SPECIAL ARTICLE
บทความพิเศษ

ORTHOPEDIC SURGERY UPDATE

A Report of the 83rd Annual Clinical Congress of the American College of Surgeons, Chicago October 12-17, 1997

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This meeting was held at McCormick Place South, the Chicago Hilton and the Towers, Chicago, USA. The topics and discussions in this report are only a part of the whole meeting as 15 to 20 sessions were held as parallel sessions each period. Orthopedics and trauma are the main content of this report.

Traumatic injuries to the perineum

Injuries to the perineum are usually caused by severe trauma from traffic accidents. Multiple organ injuries are commonly found. Severe bleeding is usually the primary cause of death in the acute phase. Infection of soft tissues, visceral organs and bones are common in the subacute phase. Proper diagnosis and active management by a well trained team, including the general surgeon, orthopedic surgeon, anesthesiologist, urologist, plastic surgeon and special nurses, are the keys of success. The main goals are to lessen motality and mobility of the patients. Exploration of the wound to suture or provide ligation of the bleeding points may be indicated in particular patients. Embolization and packing can be carried out and may resulty in stable hemodynamics in some patients. A by-pass operation of the lower gastrointestinal tract is usually performed to prevent fecal contamination. Ultrasonograms can lead to better diagnosis and management. Early reduction and stabilization of any unstable pelvic fractures should be performed as a part of resuscitation. External fixators with pins at the anterior iliac crest are the instruments of choice. A pelvic-C-clamp and pelvic stabilizer usually results in more injuries and complications. After the acute phase has passed, more than 40% of the patients needed further reconstruction of soft tissue, viscera and bone. Local flaps and distant flaps may be used for coverage of the wound. An individual plan must be made for each patient.

The basic science of tissue injury and repair

Severe trauma leads to a decrease in immune response, especially CMIR. There is much evidence which

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has been detected by the study of cytokines that reveals the retardation of PMN and antigen presenting cell activities. Insulin and insulin derived growth factors can minimize this process and can improve immune response in the patients. The optimum amount of glucose and insulin for prevention of infection and to promote tissue healing is under study.

Peripheral nerve entrapment and injury

Entrapment syndrome of the peripheral nerve is commonly found in general practice. The most important diagnosis tool is electrodiagnosis. Ultrasonogram and MRI may have some role in the diagnosis in particular patients who have some specific findings. Tumors and abnormal vasculature may be found in these patients. Open decompression and exploration of the nerve is the management of choice. However, in carpal tunnel syndrome, minimal open and percutaneous decompression, with or without arthroscopic assisting, are increasingly popular. However, the efficacy and safety of these procedures are still a matter of controversy. No significant difference in terms of speed of healing and early return to a normal routine have been reported by some authors. New techniques and instruments are under clinical trial.

Trauma the next frontier

Trauma is now one of the leading causes of death and has a great impact on the national economy. To lessen permanent damage, further injuries and time of transportation, well-trained and well equipped teams have been set up in many trauma centers in North America. Basic and advanced life support education have been reviewed and implemented in the training of these teams. Much improvement in the results of management of the severe trauma patients has been reported. The programme has been extented to countries in every continent. In Asia, Japan, China, Korea, Taiwan, Singapore, Indonesia, India, Saudi Arabia and Israel are active members of this programme. These centers help each other in terms of training, equipment and funding.

Trauma worldwide

From the Next Frontier topic, trauma worldwide was presented. There is a definite plan of the groups of trauma centers in North American and throughout the world to expand the concepts and programme of training to other developing countries. Every type of communication and connection is now being established. However, the most important problems are political and financial support. In many countries with unstable political conditions, the programme and well trained teams are used in civil wars but not for civilian injuries. Financial support for training and equipment support has led to the establishment of regional headquarters. Singapore is the headquarters in South East Asia and Indonesia is the helper. What shall we do for Thailand in the present situation?

Determining true costs of surgical practice

The cost of treatment for surgical patients has been rising very rapidly in the last decade. Most of the expenses are in the modern diagnostic and techniques for hospital expenses. Doctor fees have been frozen for a couple years while insurance costs also have been increasing. The risk of hepatitis and AIDS virus is now high enough to have an impact on surgical practice. Less invasive surgery also needs a certain number of expensive tools. How can these expenses be reduced? Education and selection of the techniques and equipment must be revised and refined. Education and training in surgery must be balanced with the income of the hospitals and centers. The use of cost data to enhance or improve reimbursement for surgeons is under study in many centers.

Engineering tissue replacements in surgery

To determine the feasibility of replacement of human tissues and organs, many projects have been implemented. Most of the researchers who presented papers at the meeting are in the molecular and submolecular levels. Transgenetic approaches and cloning technology to produce non-antigenic human organs are being

used with encouraging results. To minimize antigen-antibody reaction, encapsulated cell therapy and transplantation of immunoshield cells has been used in animals with good results. Tissue culture for manufacture of spare parts, especially bone and cartilage, by induced tissue transformation, has been reported with high potential to be used in clinics in the future. Retinal cell transplantation to retenopathy treatment has been studied in animals with encouraging results. Gene therapy for nerve repair and other traumatic conditions is becoming common.

Orthopedic motion pictures

With support from the American Academy of Orthopedic Surgeons, many video tapes were presented at the congress. The most interesting topics were new and modified approaches to hip, acetabulum and pelvis repair in severe fracture dislocation of the pelvis and acetabulum. A lateral incision was used and dissection was performed through both anterior and posterior aspects of the hip. Surgical approaches to the shoulder guided by arthroscopy for direct attack on the lesions were also presented. New instruments, both for internal and external fixation have been appraised to give definite indecation and contraindication. Most of the inventors understandably tried to promote their instruments and techniques; however, the academy and colleges should establish study groups for analysis and then present clear advantages and disadvantages of each item.

Orthopedic forum

The diagnosis and treatment of congenital anomalies of the extremities are moving from a new born to a fetus approach. Intrauterine diagnosis and surgery to allow normal development of the extremities have been used in animals with encouraging results. Control of bleeding in total joint replacement by using aprotinin and cryobased sealant has been presented with good results. The clinical effects and basic research of transforming growth factor beta 2 to promote bone healing was the subject of many articles. Many synthetic bone substitution materials such as crystallized calcium salt and collagen were presented with interesting results and may have clinical impact in the future. The metabolism of osteoarthrotic cartilage cells has been studied and genetic therapy, which is conveyed by Retrovirus to the sick cartilage cells, may improve the metabolism of the cells. Metabolism changes after ischemia of the skeletal muscles of the limbs have been presented at both molecular and submolecular levels. The goal of the studies is to prevent permanent cell change after ischemia. Roles of many enzymes and receptors were discussed, especially the protection function of transforming growth factor beta.

Scientific exhibits

Self-education of the management in multiple trauma and fracture dislocation was presented by many institutes. Diagnosis and management of tumor and tumor-like lesions of bone and soft tissue were shown in a program for personal computers. The genetic approach for cell therapy in tumors and trauma were also popular topics.

Other activities/services

Secretary staffs and office space were provided by a professional company. Electronic mail and communications via personal computers between the staff, exhibitors and the scientific programs was available. Message centers were available at every counter using taylored programs and recorded directly from verbal communications.

On Thursday 16, 1997, a group of Thai surgeons working in the US were hosts of Thai visitors at a dinner in the Four Seasons Hotel. Dr.Somprasong Songcharoen, Dr.Kumpol Dennison, Dr. K.Thupvong and Dr. Boonmee Chunprapaph made a special effort to provide warm hospitality and an enjoyable social event for the visitors from Thailand.