

Focus on Orthopaedic Nursing in New South Wales, Australia

By

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ORTHOPAEDICS and Orthopaedic Nursing are now being given a great deal of importance in Australia as the result of the high incidence of accidents caused by the rapid increase of fast moving vehicular traffic on the road and occupational hazards because of mechanisation in a vast number of fields. The estimated population of New South Wales is about three million and one in every three of this population owns a car. The impact of these accidents, if they do not kill the person outright invariably results in some major orthopaedic catastrophe. Accident units are becoming an important must in all the new hospitals being built and the older hospitals are fast establishing these units to cater for the emergencies of accidents.

The course in Orthopaedic Nursing conducted by the New South Wales College of Nursing in Sydney is both a practical and theoretical course, designed to develop a greater knowledge of the modern methods and techniques for those nurses who wish to specialise in this field. The course is for a duration of one academic year, the first two terms being devoted mainly to theoretical lectures at the College and the third term to practical work at the various hospitals both in the city and the country. At the end of the course examinations are conducted. There are two written papers, one in orthopaedics and the other in orthopaedic nursing, with an oral and practical examination on splints and plasters.

The syllabus is rather extensive and covers a wide field of subjects namely, physiology, applied anatomy, physics and chemistry, sociology, psychology, nutrition, pharmacology, public health and preventive medicine, ward administration, hospital planning, medical records and communications. All these subjects being included for the purpose of revision and widening the students' knowledge from every aspect. For the students doing orthopaedic nursing in addition to

the above subjects, special stress is laid on the subjects of applied anatomy, orthopaedics and orthopaedic nursing.

During the first two terms we visited a hospital once a week to observe their operative techniques in orthopaedic surgery. For the third term a programme was drawn up for us to visit and work in various hospitals; the tenure at a hospital being from two to three weeks. The hospitals visited being orthopaedic hospitals or large general hospitals with special orthopaedic wards. We visited the following hospitals:

1. The Margaret Reid Orthopaedic Hospital for Children
2. Repatriation General Hospital
3. Royal Alexandra Hospital for Children
4. Royal North Shore Hospital
5. Prince Henry Hospital
6. Prince of Wales Hospital
7. Cooma District Hospital
8. Hornsby District Hospital

The Children's orthopaedic wards proved of particular interest, because the main concern of the staff was to keep the children contented and happy. Television sets are provided in these wards and prove a great boon in preventing life from becoming monotonous for them especially for the long-standing cases. Outdoor treatment is a striking feature at the Margaret Reid Orthopaedic Hospital for Children. Beds are light and easily wheeled out into the open where the children spend the major part of the day, except when the weather is inclement. Education for the children is continued except for the very ill patients and teachers are especially attached to the hospitals for this purpose.

Tuberculosis of the bone is rarely seen, but conditions like Perthes, Congenital Dislocation of the Hip, Talipes Equino Varus, Osteomyelitis, Idiopathic Scoliosis, and Residual Orthopaedic Defects after Poliomyelitis are the common orthopaedic occurrences among the children. Rare cases like Osteo-

genesis Imperfecta, Craniocleidodysostosis and Arthrogryposis Congenita Multiplex were seen at the Children's Hospital.

In adults, trauma to the bones with resultant fractures accounts for the majority of orthopaedic treatment and these are immobilized in the usual way.

Fractures of the spine are on the increase and are mainly due to traffic accidents or high diving. In spite of the best efforts in treating these cases the resultant hemiplegia or quadriplegia is something only to be contended with by the occupational therapists, who with the many useful devices designed to help these patients, help them to some degree to accomplish the daily tasks of living, as feeding and dressing oneself. Paraplegics eventually manage fairly well and most of them drive their own cars which have hand controls. They are taught new jobs and a resettlement officer ensures that they are well-established in their new jobs. Quadriplegics present a more difficult problem and most of them spend several years in a hospital and are eventually transferred to convalescent homes.

Fractured femurs and osteoarthritis are the most common orthopaedic conditions seen in the elderly. The former is treated by an open reduction and an internal fixation by a pin and plate. Common varieties being used are the McLaughlin, McKee, Smith Peterson and the Jewett Nail and Plate. In patients over seventy years a replacement arthroplasty is frequently being done, as it enables very early mobilization in the elderly. For osteoarthritis conservative treatment initially, until excessive pain, deformity and stiffness are indicative of an operation to relieve these symptoms. Osteotomies, replacement arthroplasties and arthrodesis are the operations most commonly being performed.

The physiotherapy and occupational therapy departments play a very important part in the rehabilitation of the orthopaedically

handicapped patients. These departments are well staffed with highly qualified and well trained physiotherapists and occupational therapists.

The working of the social departments attached to the hospitals deserves special mention. Cases are referred to the departments by the doctors, ward sisters and other ancillary workers such as the physiotherapists and occupational therapists. They then sort out the social problems and where financial help is required they allocate money from various funds that are at their disposal.

Another interesting item on our programme of visits was the visit to the Spastic Centre of N.S.W. Here the children are assessed according to their physical and mental handicaps and are accordingly grouped. Education is carried out in this centre. Teachers have no special training, but are those who volunteer their services and have an aptitude and patience for this sort of teaching, namely teaching of the mentally retarded and physically handicapped children. Also attached to the centre are

speech therapists, educational psychologists and occupational therapists. Specialists in the fields of medicine also visit the centre frequently to carry tests such as E.E.G., X-Rays, dental treatment and any corrective surgery required.

Most of the hospitals with large orthopaedic centres have their own splint, artificial limb and boot-making departments attached to the hospital and the manufacture of frames, splints, boots calipers and artificial limbs are all locally done, according to the pattern ordered by the surgeon.

Operative techniques employed are very similar to those used in India. The vi-steri drapes are certainly an improvement on the skin towels and stockinette used to exclude the skin from the operation field. It is polvinyl type of cellophane which comes in a large strips with a sticky surface on one side. After the skin preparation has been completed it is applied over the site of operation. It adheres closely to the skin thus completely excluding it from the field of operation.

Throughout the course, during

both the theoretical and practical terms we were given the maximum opportunity of seeing and learning and without the help of each and every member of the various staff our training would not have proved so beneficial.

Our course was brought to a befitting conclusion by the very impressive graduation ceremony at the Prince Henry Assembly Hall, at which the successful students were presented with their diplomas and certificates. As all good things come to an end the course at the College concluded and though it involved a lot of hard work, it had its compensations and I am sure that most of the students will agree with me, when I say that it was a year well and happily spent. It was indeed a wonderful opportunity not only from the point of view of the experience and erudition gained in this vast field, but also for the opportunity it gave us to meet students from different countries and to learn a bit more of their culture and social customs. And it is certainly an excellent way to foster goodwill and improve cultural relations between different countries.

Hyperbaric Oxygenation — (Contd. from page 321)

from the atmosphere to the mitochondria within each cell is fundamental to the preservation of life in all mammalian organisms. Subsequent to the recognition that some pathologic processes result from hypoxia, attempts have been made to provide the tissues with additional oxygen or decrease their metabolic requirements.

Hyperbaric therapy is not new. For about one hundred years pressure chambers with room air have been used sporadically in Europe. However, the results usually did not justify the enthusiasm of the proponents of this therapy. Within past ten years, the combination of breathing pure oxygen plus hyperbaric environmental conditions has caused a resurgence of interest in this method of treatment. Breathing pure oxygen at elevated atmospheric pressure produces a striking increase in oxygenation. Carbon monoxide poisoning responds dramatically to high pressure oxygen therapy. By providing oxygen in solution in the blood, apart from hemoglobin, HPO immediately offsets the hypoxia. HPO may also be effective in the treatment of barbiturate poisoning and, perhaps cyanide

intoxication.

A group of infants with cyanotic congenital cardiac lesions (right to left shunt, pulmonary or tricuspid atresia, transposition of the great vessel) who underwent open heart surgery in HPO chambers had significantly improved oxygenation during surgery. The ultimate results depended upon the adequacy of the surgical procedure, but these infants apparently withstood surgery better because of HPO. In asphyxia of the newborn, the hemoglobin is unsaturated and the alveoli are airless. Hyperbaric oxygenation, at pressures up to 4 atmospheres, proved effective in providing oxygen to the anoxic tissues of apnoeic newborn infants.

In patients where massive trauma has reduced the effective blood supply to an extremity, HPO provides distinct improvement in oxygenation of the part. Even with injury to the main artery of the limb, HPO preserved tissue viability until reparative surgery was performed. In a number of patients with chronic vascular insufficiency of the lower extremity, HPO therapy resulted in subjective improvement, objective evidence was manifest only

in the reduced need for sedatives.

Hypoxia reduces the sensitivity of cells to irradiation. Because of inadequate blood supply, many neoplastic cells are hypoxic. Hyperbaric oxygenation in addition to radiation therapy has given good results in treatment of certain types of malignancy, but full controlled studies have not been performed. A most exciting vista for HPO is in the treatment of myocardial infarction and cerebral insufficiency. Early use of HPO following coronary occlusion in dogs reduces the likelihood of ventricular tachycardia and fibrillation. The roster of possible therapeutic applications of HPO can be expanded almost without limit.

However, to avoid repeating past mistakes, glowing enthusiastic case reports must be documented with well controlled clinical studies and careful evaluation of the therapeutic effectiveness of HPO.

Bibliography

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