Finding sheds new light on spinal cord’s potential to heal

Research conducted by School of Medicine Professor of Surgery and Adjunct Professor of Neurosurgery Harry S. Goldsmith, M.D., and a colleague at the University of Ottawa has shown that spinal cord nerve fibers can be made to grow after complete transection. The research has captured international headlines because of its significant contribution to the medical community’s understanding of the spinal cord’s potential for healing.

In a study published in the Sept. 5 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 along to the next cells—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 1970s.

Goldsmith’s previous research also showed that surgical reconstruction of an injured spinal cord must be performed during the three-hour period immediately following the injury or it must be delayed until the edema fluid that inevitably 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 currently is underway at Boston University Medical Center/The University Hospital. Unlike the study described in this article, that investigation involves patients who have chronic spinal injuries, rather than complete, acute transections. Results are expected early next spring.

Medical Campus employees ‘Unite’

Employees serving as Medical Campus coordinators in the United Way fund-raising drive, in which Boston University is participating, gathered for a kick-off breakfast on Oct. 15 in the Hiebert Lounge.

Rosemary Kirwin, director of development at Center House, a rehabilitation agency for mentally ill and mentally retarded people, was one of a number of speakers who gave inspirational talks to the volunteers about the role of the United Way and the impact that their contributions have on its ability to serve. "You are the key to the success of the United Way and the agencies the United Way serves," she said. "I want to thank Boston University," she added. "BU is a leader in the community; we need more leaders to lead the way in lending a helping hand."

BUSM awarded partnership in health-care project with Armenia

The School of Medicine and two hospitals in Yerevan, Armenia, will form one of 11 long-term health-care partnerships announced last month by Secretary of State Lawrence Eagleburger and Alan Roskins, the administrator of the U.S. Agency for International Development (USAID). The $13.5 million partnership program, funded by USAID, is part of the U.S. government’s far-reaching effort to provide technical assistance to the Newly Independent States (NIS) in what was once the Soviet Union.

The program, which is managed by the American International Health Alliance (AIHA), will utilize the expertise of American health-care professionals to address the specific health-care problems facing each newly independent nation.

At the heart of the program is a series of exchanges, in which senior academicians, clinicians, nurses and administrators will travel to the various new nations to help their partner hospitals identify their most important clinical and administrative needs and to develop a plan for meeting those needs.

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"A building is almost like a human, the way it talks to itself when it's completed," observed Nick MacEacheren, the Morganti, Inc. superintendent of construction for the Center for Advanced Biomedical Research, as he walked across a floor of the building, stopping by the higher floors to confirm that things were on schedule.

"A building decides whether it's in trouble, whether it's heated correctly and cooled correctly," he explained.

On a sunny day last month, MacEacheren made his way across an upper-level floor of the building, passing an apprentice and a foreman who were working on a pipe in the ceiling, electricians installing wires, and plumbers putting pipes in place.

Coordinating these and the many other efforts that lead to the creation of this integrated, somewhat humanlike creation is MacEacheren's job. He schedules and oversees the work involved in giving the building a structure, an interior, plumbing, air conditioning, windows and fireproofing, and all other elements.

He is at the site from the initial groundbreaking to the final stages of development.

**Setting the schedule**

"I set the overall schedule and then monitor it to make sure we can do it," MacEacheren said, noting, with a slight chuckle, that 'things crop up that you never figure on during the day.'

"Some days a needed material doesn't arrive, which causes you to shift gears and move on to something else, but you still try to maintain the overall direction you want to get to," he said. "It's up to me to reschedule an activity to keep us on the original schedule."

"He'll tell you at nighttime what he wants done the next day, and then when you start in the morning he says you can't do that," interjected Jack Cronin, a mason foreman, in a playful tone.

Coordinating the progression in which certain projects are carried out is one of MacEacheren's biggest, and most constant, challenges. When the need arises to install a specific material on one floor, he may have to temporarily relocate people working on another project in the same area.

"One little thing can screw up the schedule," he said. "The problem is you get 20 little things every day."

When all of the major mechanical instruments for the building arrived within three weeks of each other, and had to be installed on the 10th and 11th floors (the "mechanical" floors), MacEacheren had to make sure that equipment would be delivered on time and that all materials and resources were in place.

Likewise, he had to foresee the impact of installing the precast metal bands that are integrated into the walls on the upper floors of the building. "The engineer sits down and, knowing what the building is going to ultimately be, designs his building to hold up [that weight]," he said. "But he's looking at the end. We have to put the building together. If we put all the precast on one side, we could actually make this building lean over," he said.

The 19 foremen who report to MacEacheren oversee specific construction functions at the site, managing, in total, an average of 155 workers each day. Using two-way radios that serve as tents to the upper reaches and back stretches of the building, these managers provide the guidance and judgment needed for making quick decisions.

"I went through engineering school, and read all the books, but I've learned more from guys like this than I would ever learn in that school," said MacEacheren.

Cronin, for one, has been in the construction business in New England for 44 years, and oversees 33 workers who construct the "skin" of the building, which includes the interior layout and partitions of the structure.

**Constructing the 'skin'**

The process of constructing the "skin" of the building is a detailed procedure, given the intricate design. They consist of interior concrete block, a layer of damp-proofing material, two inches of insulation, two inches of air space and an exterior brick, taking up 16 inches in total. A precast band weighing 1,000 pounds a piece lines the top and bottom of the windows.

Arthur E. Colley Jr., known as "Boots," is another member of the construction team who has a long history in the field, having been in the crane business for 35 years. While MacEacheren and the foremen's job is to coordinate construction activities, and the tradespeople's job is to carry out the physical construction, Boots' job is to make sure all of the workers get to the places they need to.

The self-proclaimed "nerve center of the job," Boots runs the mechanical lift that transports most of the workers and much of their light material to the various floors of the building.

"Nothing moves around here unless he says so," acknowledged MacEacheren. "You have to be nice to Boots. If it weren't for guys like him, this construction job wouldn't get done."

"I know everybody's first name on this job and I know just where everybody is at any time," said Boots. He brings spirit to his role at the hub of the building's activity, decorating the elevator every holiday. "I do this at all the holidays, including Thanksgiving, Christmas, Valentine's Day," he said.

**Tangible progress made**

The accomplishments of Boots and the other workers on the site are imperceptible from the street on a day-to-day level, but are clear close up. The tradespeople have already installed most of the mechanical instruments that will be used to control the heating and lighting systems of the building. Much of the siding of the building has been constructed, and partitions that delineate individual rooms are up on a number of floors.

While the work is demanding and constant, the workers do know when to take advantage of a good situation. Last summer, MacEacheren reminisced, "We watched the Tall Ships go past the U.S. Constitution and out past Deer Island, where they dropped their sails. It was also the day of the Ice Cream Social. So there we were, watching the ships and eating ice cream."

The cold days of November have set in, but, by next summer, when the Ice Cream Social rolls around again, the workers should be looking at a building in its final stages of development.
Employee reimbursement accounts open for health and child care

Employees may open tax-free reimbursement accounts for health or child care during the open-enrollment period, scheduled for Nov. 16 to Dec. 31.

The plan allows employees to have up to $5,000 a year deducted from their salaries tax free to pay for child-care expenses and $2,000 a year deducted from their salaries tax free to pay for health-care expenses not covered by health-care insurance. Employees specify the number of months in which they wish to have the deductions made.

A reminder will be sent out regarding the open-enrollment period just prior to its commencement. Application forms will be available in the Medical Campus Office of Personnel as of mid-November.

Employees must submit either the original receipts or cancelled checks to the Charles River Office of Personnel after the established deduction period. Because the money designated for tax-free status is considered a premium, any money not spent under the plan will be forfeited. Therefore, careful planning is essential for participating in either of these accounts.

Employees may be able to open a health- or child-care reimbursement account outside of the open-enrollment period if either their family status or job status has changed. For more specific information on this issue, employees should consult their Boston University Faculty and Staff Benefits Handbook.

Employees who have questions about reimbursement accounts should contact Maud Carty, benefits manager, concerning child care; and Joanne Fay, benefits specialist, concerning health care, in the Medical Campus Office of Personnel, at 638-4610 (x4610).

Details on exclusion allowance for retirement plan due out soon

Eligible employees participating in the Boston University retirement plan will be notified during the month of December about the maximum amount of income they may exclude from their income for the 1993 calendar year. Each year, Boston University calculates the amount that each participant may contribute to the plan based on a number of factors.

Participants will receive their individual maximum-exclusion allowance worksheets through inter-departmental mail. Employees should pay careful attention to changes made in the salary reduction agreement form. These changes will be explained in the memorandum enclosed with the worksheet. For further information, please contact Maud Carty or Joanne Fay in the benefits section of the Medical Campus Office of Personnel, at 638-4610 (x4610).

Six new bike racks to be installed

Six new bicycle racks are expected to be installed later this month at locations throughout the Medical Center. Four of the racks will serve as replacements, while two, holding 34 bicycles, will be installed next to the handicap ramp at the entrance to the Instructional Building of the School of Medicine.

The racks, which are more aesthetically pleasing than the older models, will be grounded to the pavement. They were selected and purchased on the recommendation of the Medical Center’s Bicycle Advisory Committee, made up of a group of bicycling commuters.

The new racks are in addition to those located outside of the Boston University Medical Center Hospital’s Emergency Department, in a corner of Parking Lot A, and on East Concord Street, next to the Talbot Green.

Three replacement racks, which will hold a total of 51 bicycles, will be installed in the area underneath the SkyLight Dining Pavilion. The other replacement rack, with a capacity to secure 17 bicycles, will be installed along the outside wall of the Goldman School of Graduate Dentistry, on the side that borders the Atrium Pavilion Plaza.
Parking update for Lots A, C

The Lot A-West parking area was relocated to the 600 Albany Street parking lot (the new Lot A) last month, to provide space for the new Boston City Hospital parking area. The City Hospital lot was moved from its original site to accommodate the construction of a parking/retail/child-care facility that will be the second building under construction in BioSquare, a medical complex being built along Albany Street by the Boston University Medical Center Hospital and Boston University.

The new parking configuration is the last alteration planned for the Albany Street lots until the opening of the first BioSquare building—the Center for Advanced Biomedical Research—sometime next winter, according to John Sullivan, director of parking and transportation services. Construction of the parking facility is expected to begin later this fall and take approximately 14 months to complete. Some work already has begun at the site, primarily involving the placement of utility lines.

Meanwhile, state Department of Public Works crews continue to work in Lot C, attempting to re-store and refinish support columns for the Southeast Expressway, located at the Massachusetts Avenue connector. Because of this ongoing work, there is no available parking in the lot for full-time employees who work the day shift. However, some spaces are expected to become available for these employees at the beginning of the new year, after the work on the columns is completed. A waiting list has been established for these employees. A limited number of Lot C spaces currently are available to part-time employees, students and full-time employees who work non-day shifts.

Applications continue to be accepted for Lot A; the cost to park there is $73.50 per month and must be paid through payroll deduction. Lot C parkers who wish to transfer to Lot A may do so at any time.

BUSM to assist Armenian hospitals

Partnership continued from page 1

School of Medicine Dean Aram V. Chobanian, M.D., and Michael Eliastam, M.D., medical director of Boston City Hospital, recently made a preliminary visit to the major hospitals in Yerevan as part of a survey team sent by the American International Health Alliance (AIHA).

According to Chobanian, the program will establish a model teaching hospital system and train physician leaders, senior hospital administrators, financial officers, computer-system technologists and physicians in modern methods of hospital management and state-of-the-art approaches to health-care delivery.

Teams of leaders from BUSM, Boston University Medical Center Hospital, Boston City Hospital, Boston University School of Public Health and other institutions affiliated with BUSM will help the two largest municipal hospitals in Yerevan work out a strategy for meeting their goals. Physicians from the University of Massachusetts also are expected to participate in the project. The program will focus in part on the hospitals' needs in emergency care and trauma. Accidents currently represent the major cause of death in the republic, even exceeding the high rates of death caused by heart disease and cancer.

"The devastating 1988 earthquake and the long-standing war in Karabagh have underscored the need for a trauma center that can become a model for other major hospitals in Armenia," said Chobanian.

As part of the program, senior staff from the Armenian hospitals will visit Boston for up to three months to continue their educational process.

AIHA will fund travel between the two countries and will coordinate the partnership's efforts to obtain medical equipment and other necessary resources. This program, officials at AIHA say, is essential to halting the deterioration of the health-care system in the newly independent state.

"The health-care system in Armenia is in crisis," said Chobanian. "At this transitional point in history, it is critical that we assist our counterparts in every way we can."

Make your holidays a little sweeter, with a freshly baked Thanksgiving pie.

Order your Thanksgiving pies from Chequers, and qualify to enter our raffle to win a 20-pound turkey. Choose from southern pecan, apple, pumpkin and apple-cranberry pies. Order forms will be available in early November. Watch your mail for details or call Chequers at 638-4146 (x4146) for information.

Order deadline is November 17.

Happy Thanksgiving.

Evening shuttle service schedule revised slightly

To better meet the needs of employees, the BUMC evening shuttle service schedule has been fine-tuned, and is now departing every half hour, at quarter of and quarter past each hour, beginning at 7:15 p.m. The last departure of the evening is 11:45 p.m. Employees may pick up the shuttle at the bus shelter in front of the Hospital's Atrium Pavilion.