



OVERVIEW OF TWENTY YEARS OF RADIATION AND TISSUE BANKING ACTIVITIES IN ARGENTINA

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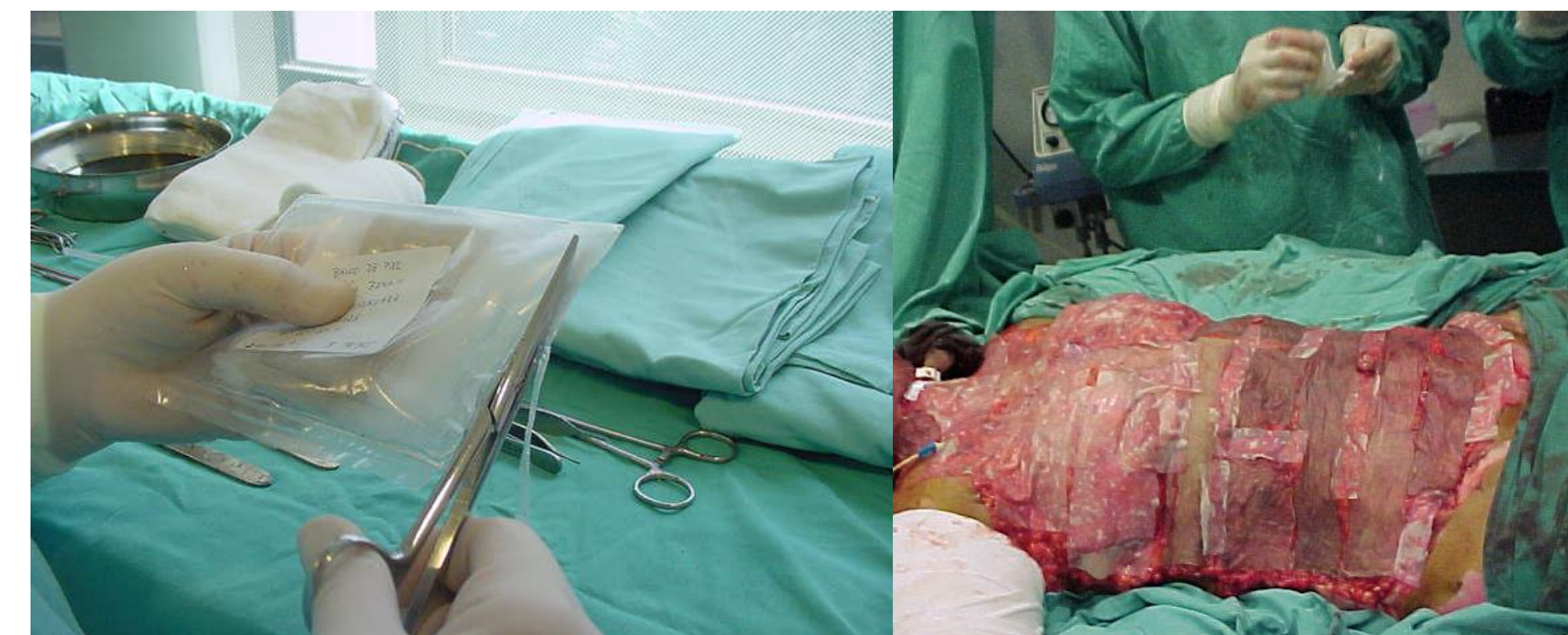
INTRODUCTION

Radiation technology was implemented industrially in 1970 when the first multipurpose gamma facility was built at the Ezeiza Atomic Center of the National Atomic Energy Commission (CNEA). Radiation sterilization of human tissues in Argentina was a consequence of health care products sterilization by gamma radiation.

RADIATION & TISSUE BANKING

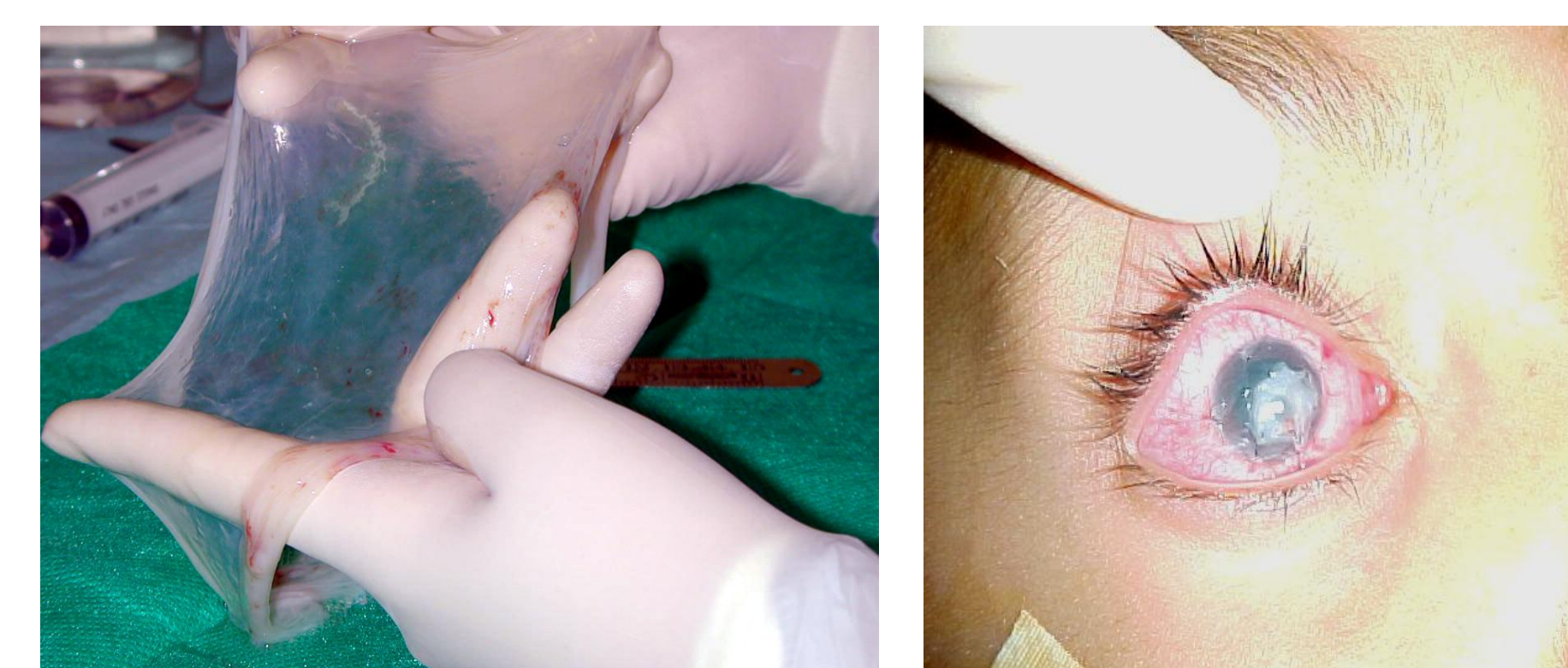
Organ and tissue transplantation is a well established effective therapy that saves lives and significantly improves the quality of life. Ionizing radiation is used for sterilization in order to provide clinically safe human tissue for therapeutic purposes. Argentina radiation and tissue banking activities started in 1993 with the establishment of two tissue banks (skin and bone) using gamma radiation under a Technical Cooperation Program of the International Atomic Energy Agency (IAEA). At present eight tissue banks use gamma radiation for sterilization of human tissues (6 musculoskeletal, 1 skin and 1 amniotic membrane), the compatible tissues with this methodology mainly are skin (frozen, glycerolized), bone (lyophilized, frozen), and amniotic membrane (glycerolized, frozen, dehydrated).

Argentina has participated actively of several IAEA radiation and tissue banking projects and it has been selected by the IAEA to host the Regional Training Center for the Latin American Region. The activities implemented were: regional and interregional training courses in Buenos Aires, face to face (five) and virtual (four) modalities; participation in the elaboration of several materials related to tissue banking and radiation sterilization of tissue allograft, codes of practice for radiation sterilization of human tissues and recommendations for the operation of tissue banks.



Radiation sterilized human skin for burn treatment

Alberto Bolgiani, Fortunato Benaim Burn Foundation, Buenos Aires, Arg.



Radiation sterilized amniotic membrane for implantation

Oscar Schwint, Multi tissue Bank of Garrahan Hospital, Buenos Aires, Arg.

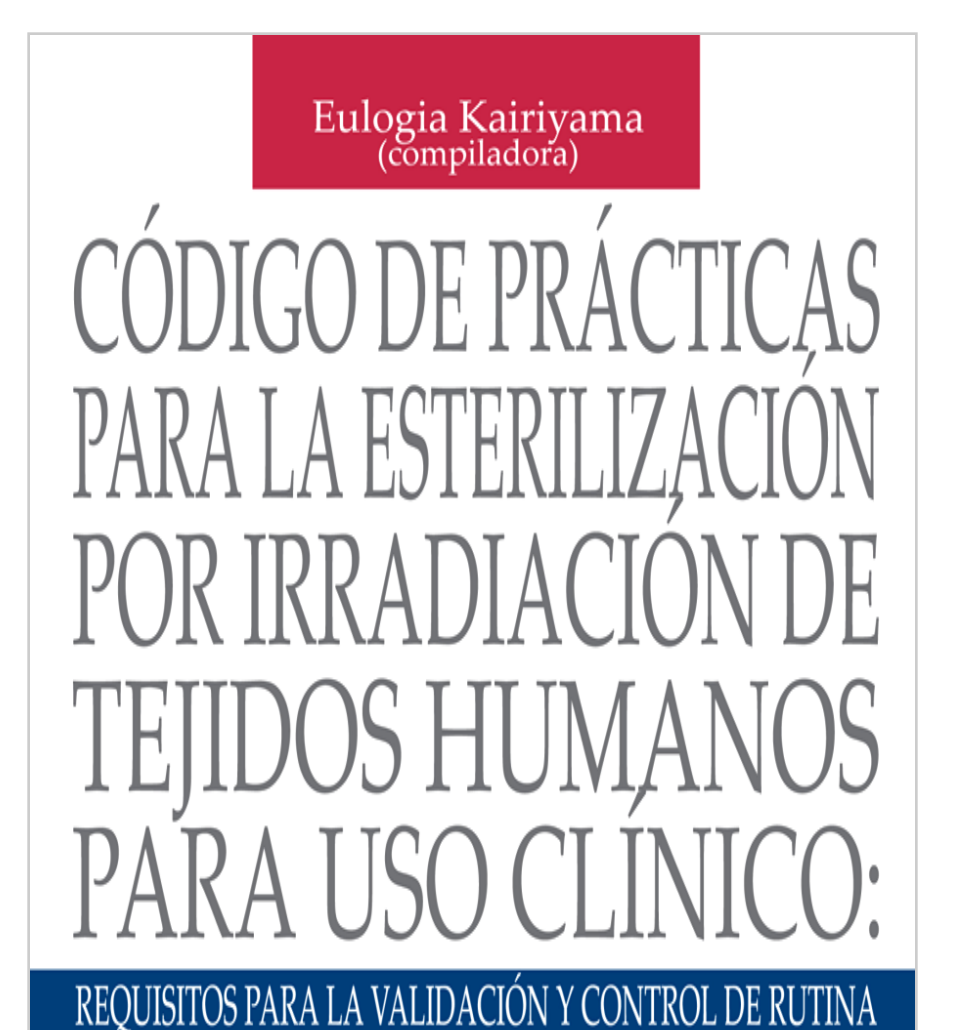


Radiation sterilized human bone for implantation in orthopedic and dental surgeries

Tissue Bank, Hemoderivatives Laboratory, Córdoba, Arg.



IAEA/CNEA INTERREGIONAL TRAINING COURSE ON THE IAEA CODE OF PRACTICE FOR TISSUE BANKS REGARDING THE RADIATION STERILIZATION OF TISSUES - Buenos Aires, Argentina, 3 – 6 May 2004 (INT.6.052)



This document is the new version (2014), translated into Spanish and updated of the IAEA document "CODE OF PRACTICE FOR RADIATION STERILIZATION OF TISSUE ALLOGRAFTS FOR CLINICAL USE: REQUIREMENTS FOR VALIDATION AND ROUTINE CONTROL" (2007), produced by the experts of the Region for harmonization of radiation sterilization process. (ARCAL CVIII, RLA.6.062)

LEGISLATION

The donation and transplant of human organ, tissue and cells are regulated and coordinated by the National Institute Unique Central Coordinator of Ablation and Implant (INCUCAI), The CNEA has collaborated with the INCUCAI in the elaboration of documents on tissue banking activities. The Nuclear Regulatory Authority (ARN) regulates the use of ionizing radiations and controls the radiation protection.