

5 NEWS

THE UNIVERSITY OF TEXAS SOUTHWESTERN MEDICAL SCHOOL AT DALLAS

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SAN FRANCISCO--New techniques for the care of injured persons have dramatically reduced death rates for some forms of trauma, a Dallas medical educator told the American College of Surgeons Tuesday.

Dr. G. Tom Shires, chairman of the Department of Surgery at The University of Texas Southwestern Medical School, cited trauma as the leading cause of death through age 36 as he delivered the Tenth Annual Scudder Oration on Trauma at the ACS.

Improvements in diagnosis and treatment have brought about sharp reductions of mortality in some areas, he said.

Since "blunt trauma remains one of the major causes of death from injury," the speaker stressed the use of a hypodermic needle in detection of internal bleeding has been augmented by injection and recovery of a washing fluid from the peritoneal cavity as a valuable back-up technique.

"Due to more aggressive management of pancreatic injuries, the mortality for blunt trauma of the pancreas has decreased from a previously reported 37 per cent to an overall 16 per cent and to 8 per cent during the past five years," said Dr. Shires.

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In the case of liver injuries, a number of techniques have aided victims to recover. But most impressive has been the use of surgical repair: "Since we originally advocated lobar or sublobar resection, the mortality has been reduced from 70 per cent to 20 per cent in our experience with massive injuries," Dr. Shires declared.

A greater incidence of high speed vehicular injuries and more rapid transportation of patients have presented the surgeon an increasing number of injuries to the major veins involving the liver, he said. Again, experience with resection has indicated a marked decrease in mortality, "but even resection treatment may fail because of inability to quickly control major vessel hemorrhage."

"Burn injury has seen remarkable advances in several areas in the past two decades," declared Dr. Shires. Two of the areas include initial care and control of sepsis or infection, he said.

"An approach to the early resuscitation of burn shock victims has been derived from studies of the serial changes in plasma and extracellular fluid volumes, cardiac output and acid-base equilibrium.

(The changes in body fluids due to shock has been a major area of research for Dr. Shires and associates at the medical school.)

In particular, a sudden reduction in fluids between body cells has been explored. Equipment so sensitive it can measure the electric potential across a single cell has been employed to the end that:

"Present studies indicate the existence of a major alteration in cell membrane function in skeletal muscle cells following hemorrhagic shock in animals and men," said Dr. Shires.

One theory is that the fluid moves from outside to inside the cells in shock.

The importance of such research is reflected in emphasis on the use of blood and fluids to treat shock of war casualties. Dr. Shires cited statistics showing the mortality rate of seriously injured patients in Viet Nam approximates that of Korea (2.5 per cent).

"However, the wounded to killed ratio is 6:1 in Viet Nam and in Korea was 3:1.

"This dramatically indicates that more patients than ever before are surviving combat injuries.

Post-injury kidney failure was cut from one per 200 in Korea to one in every 1,867 in Viet Nam, he said.

"Consequently, it is obvious that a number of factors including rapid transportation, better resuscitation, more appropriate definitive care and a number of other factors have substantially reduced the mortality from serious injury just in the past 20 years," concluded Dr. Shires.

Noting that surgical care of trauma has really come into its own with the advent of antiseptic procedures, anesthesia, blood transfusions and quick transportation, the speaker called for additional research by basic biological scientists in the field of trauma and for multi-disciplined approaches to clinical care.

OCTOBER 6, 1972