

■ EDITORIAL ■

Incident of "Human Cloning" from Kyunghee University Medical Center

On December 14, 1998, Korean media reported that "human cloning" by transfer of somatic cell nucleus, undertaken by a research team of Kyunghee University Medical Center in Seoul, was successful in developing to four-cell stage. The Korean Academy of Medical Sciences (KAMS) organized an ad hoc committee and entrusted the committee with a hearing and examination process of the reported "human cloning" experiments. The committee was chaired by Professor J-S Seo (Biochemistry) in Seoul, with members of Professor W-S Hwang (Veterinary obstetrics) in Suwon, Dr. K-K Lee (Animal reproduction) in Taejon, and Professor SY Moon (Assisted reproductive technology) in Seoul, Korea. On January 20, 1999, the committee submitted to KAMS a formal report, which reads,

"For three hours from 9:30 a.m. to 00:30 p.m., December 24, 1998, the committee heard and examined processes of the "human cloning" experiment.

The research team, consisted of Dr. SB Kim, Professor of Obstetrics and Gynecology, Dr. BY Lee and Mr. JT Doh of Kyunghee University Medical Center, tried cloning experiments of human embryo twice. The first experiment was done on November 20, 1998. From a patient, who visited the Medical Center to receive in vitro fertilization therapy, a total of 23 ova was collected. Of them, three ova, not used in in vitro fertilization, were subjected to nuclear removal experiment. However, it was stated that nuclear transfer was not performed because cytoplasm of ova was spilled out through a slit made at zona pellucida.

Human embryo cloning was tried again on December 7, 1998. A total of 16 ova was collected from another patient. Of them, three ova were subjected in the same type of experiment. One ovum was discarded because of poor condition. Of the two ova, one was discarded because about 50% of its cytoplasm was aspirated during nuclear removal. Only one ovum was stated to be successful in nuclear removal and transfer of nucleus to the enucleated ovum. After incubation, the cloned ovum was stated to develop into four-cell stage embryo. In summary, the research team used only one human ovum for the entire cloning experiment and they released this finding to the public media.

The committee asked the research team to show objective evidence of the nucleus removal and development of embryo from the cloned ova. However, the research team did not disclose acceptable evidence to the committee.

Based on these facts, the committee was unable to confirm the human embryo cloning was successfully undertaken to four-cell stage. This is a unanimous conclusion of the committee members."

At a press conference on January 29, 1999, the Korean Medical Association (KMA), after receiving the KAMS' report,

expressed deep concern on the allegedly successful "human cloning" experiment. KMA announced also the following standpoints. " --- KMA recognizes that techniques of biomedical engineering has proved their value in improving human welfare. Scientifically, human embryo research has been recognized as having potency in cure of some hitherto untreatable human diseases. However, these techniques should be applied under approved study designs and processes as well as under strict ethical considerations. Unless these scientific and ethical processes are complied, these kinds of studies may result in serious problems for dignity of human being. Unauthorized studies using human embryo and/or release of their results to public media can misguide people. In the nearest possible future, KMA will prepare "Guidelines in human cloning and bioengineering re-searches". KMA will support actively such researches, but will exclude possibly dangerous and unethical researches and therapies. Finally KMA asks its members and related scientists to stop any experiment using human ova until the above-stated guideline is promulgated. ---"

In addition to science and ethics, the present incident again raised an issue of the relations between medical science and public media. In a country like Korea, where health care demand is high and research investment is relatively low, "first in Korea" has a hot local news value and has been utilized by some health personnels and institutions. The current experiment was reported also to be the first success in Korea. In a later interview, Professor SB Kim said that the team misunderstood the experiment to be the world second, and the misunderstanding was the main cause of sensation worldwide. This statement reveals explicitly the researcher's ambivalent attitude in dealing science. On top of that, Dr. BY Lee of the team mentioned in interviews including with *Science*, that the work was done for academic purpose, and they released it to public media to inform other scientists. However, most Korean scientists believe this statement did not make any sense. If this was true, why did not the research team release their results in a press conference after publishing in a peer-reviewed science journal?

The Korean Academy of Medical Sciences' standpoint is now clear. KAMS believes human embryo research is necessary to expand knowledge on human reproduction. However, like atomic energy, human embryo research has been a subject with complex scientific, ethical and political issues. This is the reason why the human embryo research should be done in a well-controlled manner in every aspects. Indeed, a groundless world first experiment of "human cloning" is not a pride to most Korean scientists.

The Korean Academy of Medical Sciences