MIPR NO. 92MM2505

TITLE: RIGID SKELETAL FIXATION OF THE IMMATURE CRANIOFACIAL SKELETON

PRINCIPAL INVESTIGATOR: Michael H. Mayer, M.D.
AUTHORS: Jeffrey Hollinger, Jack Bley, Richard Ellenbogen, Paul Manson

CONTRACTING ORGANIZATION: Walter Reed Army Medical Center
Washington, DC 20307-5001

REPORT DATE: September 30, 1992

TYPE OF REPORT: Final Report

PREPARED FOR: U.S. ARMY MEDICAL RESEARCH AND DEVELOPMENT COMMAND
Fort Detrick, Frederick, Maryland 21702-5012

DISTRIBUTION STATEMENT: Approved for public release; distribution unlimited

The findings in this report are not to be construed as an official Department of the Army position unless so designated by other authorized documents.
**Title and Subtitle**

Rigid Skeletal Fixation of the Immature Craniofacial Skeleton

**Authors**

LTC Michael H. Mayer, MC; COL Jeffrey Hollinger, DC; MAJ Jack Bley, VC; MAJ Richard Ellenbogen, MC; Paul Manson, M.D.

**Performing Organization**

Walter Reed Army Medical Center
Washington, DC 20307-5001

**Sponsoring/Monitoring Agency**

U.S. Army Medical Research and Development Command
Ft. Detrick, Frederick, MD 21702-5012

**Abstract**

This project is presently in progress. Two cynomolgus macques (Macaca fascicularis) have undergone craniotomy and rigid fixation of the frontal bone and supraorbital bar of the skull. Ten more non-human primates have been in quarantine and will be released for surgery in Oct 92. The remainder of the non-human primates will be arriving intermittently and undergo quarantine prior to surgery. The initial two non-human primates underwent general anesthesia and surgery and presently are doing very well, gaining weight, and maturing appropriately.

**Subject Terms**

rigid skeletal fixation, craniofacial skeleton
RA II, bone, CIC3, Skeletal
Opinions, interpretations, conclusions, and recommendations are those of the author and are not necessarily endorsed by the U.S. Army.

Where copyrighted material is quoted, permission has been obtained to use such material.

Where material from documents designated for limited distribution is quoted, permission has been obtained to use the material.

Citations of commercial organizations and trade names in this report do not constitute an official Department of the Army endorsement or approval of the products or services of these organizations.

In conducting research using animals, the investigator(s) adhered to the "Guide for the Care and Use of Laboratory Animals," prepared by the Committee on Care and Use of Laboratory Animals of the Institute of Laboratory Animal Resources, National Research Council (NIH Publication No. 86-23, Revised 1985).

For the protection of human subjects, the investigator(s) have adhered to policies of applicable Federal Law 45 CFR 46.

In conducting research utilizing recombinant DNA technology, the investigator(s) adhered to current guidelines promulgated by the National Institutes of Health.

In the conduct of research utilizing recombinant DNA, the investigator(s) adhered to the NIH Guidelines for Research Involving Recombinant DNA Molecules.

In the conduct of research involving hazardous organisms, the investigator(s) adhered to the CDC-NIH Guide for Biosafety in Microbiological and Biomedical Laboratories.

Principal Investigator's Signature Date
The purpose of this study is to evaluate the effects of rigid skeletal fixation on skull growth and bone repair in both osteotomized and non-osteotomized immature non-human primate species' (Macaca fascicularis) calvaria.
The study has only just been started - two cynomolgus macques have undergone surgery. Thirty-four (34) more non-human primates have yet to undergo surgery, some of which will be observed for at least one year. The hypothesis is that the use of rigid skeletal fixation does not impede the subsequent growth in the maturing NHPS' calvaria. Furthermore, if growth inhibition occurs in the osteotomized animals, which are rigidly fixed, that inhibition will not occur in the animals which undergo fronto-orbital advancement as it is performed in actual patients with craniosynostosis. The two non-human primates which have undergone surgery continue to do well.
No conclusions or results are available at this time.