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MEREDITH CAMPBELL MEMORIAL LECTURE

AMERICAN UROLOGIC ASSOCIATION

NEW ORLEANS, LOUISIANA

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I FIRST HEARD THE NAME MEREDITH CAMPBELL WHEN I WENT TO BOSTON IN THE SPRING OF 1946 TO LEARN SOMETHING ABOUT A NEW FIELD THAT WAS DEVELOPING CALLED CHILD SURGERY. MEREDITH CAMPBELL, TO US ON THE HOUSE STAFF AT THE BOSTON CHILDREN'S HOSPITAL, WAS A NAME THAT CONJURED UP THE MAGIC OF SURGERY,--RIGHT UP THERE WITH NAMES LIKE WILLIAM E. LADD AND SIR DENNIS BROWN.

**NOT EVEN THE MOST FANCIFUL FLIGHT OF IMAGINATION WOULD
HAVE LED ME TO DREAM OF GIVING THE MEREDITH CAMPBELL
MEMORIAL LECTURE ALMOST HALF A CENTURY LATER. BUT
HERE I AM, AND HONORED INDEED TO BE AMONG YOU AND TO
HONOR THE MEMORY OF THIS PIONEER IN UROLOGY AND
ESPECIALLY THAT OF CHILDREN.**

**IN 1946, WE WHO WERE ON THE CUTTING EDGE OF A NEW
DISCIPLINE, LATER TO BE KNOWN AS PEDIATRIC SURGERY,
CONSIDERED OURSELVES TO BE WORKING IN A FIELD OF
ULTIMATE SURGICAL SOPHISTICATION.**

**EVEN HAD THAT BEEN TRUE FOR DISCIPLINES IN ADULT
SURGERY, THE ATTENTION GIVEN TO CHILDREN WITH SURGICAL
PROBLEMS WAS A DISGRACE.**

IN INSTITUTIONS WHICH HAD BEEN DEVOTED TO THE CARE OF CHILDREN, WHERE PIONEERING ADVANCES WERE MADE IN MEDICAL PEDIATRICS, THE SURGERY OF CHILDREN LAGGED FAR BEHIND. PEDIATRIC ORTHOPEDICS WAS IN A WAY FAR ADVANCED OVER OTHER PEDIATRIC SURGICAL SUB-SPECIALTIES. EARLY GIANTS IN THAT FIELD, LIKE WILLARD AND NICHOLSON, SPENT MOST OF THEIR TIME REPAIRING THE RAVAGES OF CHILDHOOD DISEASES NO LONGER ENCOUNTERED.

**POLIO, TUBERCULOSIS OF THE BONE, AND OSTEOMYELITIS,
FILLED MOST OF THE BEDS IN SPECIALTY INSTITUTIONS
CONCERNED WITH THE ORTHOPEDIC CHALLENGES OF
CHILDHOOD. ONE SUMMER WHEN I WAS IN COLLEGE, I FELT
EXTRAORDINARILY FORTUNATE TO WORK UNDER THE AEGIS OF
FRANK S. CHILDS, AN ORTHOPEDIC SURGEON WHO, AMONG
OTHER THINGS, WAS THE CHIEF OF SURGERY AT THE ST.
CHARLES HOSPITAL FOR CRIPPLED CHILDREN, A 400-BED
INSTITUTION IN PORT JEFFERSON, NEW YORK.**

MY CLINICAL DUTIES WERE SIMPLE: CHANGE EVERY OSTEOMYELITIS DRESSING ON EVERY CHILD ONCE A WEEK. I STARTED AT 8:00 A.M. MONDAYS, WORKED A 10-HOUR DAY, AND USUALLY WAS FINISHED BY SATURDAY AFTERNOON.

THERE WERE NO SULFONAMIDES, NO ANTIBIOTICS. IODOFORM GAUZE AND BALSAM OF PERU FILLED THE LARGEST CONTAINERS ON THE DRESSING CARTS.

**IN A HOSPITAL LIKE THE CHILDREN'S HOSPITAL OF PHILADELPHIA
IN THE DAYS BEFORE WORLD WAR II, SHARING THE LIMELIGHT
WITH ORTHOPEDICS, WAS OTORHINOLARYNGOLOGY, WITH
TONSILLECTOMY BEING THE MOST FREQUENT SURGICAL
PROCEDURE OF AN ELECTIVE NATURE; THE SURGICAL
EMERGENCIES WERE RADICAL MASTOIDECTOMIES AND THE
DRAINAGE OF PERITONSILLAR ABSCESSSES.**

**UROLOGIC PROCEDURES AT THAT SAME INSTITUTION WERE
CONFINED TO THE HAPHAZARD MANAGEMENT OF GROSSLY
OBVIOUS UROLOGIC ANOMALIES BY PROCEDURES WHICH
SHOULD HAVE BEEN TEMPORIZING BUT REMAINED THROUGHOUT
THE LIFE OF THE CHILD, USUALLY SHORTENED, HOWEVER, BY
INFECTION.**

EVERYONE WAS AN EXPERT IN CIRCUMCISION. THERE WERE PROBABLY MORE GOMCO CLAMPS IN THE HOSPITAL THAN THERE WERE ABDOMINAL RETRACTORS.

THE REAL CHALLENGE OF GENERAL PEDIATRIC SURGERY OF THE 1950S LAY IN THE CONGENITAL DEFECTS INCOMPATIBLE WITH LIFE BUT AMENABLE TO SURGICAL CORRECTION, SUCH AS ESOPHAGEAL ATRESIA, OMPHALOCELE, IMPERFORATE ANUS, DIAPHRAGMATIC HERNIA, AND INTESTINAL OBSTRUCTION. THE MORTALITY FOR A SIMPLE COLOSTOMY WAS IN THE NEIGHBORHOOD OF 90%.

THE THOUGHT OF GIVING GENERAL ANESTHESIA TO A CHILD STRUCK TERROR TO THE HEARTS OF MOST SURGEONS, BUT INSTEAD OF THIS BEING AN IMPETUS TO RESEARCH INTO THE UNIQUE RESPONSES OF INFANTS AND SMALL CHILDREN TO PHARMACOLOGICALS, ANESTHETIC AGENTS, AND BLOOD LOSS AND REPLACEMENT, OPERATIONS WERE POSTPONED OR NEVER DONE RATHER THAN FACE THE PROBLEMS OF HIGH MORTALITY FROM ANESTHESIA.

IN 1946, WILLIAM E. LADD, THE PIONEER OF PEDIATRIC SURGERY IN THE UNITED STATES HAD RETIRED FROM THE BOSTON CHILDREN'S HOSPITAL AND HARVARD MEDICAL SCHOOL. A CHAIR HAD BEEN ENDOWED IN HIS NAME, FUNDED BY \$6,000. ROBERT E. GROSS OCCUPIED IT IN THE CLOSING WEEKS OF 1946, AND THE BOSTON CHILDREN'S HOSPITAL WAS THE ONLY PLACE IN THE UNITED STATES WHERE ONE COULD SAY THERE WAS ANYTHING LIKE A TRAINING PROGRAM IN CHILD SURGERY.

THERE WERE A FEW MEN AROUND THE COUNTRY WHO WERE BEGINNING TO MAKE A DIFFERENCE IN CHILD SURGERY: OSWALD WYATT IN MINNEAPOLIS, HERBERT COE IN SEATTLE, AND ORVAR SWENSON IN BOSTON. I WAS THE SIXTH PERSON IN THE UNITED STATES TO CALL HIMSELF A CHILD SURGEON, AND THE FIRST TO PRACTICE THE SPECIALTY TO THE EXCLUSION OF ADULT PATIENTS.

I BEGAN TO OPERATE AT THE CHILDREN'S HOSPITAL IN PHILADELPHIA IN DECEMBER OF 1946, ACTING, INDEED, AS THE SURGEON IN CHIEF, A TITLE I DID NOT GET UNTIL 1948. TAGUE CHISHOLM JOINED OSWALD WYATT IN MINNEAPOLIS SHORTLY AFTER THAT, AND WILLIS POTTS BEGAN HIS CAREER IN CHICAGO. LATER STALWARTS SUCH AS SANDY BILL, BILL CLATWORTHY, AND LUTHER LONGINO WERE STILL MEMBERS OF THE HOUSE STAFF AT BOSTON CHILDREN'S HOSPITAL.

I LEARNED, EARLY ON, THAT IT WAS EASIER TO PUT CHILDREN UNDER ANESTHESIA THAN IT WAS TO WAKE THEM UP. HENCE, A LOT OF MY TIME IN THE FIRST TWO YEARS IN THIS NEW FIELD WAS DEVOTED TO THE DEVELOPMENT OF TECHNIQUES AND SAFEGUARDS IN PEDIATRIC ANESTHESIA. INDEED I SPENT MORE CONCERN AND EFFORT THERE THAN I DID IN SURGERY. MANY THINGS WERE ACCOMPLISHED, NOT THE LEAST OF WHICH WAS THE DEVELOPMENT OF SAFE ENDOTRACHEAL ANESTHESIA, EVEN FOR NEWBORNS. MUCH OF THE EQUIPMENT WE USED, WE MADE OURSELVES.

NEOPRENE HAD JUST BEGUN TO REPLACE RUBBER TUBING. THERE WAS NO SUCH THING AS POLYETHYLENE OR TYGON PLASTIC TUBING. NICETIES SUCH AS BUTTERFLY NEEDLES HAD NOT BEEN INVENTED. TO START AN INTRAVENOUS IN A SCALP VEIN ON A NEWBORN WAS TRULY A CHALLENGE, BUT KEEPING IT RUNNING BY BUILDING MECHANICAL SUPPORTS TO HOLD IN PLACE A RIGID NEEDLE ATTACHED TO A GLASS SYRINGE WAS AN ACCOMPLISHMENT IN STRUCTURAL ENGINEERING.

AND YET HERE AND THERE ABOUT THE COUNTRY CHILDREN WERE BEGINNING TO GET A FAIR SHAKE IN SURGERY.

BEFORE GRADUATING FROM CORNELL UNIVERSITY MEDICAL COLLEGE IN 1941, I HAD SECURED A TWO-YEAR INTERNSHIP AT THE PENNSYLVANIA HOSPITAL IN PHILADELPHIA AND WAS ASSURED BY I.S. RAVDIN THAT I WOULD EVENTUALLY BE A HARRISON FELLOW IN GENERAL SURGERY AND SURGICAL RESEARCH.

**THE WAR IN EUROPE, AND THE PRESUMPTION THAT WE WOULD
SOON BE IN IT, LED TO THE REDUCTION OF MY TWO-YEAR
ROTATING INTERNSHIP TO ONE YEAR. ON THE DAY AFTER PEARL
HARBOR, I.S. RAVDIN CHOPPED AT LEAST THREE YEARS OFF MY
SURGICAL TRAINING BY NOT ONLY APPOINTING ME TO THE
HARRISON FELLOWSHIP I ANTICIPATED, BUT HIS MILITARY
CONNECTIONS WITH THE ARMY MEDICAL CORPS ENABLED HIM
TO DECLARE ME ESSENTIAL TO THE UNIVERSITY OF
PENNSYLVANIA FOR THE DURATION OF THE WAR.**

**MY FIRST INTEREST IN CANCER HAD DEVELOPED WHEN I WAS A
MEDICAL STUDENT AT CORNELL. DURING THE SUMMER BETWEEN
MY JUNIOR AND SENIOR YEARS, I WORKED WITH HAYES MARTIN,
CHIEF OF THE HEAD AND NECK SERVICE AT MEMORIAL HOSPITAL,
ON A NUTRITIONAL SURVEY OF CANCER PATIENTS FROM HIS
SERVICE. THE THESIS OF THE PROJECT WAS THAT AVITAMINOSIS
B CONTRIBUTED TO THE RAVAGES OF CANCER OF THE FLOOR OF
THE MOUTH, PALATE, PHARYNX, ETC.**

MEMORIAL HOSPITAL HAD JUST MOVED TO ITS NEW LOCATION OPPOSITE CORNELL AND THE NEW YORK HOSPITAL, AND IT WAS THE CENTER FOR CANCER, IN THE BROADEST SENSE OF THE TERM, ON THE EAST COAST. THE HOSPITAL'S DIRECTOR WAS C.P. RHOADES, BUT JAMES EWING, WHO IS REGARDED BY MANY AS THE FATHER OF MODERN CANCER RESEARCH AND THERAPY IN THE UNITED STATES, WAS STILL IN A POSITION OF AWESOME AUTHORITY IN THE HOSPITAL.

**THE DAY CAME WHEN I HAD TO PRESENT WHAT I HAD DONE
BEFORE MEMORIAL'S CANCER RESEARCH ADVISORY COMMITTEE.
THE FACT THAT TWO NOBEL LAUREATES SAT ON THAT
COMMITTEE DID NOT MAKE IT ANY EASIER. IN THOSE DAYS I
SUFFERED FROM AN INCAPACITATING TYPE OF MIGRAINE
BROUGHT ON BY THE RELAXATION OF TENSION. MY 10-MINUTE
PRESENTATION WAS FOLLOWED BY SUCH A SENSE OF RELIEF
THAT THE SCOTOMA I DEVELOPED IMMEDIATELY WAS SO BRIGHT
THAT I COULD BARELY FIND MY WAY OFF THE PLATFORM.**

BY THE TIME I REACHED THE BACK OF THE AUDITORIUM, I FELT AS THOUGH SOMEONE HAD BURIED A HATCHET IN THE RIGHT SIDE OF MY SKULL.

IN PREPARATION FOR THAT OCCASION, IT WAS NECESSARY TO PRESENT MY FINDINGS IN A PRELIMINARY FASHION TO OLD DR. EWING. EWING ASKED ME IF I THOUGHT THE IRRITATION OF THE MUCOSA OF THE MOUTH FROM SUCH THINGS AS DENTURES, PIPE STEMS, AND SO FORTH, MIGHT CONTRIBUTE TO CANCER.

WHEN I REPLIED IN THE AFFIRMATIVE HE SAID: "WELL, IF YOU'RE RIGHT, HORSES OUGHT TO HAVE CANCER OF THE JAW ALL THE TIME." I REPLIED: "AS A MATTER OF FACT, MY GRANDFATHER'S HORSE DIED OF CANCER OF THE JAW BUT, ON THE OTHER HAND, I'VE ONLY KNOWN TWO HORSES WELL." TO THAT REPLY, EWING QUIPPED, "THAT'S NOT A BAD SERIES; 50 PERCENT."

**I LEFT CORNELL, MEMORIAL HOSPITAL, AND NEW YORK CITY TO
GO TO PHILADELPHIA, WITH THE PROMISE THAT AFTER
APPROPRIATE SURGICAL TRAINING I WOULD RETURN TO
MEMORIAL TO BE THE SURGICAL LIAISON IN THEIR TRAINING
PROGRAM WITH CORNELL AND THE NEW YORK HOSPITAL.**

**IF THERE WAS SUCH A THING AS ONCOLOGY IN THOSE DAYS, I
HAD NOT YET HEARD ABOUT IT.**

IN THE THIRD YEAR OF MY HARRISON FELLOWSHIP, WHICH WAS ESSENTIALLY THE SURGICAL RESIDENCY AT THE HOSPITAL OF THE UNIVERSITY OF PENNSYLVANIA, I WAS ADMITTED TO THAT HOSPITAL AS A PATIENT WITH A SEVERE STREP THROAT, MAKING IT VERY DIFFICULT TO SWALLOW.

**THE WAR WAS OVER IN EUROPE. THINGS WERE WINDING DOWN
IN THE PACIFIC BASIN. MOST OF THE UNIVERSITY'S SURGICAL
STAFF WAS STILL IN THE ARMY RUNNING THE 20TH GENERAL
HOSPITAL IN ASSAM. I WAS WAKENED FROM A DEEP SLEEP
ABOUT 5:00 A.M. BY I.S. RAVDIN BURSTING INTO MY HOSPITAL
ROOM, IN THE UNIFORM OF A COLONEL (HE WAS MADE GENERAL
BEFORE RETURNING TO INDIA).**

"CHICK! WHAT DO YOU WANT TO DO WITH YOUR LIFE?"

I DON'T KNOW HOW I GATHERED MY THOUGHTS TOGETHER, BUT I CROAKED OUT SOMETHING THAT SOUNDED LIKE THIS: "WELL, DR. RAVDIN, I HAVE COME TO LOVE THE UNIVERSITY OF PENNSYLVANIA, THIS HOSPITAL, AND PHILADELPHIA. I'D LIKE TO STAY HERE. THERE'S ONE WEAK SPOT IN YOUR PROGRAM, AND THAT'S THE CANCER CLINIC. IF YOU'LL GIVE THAT TO ME, I'LL DEVELOP IT AND MAKE IT SING FOR YOU."

RAV REPLIED: "HOW WOULD YOU LIKE TO BE SURGEON IN CHIEF OF THE CHILDREN'S HOSPITAL INSTEAD?" I DIDN'T THINK LONG BEFORE REPLYING: "THAT'S MY SECOND CHOICE." THAT BRIEF ENCOUNTER IS THE REASON IM HERE TALKING TO YOU TODAY.