SSC, because such a drop table cannot include all factors that contribute to the injury patterns.

Q10. Could you explain the cruelty of JH you think, if any? Could you compare it with that of shooting and lethal injection?

Any method of death penalty in my opinion is cruel and incompatible with the Hippocratic oath, physicians in Austria are committed to take on graduation day. Judicial hanging is an exceptional example of cruelty because there is no scientific possibility to predict the effects of JH on a specific person. In most cases of judicial hanging death will occur not instantaneously but after a period of consciousness and therefore unnecessary pain and harm to the person concerned.

Q11. If you have anything to say about JH as a forensic scientist, please write it freely.

My personal opinion is that death penalty should be abolished all over the world. Judicial hanging is a barbarous archaic method of execution that in many cases leads to unnecessary and unpredictable periods of consciousness associated with inhuman tantalization of the convicted.

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