Biomedicine

Vasectomy, disease link refuted

Men who undergo vasectomies seem to incur no added risk for subsequent disease, according to results from the largest vasectomy study ever conducted.

Animal studies have indicated that vasectomized males show a greater vulnerability to hardening of the arteries (SN: 6/17/78, p. 391) and immune system ailments. In contrast, the 10,590 vasectomized men in the National Institutes of Health-funded study were, if anything, more healthy than men in a matched control group. Study leader Frank Massey Jr., of the University of California at Los Angeles, detailed the results at the November meeting of the American Public Health Association in Dallas.

The men were questioned on 98 health problems including skin rashes, diabetes, rheumatoid arthritis, heart disease and cancer. Results confirmed by a follow-up scan of medical records showed that the only ailment more commonly found in vasectomized men was inflammation around the surgery site — an occasional complication that is usually short-lived, Massey says. The time interval between surgery and survey ranged from one to 41 years and the average length was 8.6 years. "We feel this study demonstrates that there is very little risk of harmful effects in the years that we've followed these men," says William O'Fallon, a collaborator in the study from the Mayo Clinic in Rochester, Minn. But generalizing about health risks beyond 10 years after surgery might be premature, he says.

Culture or not? Results ignored

It seems like straightforward medical practice: A patient with a sore throat goes to a doctor, who prescribes antibiotics and takes a throat culture. Straightforward, yes, common, yes, but an efficient use of medical resources it is not, say two government researchers.

The problem, the researchers say, is that the throat culture — which indicates the presence of antibiotic-sensitive bacteria — is in many cases just handwaving. In a survey of Rhode Island physicians, laboratories and hospitals, they found that 87 percent of doctors were prescribing antibiotic therapy before the culture results were known, and 40 percent continued the 10-day course of therapy regardless of culture results.

Most sore throats will clear up on their own, and many are caused by antibiotic-immune viruses. In cases where group A *Streptococcus* bacteria are present, antibiotics are useful as a way of preventing the occasional—and now very rare—flare-up into rheumatic fever.

"Current throat culture practices probably have little influence on treatment of streptococcal pharyngitis (strep throat) and control of rheumatic fever," the researchers report in the Nov. 4 JOURNAL OF THE AMERICAN MEDICAL ASSOCIATION.

In the winter, one in every seven patients got a throat culture, the survey revealed. "The results are not being used effectively," says Scott D. Holmberg, one of the authors of the study, now at the Centers for Disease Control in Atlanta. The problem with indiscriminate antibiotic use, he says, is that in many cases it is not effective, it promotes resistant bacterial strains, some people are allergic, and it adds to the nation's medical bill.

On the disease front

Centers for Disease Control researchers are predicting a record low for measles this year. As of Nov. 26, only 1,398 cases had been reported in the United States for 1983; in 1982 there were 1,572 by this time. Only two indigenous cases were reported for the week of Nov. 19-26, according to the Dec. 2 MORBIDITY AND MORTALITY WEEKLY REPORT. Mumps is also at a record low — 3,000 cases so far, vs. 4,832 last year. German measles dropped from 2,177 cases last year to 916 this year. But pertussis (whooping cough) is gaining ground — up from 1,569 last year to 2,051.

Environment

Vaccinating tobacco

An experimental technique for protecting tobacco from the ravages of blue mold *(Peronospora tabacina)* has plant pathologists at the University of Kentucky excited. Not only does it immunize tobacco against the fungus, but it also appears to boost the plant's growth rate, reports Joseph Kuc. His team in Lexington has already immunized crops such as cucumbers and muskmelons against other pathogens (SN: 10/22/77, p. 268).

Blue mold can be devastating. In 1979, it caused the U.S. tobacco industry to lose an estimated $250 million; Kentucky's toll was $55 million, Kuc says. In his fight against the blight, Kuc notes, "We're using a special strain of the [blue mold] pathogen itself. We put it in the stem of the plant where it doesn't grow much or cause the disease." But the mold grows a little. And as it does, it elicits an immune-like response which sensitizes the plant to quickly produce "natural antibiotics" as a defense, Kuc says. "Along that same line," he adds, "we have isolated a compound which we can put into tobacco plants to do the same thing." The compound — which has yet to be chemically identified — was extracted from previously immunized tobacco by Kuc's graduate assistant, Sadik Tuzun.

Scaling up from laboratory trials, Kuc's team began field testing their stem vaccinations this summer. "Unfortunately, because it was such a hot and dry year, we didn't have the disease in the field," Kuc notes. But growth increases were obvious. Compared with unvaccinated plants, by the start of flowering, immunized plants were 40 percent taller, had about a 30 percent increase in fresh weight, had five to seven more leaves, and flowered two to three weeks earlier. And the gains were not only from water. Immunized plants also showed a 40 percent increase over controls in their dry weight. "What the yield will be we don't know yet," he says, "because the tobacco has to be dried. It's in the process of going through that now." Meanwhile, another field trial has just gotten underway in Puerto Rico where the mold has been very much in evidence.

The current painstaking technique of innoculating individual plant stems is not expected to have any serious commercial value. What Kuc is working toward instead is development of that compound isolated from immunized plants for use as a fungicidal spray.

Appeals court reverses sheep decision

Charging that the federal government had "perpetrated a fraud upon the court" during a suit originally tried in 1956, U.S. District Court Judge A. Sherman Christensen last year ordered the retrial of a case brought against the government by Utah ranchers (SN: 8/14/82, p. 100). The ranchers claimed they lost 4,390 sheep from the fallout of nuclear weapons detonated at the Nevada Test Site. On Nov. 22, 1983, the 10th Circuit Court of Appeals reversed Judge Christensen's retrial order. The new ruling takes issue with the "facts" as laid out by Christensen in his opinion. Christensen said the federal government had misled the court in the earlier trial and that the plaintiffs were only able to establish that fraud had occurred using documents unclassified since the original trial. The appeals court disagreed. The ranchers are planning to appeal.

Dioxin update

A pilot study by the Centers for Disease Control in Atlanta found no increase in clinical abnormalities among 68 residents of three areas in Missouri — including Times Beach — that had been contaminated with dioxin. Notwithstanding, 57 residents and former residents of Missouri's dioxin-contaminated areas filed suit on Nov. 28 asking $684 million in damages from the firms and individuals they held responsible for their exposures to the toxic chemical.