

# BIOMEDICINE

John H. Douglas reports from San Francisco at the 64th annual clinical congress of the American College of Surgeons

## New hope for infertile men

When research of the last five years is combined with more systematic evaluation of the male partner of an infertile couple, the chances for curing male infertility will rise sharply, says Larry I. Lipshultz of the University of Texas Medical School in Houston. Nearly 15 percent of newlyweds have difficulty conceiving, he says, and male infertility is the cause in one-third to one-half of those cases.

One frequent cause is a varicose vein of the testes. The condition can now be detected using a doppler stethoscope to measure blood flow and can usually be corrected by surgery if found soon enough, Lipshultz says. Another frequent problem arises when sperm are produced but lack viability. One possible treatment involves having the physician take sperm from the initial portion of an emission and inject it directly into the cervix.

Lipshultz says that surgery to repair a vasectomy is now successful in about 40 percent to 55 percent of the cases, in terms of a man actually fathering children. Many more men who have the surgery produce sperm but remain infertile for reasons not yet fully understood. Lipshultz says there appears to be a cut-off point, at about 10 years, after which restoring fertility becomes much less likely.

Another paper, presented by Charles F. Cobb of the University of Pittsburgh Hospital School of Medicine, offered the first evidence that alcohol may act directly as a toxin to the testes, causing male infertility. Alcoholics have long been known to suffer fertility loss, but many researchers assumed this was a secondary effect of liver disease. Cobb and his colleagues showed that in rats, at least, the ability to produce the male hormone testosterone is inhibited by the administration of alcohol.

Finally, Anthony A. Caldamone and colleagues at the University of Rochester School of Medicine and Dentistry presented data suggesting that some male infertility may be related to zinc deficiency. Zinc therapy, they found, was sometimes able to restore sperm viability. The mechanism by which zinc affects sperm function remains unclear.

## Mongolism and deafness

Children born with the genetic defect that causes the physical deformities of Down's syndrome (mongolism) are also usually severely retarded, but new evidence indicates that 10 to 15 IQ points of such retardation may be due to deafness. "The additional retardation may make the difference between a child's being put in a state institution or growing up working in a sheltered workshop," says Thomas J. Balkany of the University of Colorado Medical Center.

About 10 percent of the patients in state mental hospitals are mongoloids and Balkany found that roughly two-thirds of these have significant hearing loss caused by fluid build-up behind the eardrum. If detected early enough, the fluid can be drained off using a plastic tube, he says, and children growing up with the syndrome may lead more productive lives. Balkany recommends that all babies born with Down's syndrome be tested very early for hearing impairment.

## Two blood tests for cancer

A research group from the McGill University Faculty of Medicine reported development of a simple, automated blood test to diagnose the earliest stages of cancer of the colon, pancreas, stomach and lung. The paper was presented by Donna N. Tataryn.

The test is called the "tube leukocyte adherence inhibition" (LAI) assay and is based on the phenomenon that white blood

cells from cancer patients, when properly incubated, lose their ability to adhere to glass surfaces. LAI reactivity is most pronounced during the early stages of cancer, with some tests giving positive results 100 percent of the time at first, but then declining to 33 percent after the disease has become widespread. Some "false positives" were also noticed, and the supposedly cancer-free patients involved are being carefully watched to see if tumors develop.

In a related development, a team of Ohio State investigators reported work done on a blood test to predict recurrence of a cancer before it becomes apparent by other means. The paper, presented by Lloyd Svedersky, concluded that "a nonspecific acting immunosuppressive factor is actively produced by lymphocytes of tumor-bearing hosts."

## Humpty Dumpty's trauma surgeon

"It has never surprised me that all the king's horses and all the king's men couldn't put Humpty Dumpty together again. If Humpty's care had been coordinated by just one person — the king's trauma surgeon — he may well have survived."

With such sparkles of wit, Wayne State University professor Alexander J. Walt pleaded with his colleagues to improve the care of trauma patients by eliminating the fractionation of care often received from today's specialists. Specifically, he called for new support for the "often neglected research efforts" of those who have attempted to devise injury severity scores and standard treatment protocols for injuries.

## Frontiers

One of the most popular sessions at each year's congress is a round-table discussion entitled "What's New in Surgery." Some excerpts (and discussants):

- Shock and metabolism (Douglas W. Wilmore, Brooke Army Medical Center, San Antonio, Texas). When some West German scientists tried to determine what factors were involved in the eventual survival of severe shock patients, they found that the nonsurvivors experienced increased pulmonary artery pressure, followed by right ventricle dilation, followed by impaired heart function on both sides. They hypothesize that the cause is clots or embolisms in the lung that lead to a back-up of blood in the heart, which swells against the walls of the surrounding pericardial sac. They have experimented with dogs in treating the condition by simply slitting the sac and giving the heart more room.

- Tumors (Samual A. Wells Jr., Duke University). One of the body's most important natural defenses against tumors is a class of lymphocytes called T cells. For years, scientists have tried to find ways of growing T cells outside the body and have now finally succeeded in artificially culturing kilogram amounts. Although application to disease is still some time away, the potential of this development is that cancer patients might have their natural defenses boosted by receiving injections of large quantities of their own T cells that had been removed from their bodies and cultured.

- Cardiothoracic surgery (Clarence S. Weldon, St. Louis). The controversy over whether coronary artery surgery is worth the effort is slowly being cleared up — in favor of surgery (SN: 5/13/78, p. 314). Enough patient experience has accumulated to show that the surgery leads to better exercise tolerance and less need for drugs. Survival rates of patients are roughly equal to comparable statistics for the general population, but it is still unclear when the survival of an individual patient would better be prolonged by surgery or drug therapy.