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Boston University
Researchers find that spinal cord nerve fibers can grow after transection

Research conducted by Harry S. Goldsmith, M.D., a professor of surgery and an adjunct professor of neurosurgery, and a colleague at the University of Ottawa has shown that spinal cord nerve fibers can be made to grow after complete transection. In a study published in the Sept. 4 issue of Brain Research, Goldsmith and Jack C. de la Torre, M.D., Ph.D., a professor of neurosurgery at the University of Ottawa, reported that axons—the components of nerve cells that pass impulses from cell to cell—regenerate after complete transection of the spinal cord when provided with an adequate blood supply and when scarring is prevented. The team also found that with the aid of a collagen “bridge,” axons apparently are able to connect to the appropriate target nerve cells, thereby allowing the transmission of impulses sent from the brain.

In a unique procedure involving laboratory cats with completely transected spinal cords, the researchers were able to induce the regeneration of axons by applying surgically lengthened omentum, a fold of tissue in the abdominal cavity of mammals to the transection site. The omentum remained attached to its original site, which allowed it to supply blood to the severed spinal cord. This procedure was first developed by Goldsmith in the 1980s.

Goldsmith also has performed extensive studies using the omentum on cats with injured—rather than transected—spinal cords. This research has shown that surgical reconstruction of an injured spinal cord must be performed during the three-hour period immediately following the injury or that it must be delayed until the edema fluid that follows injury has diminished. From three hours to as long as several months after injury, the fluid is present to such an extent that surgical reconstruction is impossible. Goldsmith’s studies have shown that once the edema fluid has diminished and scar tissue has formed, the injury is considered chronic and reconstruction is once again possible.

A clinical trial based on this earlier research using the omentum on cats with injured spinal cords is under way at Boston University Medical Center/The University Hospital. Unlike the study described in this article, the investigation involves patients who have chronic spinal injuries, rather than complete, acute transections. Results are expected to be reported early next spring.

Shapiro receives prestigious honor from national radiology society

Jerome H. Shapiro, M.D., a professor of radiology, has been awarded a 1992 gold medal from the American College of Radiology (ACR) for distinguished and extraordinary service. The medal, the most prestigious award given by the ACR, was presented to Shapiro in September, during the ACR’s annual meeting in Phoenix.

Shapiro recently stepped down from three positions he held for 29 years. He was chairperson of the Department of Radiology at the School of Medicine, chief of Boston University Medical Center/The University Hospital’s radiology department, and the director of radiology at Boston City Hospital.

Shapiro has authored more than 90 articles in a wide variety of medical journals. He has been an active member of a number of national radiological societies and has held posts as chancellor, vice president and president of the American College of Radiology. Currently, he is the president-elect of the Council of Medical Specialty Societies.

Researchers identify existence of gene for early-onset AD

In a study examining data from first-degree relatives of Alzheimer’s patients, a team of scientists, led by Lindsay Farrer, Ph.D., an assistant professor of neurology and public health, has identified the existence of a major gene for early-onset Alzheimer’s disease (AD).

In their investigation, the results of which were presented at the Third International Conference on Alzheimer’s Disease, the researchers found that first-degree relatives of patients with early-
have found that 74 percent of randomly purchased milk in seven eastern states did not contain the amount of vitamin D stated on the label. Fifty percent contained less than 80 percent of the amount claimed on the label, while 24 percent contained 20 percent more than the label claimed.

This study follows another widely publicized discovery reported last spring by BUSM researchers that milk from a single Massachusetts dairy contained more than 500 times the amount of vitamin D specified on its label. Another study conducted earlier this year by BUSM researchers showed that 71 percent of the milk from five eastern states contained too little or too much vitamin D.

The new study, reported at the American Society for Bone and Mineral Research conference in Minneapolis recently, was conducted to determine whether the findings from the two previous investigations had had any impact on dairies’ vitamin D fortification of the current milk supply. All three studies were conducted under the direction of Michael F. Holick, Ph.D., M.D., a professor of medicine, dermatology and physiology and the director of the Vitamin D, Skin and Bone Research Laboratory at BUSM.

In proper doses, vitamin D plays an important role in preventing rickets in children and osteomalacia and osteoporosis in adults. In excessive amounts, however, it can lead to vitamin D intoxication. Currently, it is up to each individual milk processor to monitor its own vitamin D fortification by sending one or two samples per year to an outside laboratory for analysis. Holick said that the monitoring must be done more frequently and that milk processors must develop new fortification processes to ensure that the vitamin D is distributed evenly throughout the milk.

Varying cholesterol levels in children call into question NCEP guidelines

Children’s cholesterol levels vary so dramatically each time they are measured that it may be impossible to classify them into risk categories, as has been recommended by the National Cholesterol Education Program (NCEP), according to BUMC researchers involved in the Framingham Children’s Study. The risk categories are intended to serve as a guideline to determine which children are at risk for developing high LDL cholesterol levels as adults.

In this study, which was published in the September issue of the Journal of Pediatrics, scientists measured blood cholesterol levels in 24 children during three successive weeks. Even with two or three measurements taken on each child, however, the variability of the cholesterol levels hampered the accurate assignment of the children to the appropriate risk categories.

The findings call into question the NCEP’s overall recommendations, said Matthew Gillman, M.D., an assistant professor of medicine and pediatrics, who led the study. “If you can’t accurately put kids into categories, how can you know on whom to intervene?” The study is significant because it showed biological variability of cholesterol levels within individuals over a period of time as short as three weeks. The variability of the measure of an individual’s cholesterol levels from laboratory to laboratory is well known, but in this study, cholesterol was measured in the same laboratory at the same time.

Wide discrepancy in vitamin D content of milk is found

Researchers at the School of Medicine and Boston City Hospital have found that 74 percent of randomly purchased milk in seven eastern states did not contain the amount of vitamin D stated on the label. Fifty percent contained less than 80 percent of the amount claimed on the label, while 24 percent contained 20 percent more than the label claimed.

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Pediatricians need more education on fetal alcohol syndrome, survey shows

A School of Medicine survey of 234 Massachusetts pediatricians has shown that while a substantial proportion of pediatricians have some understanding of the effects of alcohol on pregnancy, they do not feel adequately prepared to provide the necessary counseling for children suffering from fetal alcohol syndrome or fetal alcohol effects.

According to Barbara Morse, Ph.D., an assistant professor of psychiatry, and Lyn Weiner, M.P.H., an associate professor of psychiatry, the findings show that more education “through pediatric journals, continuing medical-education courses and medical school curricula” is necessary to increase pediatricians’ understanding so that they can help children with the syndrome achieve their greatest potential.

Although the majority were able to define correctly the terms fetal alcohol syndrome and fetal alcohol effects (FAS/FAE), more physicians said that they suspected a patient had FAS/FAE than had actually made the diagnosis. More than half of the respondents had diagnosed fetal alcohol syndrome in patients, but only 28 percent had diagnosed fetal alcohol effects, in which the patients show some of the effects of fetal alcohol syndrome.

The study also revealed a link between physicians’ experience in diagnosing FAS/FAE and their level of comfort in dealing with the issues of alcohol-related birth defects. The more clinical experience a physician had with FAS/FAE, the survey revealed, the more likely he or she was to routinely take a mother’s alcohol history and to feel confident talking to parents.

School of Medicine begins pilot project in conflict resolution for students

One of the required classes for medical students this fall is a four-hour seminar on conflict resolution and negotiation. In the context of the required gross anatomy course, Leonard Marcus, Ph.D., an assistant professor of public health, and Barry Dorn, M.D., a clinical instructor of orthopedic surgery, will use lec-
tured, role-playing exercises and discussions to teach the students the importance of negotiating and communicating effectively.

Negotiating skills are essential to physicians, who must communicate with patients, physicians and other health professionals. Communicating effectively is equally important, as the first-year students will learn in their gross anatomy course, where they work in groups to dissect a single cadaver. Most of these students have excelled in their individual academic careers and find working in groups on such a high-anxiety task particularly stressful, according to Marcus, who is director of the newly established Program for Health Care Negotiation and Conflict Resolution at the School of Public Health. “We are presenting the work together in the gross anatomy course as a metaphor for their eventual work as physicians,” he said.

Alpert, Freund co-write guidebook for recognizing, treating domestic abuse

Two BUSM faculty members participating on the Massachusetts Medical Society’s Ad Hoc Committee on Domestic Violence have co-written a booklet on domestic violence that will be mailed to all physicians and medical students in the state this fall. The booklet is part of a package of materials being distributed by the society in one of the most comprehensive domestic-violence education initiatives in the country to date. The guidebook is intended to teach physicians how to recognize victims of partner, or domestic, violence.

“Our goal is to help physicians understand their role in recognizing and treating victims of domestic abuse,” said Elaine Alpert, M.D., an assistant professor of medicine, who heads the Ad Hoc Committee. Alpert co-authored the booklet with Karen Freund, M.D., an assistant professor of medicine and the director of the Women’s Health Group at the Evans Medical Foundation. The 27-page manual tells physicians how to recognize the signs of domestic abuse, how to bring up the subject with patients and counsel them, and how to report violence when it is appropriate to do so.

Heat exposure in first 6 weeks of pregnancy harmful to fetus

Researchers in the Center for Human Genetics have found that women exposed to excessive heat from hot tubs, saunas or high fevers during the first two months of pregnancy face a significantly greater risk of having a baby with a neural tube defect than women who are not exposed to such heat. Aubrey Milunsky, M.B.B.Ch., director of the center, said that the investigation underscored the need for further studies, but that “the data are sufficiently compelling to warn women that hot tub use during the first six weeks of pregnancy may be harmful to the developing fetus.” The study was published in the Aug. 18 issue of the Journal of the American Medical Association.

By interviewing 22,754 women, and recording the incidence of thermal exposure and the outcome of pregnancy, the scientists found that women who had experienced at least two heat exposures were three-and-a-half times more likely to have a baby with a neural tube defect, while women with three incidents of heat exposure were almost seven-and-a-half times more likely to have a child with a neural tube defect.

Among the most common neural tube defects are spina bifida, which occurs when the bony casing around the spinal cord fails to close, and anencephaly, a condition in which major parts of the brain and skull are missing. Spina bifida usually results in mild to severe paraplegia; anencephaly results in stillbirth or death within hours or days of birth. Such defects occur in one or two births per 1,000.

SPH faculty oppose excluding HIV-infected health professionals from practice

Excluding health professionals who are infected with the AIDS virus from practice does nothing to protect the public health, and has the potential to do considerable social harm, reported School of Public Health researchers in a recent issue of Milbank Quarterly.

Instead of excluding HIV-positive physicians, the experts said, U.S. health officials and policy makers should adopt an approach that recognizes a distinction between medical instruments or procedures that create a risk of infection and people who, perhaps because of a lack of medical skill, create a risk.

“The distinction is important,” said Leonard H. Glantz, J.D., a professor of health law. “If every HIV-positive health-care worker were excluded from practice, it would have virtually no impact on the epidemic. In contrast, medical instruments, practices and procedures can be made safer by design, or can be eliminated if they pose an unacceptable risk.”

Glantz and two of his colleagues, Wendy K. Mariner, J.D., and George J. Annas, J.D., co-authored the paper.

Newell named BUSM development director

Dorothy S. Newell has been appointed assistant vice president and director of development at the School of Medicine.

Since 1984, Newell has worked in the development office at Harvard Medical School, where she served successively as director of annual giving, director of major gifts, and finally, as director of development. During her years at Harvard, Newell established a successful program to secure major funding for basic science research and directed a $20 million library campaign.

“We are delighted to welcome Dorothy Newell to our staff,” said Dean Aram V. Chobanian. “She has the enthusiasm, ambition and experience needed to lead our fund-raising campaign.”

A graduate of Duke University, Newell is a member of several professional organizations, including the Planned Giving Group of New England and the National Society of Fund Raising Executives.

Ferrucci to head radiology departments

Joseph Ferrucci, M.D., recently was appointed chairman of the Department of Radiology at the School of Medicine, Boston University Medical Center/The University Hospital, and Boston City Hospital. Ferrucci came to Boston University from Massachusetts General Hospital and Harvard Medical School, where he was a professor of radiology.
“Dr. Ferrucci is one of the most outstanding radiologists in this country, and we are delighted that he will lead our radiology departments at Boston University Medical Campus,” said Dean Aram V. Chobanian.

Ferrucci is the author of many articles and has been a visiting professor at medical schools throughout the world. He also has been president of the American Society of Gastrointestinal Radiologists and the International Society of Biliary Radiology. He recently received the prestigious Walter B. Cannon Medal of the Society of Gastrointestinal Radiologists.

Briefly noted
Barry M. Manuel, M.D., associate dean for continuing education, recently was appointed vice chairman of the board of directors of the Joint Underwriters Association of Massachusetts by the Commissioner of Insurance. Charles F. Arkin, M.D., a professor of pathology, recently was appointed chief of laboratory medicine at Boston University Medical Center/The University Hospital. Herbert Z. Kupchik, Ph.D., a professor of microbiology and of pathology and clinical medicine, was an invited speaker at the 20th Meeting of the International Society of Oncodevelopmental Biology and Medicine in Sapporo, Japan, on Sept. 7. Kupchik’s presentation, entitled “Characterization of Human Colorectal Adenomas During Long Term In Vitro Culture,” was made in collaboration with Michael O’Brien, M.B.B.Ch., a professor of pathology and laboratory medicine; John C. O’Keane, M.D., an instructor of pathology; Paul C. Schroy, M.D., an assistant professor of medicine, and Shi Yang, M.D., a visiting scientist from North China Coal Mine Medical College, People’s Republic of China. The advisory committee for “Minority Capacity Building in Health Services Research” has selected John A. Rich, M.D., an assistant professor of medicine, as one of 25 fellows to participate in the Association of American Medical College’s Health Services Research Institute.

News & Notes
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