

OPENING REMARKS

INTERNATIONAL CONGRESS  
ON  
PEDIATRIC NEUROSURGERY

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CHILDRENS HOSPITAL OF PHILADELPHIA  
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THE CONCEPT OF THE SEPARATION OF PEDIATRIC SURGERY FROM ITS ADULT COUNTERPART IS NOT RECENT IN WORLD HISTORY OF SURGERY BUT THERE IS NO DOUBT ABOUT THE FACT THAT THE UNITED STATES LAGGED BEHIND EUROPEAN COUNTRIES. IN THE INDEX CATALOG OF THE SURGEON GENERAL'S OFFICE IN 1811 THERE IS A REFERENCE TO A TRANSLATION PUBLISHED IN LONDON IN 1656 OF A FOUR-VOLUME HISTORY OF MEDICINE TO WHICH TRANSLATION WAS ADDED A SECTION ON SURGERY, INCLUDING AN APPENDIX ON CHILDREN'S SURGERY.

IN 1846 IN A PRACTICAL TREATISE ON THE DISEASES OF CHILDREN BY J.M. COLEY OF LONDON THERE WAS INCLUDED A SPECIAL SECTION ON SURGICAL DISEASES.

FROM 1856 TO 1877 THERE ARE LISTED FIFTEEN ARTICLES AND BOOKS ON SURGICAL CONDITIONS OF CHILDREN BY ENGLISH, FRENCH, AND ITALIAN AUTHORS, ONE BEING A COMPLICATION OF TWELVE LETTSOMIAN LECTURES BY MR. T. BRYAN OF LONDON IN 1863.

BOOKS ON PEDIATRIC SURGERY IN MANY LANGUAGES HAVE BEEN APPEARING DURING THE PAST SIXTY YEARS, CLEARLY INDICATING AN INCREASED DEMAND FOR IMPROVEMENT IN THE SURGICAL CARE OF CHILDREN. THE FIRST SPECIFIC BOOK ON PEDIATRIC SURGERY IN THIS COUNTRY WAS ONE BY DEFOREST WILLARD IN 1910. THE FIRST MODERN BOOK WAS THAT VERY PERSONAL COMPENDIUM OF RELATIVELY LITTLE EXPERIENCE BY LADD AND GROSS IN 1941.

THE FIRST CHILDREN'S HOSPITAL IN THE ENGLISH SPEAKING WORLD WAS THAT WHICH WE KNOW TODAY AS THE HOSPITAL FOR SICK

CHILDREN, GREAT ORMOND STREET, LONDON. IT IS INTERESTING TO NOTE THAT IN THE INITIAL SUBSCRIPTION FOR THE BUILDING THAT MR. CHARLES DICKENS PLAYED A PROMINENT ROLE IN PERSUADING HIS FELLOW COUNTRYMEN THAT THE NEEDS FOR CHILDREN REQUIRED SPECIAL ATTENTION. JUST A FEW YEARS LATER IN 1855 -- THE SECOND CHILDREN'S HOSPITAL IN THE ENGLISH SPEAKING WORLD AND THE FIRST IN THIS HEMISPHERE WAS ESTABLISHED; NAMELY, THIS ONE, THE CHILDREN'S HOSPITAL OF PHILADELPHIA. IT HAS MOVED ON THREE OCCASIONS, THE MOST RECENT BEING TO THIS SITE AND THIS PRESENT BUILDING IN 1974.

IN NORTH AMERICA AT THE TURN OF THE CENTURY THERE WERE FEW CHILDREN'S HOSPITALS BUT THEY WERE BEING RECOGNIZED AS CENTERS OF PROGRESS AND INFORMATION AS WELL AS TRAINING IN PEDIATRICS. THE DEVELOPMENT OF PEDIATRICS WAS RAPID BUT THERE IS NO DOUBT THAT PEDIATRIC SURGERY DID NOT KEEP PACE WITH IT. PEDIATRIC SURGERY IN THOSE DAYS IF CALLED MEDIOCRE WAS BEING DESCRIBED IN MOST CHARITABLE TERMS. CHILDREN DIED BECAUSE OF FAILURE TO MAKE CORRECT DIAGNOSES, BECAUSE OF TRAUMATIC TECHNIQUES, FAILURE TO RECOGNIZE THE PATHOLOGICAL CONDITIONS FOUND IN OPERATION, AND DUE TO ABYSMAL POST-OPERATIVE CARE.

THE PERSISTENCE OF MEDIOCRITY CONTINUED BECAUSE SURGEONS DISCUSSED ONLY ADULT CONDITIONS AT THEIR MEETINGS AND DID NOT ATTEND PEDIATRIC MEETINGS, READ PEDIATRIC LITERATURE, OR STUDY

PEDIATRIC PHYSIOLOGY SO THAT THEY WERE NOT EVEN AWARE OF HOW SHORT OF THE MARK THEIR EFFORTS FELL. ENCOUNTERS WITH PEDIATRIC SURGICAL LESIONS BY GENERAL SURGICAL RESIDENTS IN TRAINING WAS SPARSE INDEED.

ON JANUARY 4TH, 1946, I.S. RAVDIN, THE THEN JOHN RAE BARTON PROFESSOR OF SURGERY AT THE UNIVERSITY OF PENNSYLVANIA, SENT ME TO THE CHILDRENS HOSPITAL OF PHILADELPHIA FOR A THREE-MONTH PROBATIONARY PERIOD, AFTER WHICH I WENT TO THE BOSTON CHILDRENS HOSPITAL FOR THE REMAINDER OF THAT YEAR WITH INSTRUCTIONS TO RETURN TO PHILADELPHIA AND ESTABLISH A PEDIATRIC SURGICAL SERVICE EQUIVALENT OF THAT OF DR. WILLIAM E. LADD'S IN BOSTON.

THE CHILDRENS HOSPITAL OF PHILADELPHIA WAS IN THOSE DAYS ESSENTIALLY A MEDICAL SANITARIUM FOR CHILDREN AND THEY WERE NOT GEARED TO MY AGGRESSION IN TRYING TO BUILD THE KIND OF SERVICE I BELIEVED WAS NECESSARY. THE SINGLE OPERATING ROOM WAS BUILT AFTER THE FASHION OF THOSE IN THE ALLEMAGNE KRANKENHAUS IN VIENNA WITH THE OPERATING FLOOR ITSELF BEING IN THE DEPTHS OF A GREEN TILE PIT SURROUNDED BY 125 UNOCCUPIED SEATS.

THE FIRST TIME I SCHEDULED 10 OPERATIONS ON THE SAME DAY, THE OR STAFF QUIT.

IT WAS EVIDENT ALMOST IMMEDIATELY THAT IF PEDIATRIC SURGERY WAS TO PROSPER I WOULD HAVE TO HAVE SOMEONE INTERESTED IN CHILDREN AND WITH THE PHYSIOLOGIC AND PHARMACOLOGIC BACKGROUND TO MAKE A CONTRIBUTION TO THE FIELD OF CHILDREN'S ANESTHESIA.

WITH THE CONCURRENCE OF I.S. RAVDIN AND ROBERT DRIPPS, DR. MARGO DEMMING CAME TO US AS OUR FIRST PEDIATRIC ANESTHESIOLOGIST AND TO HER I OWE MORE THAN COULD BE RECOUNTED IN GETTING STARTED IN THIS NEW SPECIALTY IN PHILADELPHIA.

MANY TIMES MARGO AND I SAT UP AT NIGHT AT THE BEDSIDE OF A CHILD WHOM WE THOUGHT MIGHT NEED A TRACHEOSTOMY AND WE FREQUENTLY TRIED ALL MANNER OF PHARMACOLOGIC EXPERIMENTS IN CHILDREN WITH DIFFICULT RESPIRATORY PROBLEMS THAT WE UNDERSTOOD VERY POORLY. AFTER MANY YEARS OF FAITHFUL SERVICE AND MAJOR CONTRIBUTIONS, LARGELY UNSUNG, TO THE FIELD OF PEDIATRIC ANESTHESIOLOGY, DR. DEMMING RESIGNED AND DR. LEONARD BACHMAN CAME TO FOUND THE FIRST REAL DIVISION OF PEDIATRIC ANESTHESIOLOGY AT THE CHILDRENS HOSPITAL OF PHILADELPHIA. HIS ENTRANCE INTO THE POLITICAL ARENA PUT DR. JACK DOWNES IN COMMAND OF WHAT I THINK IS THE BEST GROUP OF PEDIATRIC ANESTHESIOLOGISTS AND INTENSIVE CARE SPECIALISTS THAT CAN BE FOUND.

BACK IN 1947 AND 1948 MEDICAL PATIENTS DIED ON THE WARDS OF THE CHILDRENS HOSPITAL WITHOUT EVEN HAVING A SURGICAL CONSULTATION WHEN A SIMPLE SURGICAL PROCEDURE COULD HAVE SAVED THEIR LIVES.

AMONG THE LESIONS IN QUESTION WERE SEVERAL NEUROSURGICAL LESIONS, PARTICULARLY THE VARIOUS TYPES OF SPINA BIFIDA, MENINGOCELE, MENINGOMYELOCELE AND HYDROCEPHALUS.

IT WAS MY DREAM IN 1947 AND '48 TO ESTABLISH EVENTUALLY THE MOST COMPREHENSIVE GROUP OF PEDIATRIC SURGICAL SPECIALISTS

ANYWHERE IN THE WORLD. AT A DINNER, WHICH THE DEPARTMENT OF SURGERY OF THIS HOSPITAL GAVE FOR THE BOARD OF MANAGERS IN JANUARY OF 1980, I ANNOUNCED THAT MY GOAL OF 1948 HAD BEEN REALIZED WITH THE FIRM ESTABLISHMENT OF EIGHT DIVISIONS OF SURGERY IN THE DEPARTMENT OF SURGERY IN THE CHILDRENS HOSPITAL OF PHILADELPHIA. IT HAD TAKEN MORE THAN 30 YEARS.

BACK TO 1947, HOWEVER, THE GREATEST NEED THAT I SAW FOR OUR FIRST SURGICAL SUBSPECIALIST WAS IN NEUROSURGERY. I WAS AT THAT TIME A SURGEON OF THE SKIN AND ITS CONTENTS, BUT IN THE FIELD OF NEUROSURGERY I CONCENTRATED ON SPINA BIFIDA AND ITS COMPLICATIONS.

UROLOGICAL COMPLICATIONS WERE THE MOST LIFE THREATENING AND, THEREFORE, THE SECOND SUBSPECIALIST THAT I SOUGHT WAS A PEDIATRIC UROLOGIST.

THE FIRST EFFORT THAT I MADE TO TREAT HYDROCEPHALUS WAS CONFINED TO FOUR PATIENTS IN WHOM I DID A URETERO-DURAL ANASTOMOSIS AFTER PERFORMING A NEPHRECTOMY. AND SUCCESSFULLY, I MIGHT ADD.

BEFORE I WENT TO BOSTON, I WAS, TO THE BEST OF MY KNOWLEDGE, THE FIRST SURGEON IN THE UNITED STATES TO USE PLASTIC TUBING IN CLINICAL PRACTICE. I HAD USED IT FOR THE ADMINISTRATION OF FLUIDS INTRAVENOUSLY IN INFANTS AND IT WAS ONLY NATURAL THAT WE SHOULD TRY SHUNTING EXCESS CEREBRO-SPINAL FLUID FROM THE VENTRICLES ELSEWHERE WITH THIS NEW CONDUCT. ELSEWHERE PROVED TO BE THE THORACIC CAVITY AND THE PERITONEAL CAVITY.

THOSE EARLY EXPERIMENTAL PROCEDURES WERE FAUGHT WITH ALL SORTS OF DIFFICULTY. ALL TUBING DID NOT REMAIN FLEXIBLE AFTER EXPOSED TO TISSUE FLUIDS, AND TIGON, PARTICULARLY, BECAME AS BRITTLE AS UNCOOKED SPAGHETTI. THEREFORE, EVEN SUCCESSFULLY FUNCTIONING SHUNTS WERE SUDDENLY DISRUPTED IF A TODDLER FELL AND CRACKED HIS TUBING. COLLECTIONS OF SPINAL FLUID APPEARED HERE AND THERE ALONG THE COURSE OF THE SHUNT.

ANOTHER PROBLEM WHICH CONFRONTED US WAS THE TENDENCY OF THE OMENTUM TO WRAP ITSELF AROUND THE PERITONEAL END OF THE SHUNT. ONE OF THE FEW GADGETS I EVER CONTRIBUTED TO THE ART OF NEUROSURGERY WAS SOMETHING THAT LOOKED LIKE A HIGHLY POLISHED PLASTIC SALT SHAKER TOP INTO WHICH WE FITTED A FLANGED PLASTIC TUBE. THIS IMPROVED THE SITUATION SOMEWHAT BUT NOT SUFFICIENTLY TO SATISFY US. THE NEXT STEP WAS TO PERFORM A PROPHYLACTIC OMENTUMECTOMY IN AS BLOODLESS A FASHION AS POSSIBLE BEFORE INSERTING THE PERITONEAL SHUNT. I DON'T KNOW HOW MANY SCORES OF THESE I DID, BUT THE SUCCESS RATE OF THE SHUNTING PROCEDURE IMPROVED RAPIDLY.

THE ONLY OTHER EXPERIENCE I HAD THAT MIGHT BE OF INTEREST TO YOU WAS REALLY NOT NEUROSURGICAL ALTHOUGH ITS GOAL WAS NEUROLOGICAL. WE TEND TO THINK THAT ALL OF THE CURRENT PUBLICITY ABOUT ETHICS IN RESEARCH OR THE LACK OF IT, MIGHT SOMEHOW OR OTHER INDICATE THAT RESEARCHERS WERE ALWAYS HONEST IN THE OLD DAYS. SUCH WAS NOT THE CASE.

A GROUP OF AMERICAN INVESTIGATORS WAS REPORTING AN IMPROVEMENT IN INTELLIGENCE IN RETARDED CHILDREN FOLLOWING THE CONSTRUCTION OF ARTERIC-VEIN FISTULAE IN THE NECK.

I WAS APPROACHED BY REPRESENTATIVES OF THE AMERICAN ACADEMY OF PEDIATRICS TO CARRY OUT A STUDY FOR THEM ON FIFTY CHILDREN WITH VARIOUS DIAGNOSES ASSOCIATED WITH MENTAL RETARDATION, WITH THE COMPLETE UNDERSTANDING OF THE PARENTS THAT THIS WAS A PURELY EXPERIMENTAL PROCEDURE. I CARRIED OUT SIDE-TO-SIDE ANASTOMOSES BETWEEN THE COMMON CAROTID ARTERY AND THE INTERNAL JUGULAR VEIN IN 50 CHILDREN. BEFORE AND AFTER THIS PROCEDURE, THE MOST SOPHISTICATED INTELLIGENCE TESTING AVAILABLE TO US WAS CARRIED OUT.

ON THE BASIS OF OUR STUDIES, ALTHOUGH SOME VERY PHENOMAL THINGS SEEMED TO OCCUR, IT WAS IMPOSSIBLE TO PROVE THAT THIS METHOD OF INCREASING OXYGENATED BLOOD SUPPLY TO THE BRAIN IMPROVED INTELLIGENCE OR PERFORMANCE. IN SHORT, WE COULD NOT CONFIRM THE REPORTS OF OTHER INVESTIGATORS CLAIMING SUCCESS IN INTELLIGENCE IMPROVEMENT FROM THIS PROCEDURE.

SHORTLY THEREAFTER A CONFESSION OF FALSIFICATION OF STATISTICS BY THE OTHER INVESTIGATIVE GROUP SETTLED THE MATTER AND I TOOK DOWN ALL OF THE ANASTOMOSES AND RECONSTRUCTED THE INTEGRITY OF THE VESSELS IN THOSE YOUNGSTERS WHO HAD NOT SUCCEDED TO THEIR UNDERLYING DISEASE.

BY THAT TIME PUBLICITY IN THE LAY PRESS WAS BRINGING UNBELIEVABLE NUMBERS OF CHILDREN WITH ADVANCED HYDROCEPHALUS TO OUR DOORS. I WAS BUSY WITH OTHER THINGS AND JOHN HOLTER HAD ARRIVED ON THE SCENE AND I RETREATED TO THE FIELD OF GENERAL SURGERY WHERE I MORE PROPERLY BELONGED.



I WOULD BE REMISS IF I DID NOT ON THIS OCCASION EXPRESS MY APPRECIATION TO DR. LUIS SCHUT WHOM I HAD KNOWN AS A RESIDENT IN NEUROSURGERY AND WAS HAPPY TO COME HERE AS CHIEF OF NEUROSURGERY IN 1966. THAT WAS JUST 20 YEARS AFTER MY INITIAL CONVERSATIONS WITH THE LATE GREAT FRANCIS C. GRANT ON THE FEASIBILITY OF THE SPECIALTY OF PEDIATRIC NEUROSURGERY. ALTHOUGH I THINK HE VIEWED ME AS SOMEWHAT OF AN UNREALISTIC DREAMER HE WAS SUPPORTIVE WHEN I NEEDED NEUROSURGICAL HELP SO DESPERATELY IN 1947.

DR. SCHUT PROVIDED NOT ONLY THE LEADERSHIP SO ABLY DEMONSTRATED IN PEDIATRIC NEUROSURGERY, BUT WAS A REAL FACTOR IN HELPING ME REALIZE THE GOAL I SET FOR PEDIATRIC SURGERY IN GENERAL IN THIS INSTITUTION. MY THANKS TOO TO DR. DERICK BRUCE WHO HELPED MAKE MY LAST YEARS HERE AS SURGEON-IN-CHIEF PLEASANT ONES. DR. SUTTON CAME WHEN I LEFT BUT I AM SURE WILL UPHOLD THE TRADITION OF EXCELLENCE IN THIS INSTITUTION. I EXPECT TO BE STANDING HERE 3 MONTHS FROM TODAY FOR A SURGEON GENERAL'S CONFERENCE ON SUPPORT FOR MECHANISMS FOR THE FAMILY OF A HANDICAPPED CHILD USING HOME CARE FOR THE RESPIRATOR-DEPENDENT CHILD AS A MODEL.

THE RESPIRATOR-DEPENDENT CHILD PRESENTS ENORMOUS ECONOMIC PROBLEMS AND THESE ARE READILY SHIFTED TO THE ETHICAL-MORAL ARENA. THE DIRECTION WE CAN PROVIDE WILL CERTAINLY SPILL OVER INTO THE MANAGEMENT OF DISABLING CONDITIONS OF INTEREST TO THE NEUROSURGEON. I AM FLATTERED TO HAVE BEEN ASKED TO ADDRESS

YOU THIS MORNING AND AM VERY PLEASED TO COME BACK TO MY OLD  
STAMPING GROUNDS. I TRUST THAT YOU WILL FORGIVE MY DABBING  
IN NEUROSURGERY AS I DID. I REALLY LEFT AS SOON AS I COULD.

MAY YOU HAVE A VERY SUCCESSFUL MEETING.