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Presidential Address – 8th International Congress of Hyperbaric Medicine
Long Beach, California – August 19, 1984

by Dr. Julius Jacobson, then President of the ICHM

This accompanies the introduction by Dr. Michael B. Strauss, Page 26, in the 2023 First Quarter issue of Pressure, and the abridged version appearing in that edition.
I am deeply honored to serve as President of this, 8th International Congress on Hyperbaric Oxygenation. We had planned originally to have the meeting in New York City, but as things developed, there were uncertainties as to the exact timing and location of the U.S. political conventions that were to occur. Since New York City seemed a likely place for one or the other of the conventions, it seemed best to avoid this possible conflict, hence our meeting today in Long Beach. I, therefore, wish to thank Drs. George Hart and Michael Strauss, and their many associates, who have done the real work for this meeting.

In choosing the topic for a presidential address, two immediate choices come to mind. The first is to present another scientific paper, the second is to look back historically, give a philosophical discussion on what has occurred in the past and what the future holds in store. I have chosen this latter approach.

The first International Congress on Hyperbaric Oxygenation took place in Amsterdam in September 1963, 21 years ago. It was, fittingly, under the auspices of the Department of Surgery of the University of Amsterdam with the leadership of Dr. Iete Boerema. In those early heady days, the neophyte in hyperbaric oxygenation went either to Dr. Boerema’s service at the Wilhelmina Gasthuis or to that of Sir Charles Illingworth at the Glasgow Royal Infirmary. Physicians, engineers, and administrators from all over the world flocked to these centers and were uniformly received with grand hospitality and unstinting time by their hosts. It is only retrospectively that I really appreciate how these two great men and their associates, gave of their time and energy to get the field under way. However, it would be remiss not to mention a third center, namely that developed at the Duke University Hospital under the leadership of Dr. Ivan Brown and his able associate who has played such an important part in the intervening years, Dr. Herbert Saltzman.

Only when we had built our chamber at the Mt. Sinai Hospital in New York City, did I appreciate the tremendous amount of time and effort that went into helping new centers get started. In this respect, I fondly remember a call from the State Department setting up a visit the next day for the leading Russian surgeon, Dr. Boris Petrovsky.

On the plane going back to Moscow, after our meeting Dr. Petrovsky learned that he had just been appointed Minister of Health of USSR. His visit was soon followed by a Russian delegation consisting of a number of engineers, administrators, and a young medical man by the name of Yefuni, now academician Yehuni. These visits of course led to the construction of the largest hyperbaric facility in the world, at the Surgical Research Institute in Moscow, which many of us had the privilege of seeing at the 7th International Congress, 3 years ago. To match the hospitality and fellowship of that congress would be absolutely impossible.

I wonder if the tensions of this world would be defused if the political leadership were replaced by the medical leadership.
Reminiscing about visitors to our chamber, I clearly remember a week or two spent with us by Eric Kindwall, a young psychiatrist who had become interested in diving medicine while at the diving facility in New London, Connecticut. I remember his calls for a number of years thereafter asking how we would handle this problem or that. When thinking of Eric, I remember the old axiom that if the student does not end up being better than the teacher, then the teacher is not very good. In this particular case, I must have been a superlative teacher.

In those early years hyperbaric oxygenation seemed, to us all, to be a major breakthrough for the betterment of mankind. The next international meetings were held in quick succession; Glasgow in 1964 one year later than the first, and the 3rd international congress at Duke University in 1965. At this point, it became apparent that progress was occurring less rapidly than we had hoped. The major facts seemed to be in, and it was decided to delay the next meeting until 4 years later in Sapporo, Japan with Dr. Juro Wada as the host. Apart from the scientific aspects, I shall never forget going into the opening ceremony to find 20 women, each gracefully playing a koto, all clad in beautiful gowns, one in white and the other 19 in pink, nor the tremendous firework display. Two years ago, I had the privilege of going back to Japan to talk to what is now the world’s largest national hyperbaric society, under the presidency of Dr. K. Sakakibara. The next meeting 4 years later was in Vancouver, Canada in 1973, with Dr. William Trap, now deceased, as the host, a most wonderful meeting indeed. The next meeting, in Aberdeen, Scotland, was hosted by Dr. George Smith, who had moved on to become professor of surgery at that institution, having left Sir Charles Illingworth. The bagpipes were much louder but no less memorable than the kotos. Dr. Smith is now practicing in the United States and cannot be here.

An interesting thing happened at the 1981 meeting in Moscow. Instead of observing, the now usual 4-year interval, it was felt that the pace of hyperbaric research had suddenly quickened and that the next meeting should be held in 1984 instead of ’85. In the next 3 days we shall all see if this was a correct decision. The titles are tremendously interesting; we hope the contents will satisfy our expectations.

Initially, hyperbaric oxygenation was believed to be a tremendous medical advance. This seems to happen with all major developments in medicine, only to be replaced by skepticism, and a fall-off in activity. Then, the new modality settles down to a concrete place, where its values and limitations are appreciated. I thought that this had happened in hyperbaric oxygenation at the time of the last meeting.

Along came the possibility that hyperbaric oxygenation was valuable in the treatment of multiple sclerosis. The physicians using hyperbaric oxygenation fall roughly into two groups, the honest observing clinician and the quacks. Unfortunately, the news media listen to the most vocal and these are often the quacks. The treatment of multiple sclerosis serves as an excellent example. Its success was highly touted in the media. A great many patients have been treated at a great many centers. Millions of dollars have been spent in building new facilities with the idea of treating this condition. Hardly a week goes by where I have not received an inquiry about building a new facility at one hospital or another with this disease in mind. A good deal of talk had gone on initially about setting up randomized studies for the treatment of these patients. It is
a sorry state of affairs, that not a single paper was received by the program committee, on the subject of multiple sclerosis, that was considered worthwhile for presentation at these meetings.

I am as guilty as the rest of you. We started treating such patient’s and have anecdotes to tell; typically, the patient was unable to walk and after treatment was able to get up and do so. This kind of story is difficult to refute when the patient comes asking for help. Such anecdotes can be told about virtually every condition treated in the chamber. I believe that the treatment of carbon monoxide condition treated in the chamber. I believe that the treatment of carbon monoxide poisoning and osteomyelitis and osteoradionecrosis, and the treatment of decompression sickness and air embolus are the only ones that are really on solid ground. This is reprehensible and recalls the early work that was done on the treatment of senility.

The work on senility was done at a first-rate center in Buffalo, under the direction of Drs. Jacobs & Alvis. The work, initially, appeared to be excellent with an experimental design where the patient served as his own control. I remember clearly going to visit that unit with a group from our institution, one of whom was a geriatric psychiatrist. His initial impression, born out by later work that was published from our institution and others, was that the hyperbaric therapy was essentially effecting nothing. The important factor was the number of depressed patients in the treatment group. When these patients were suddenly given attention, by being taken to the chamber several times a day, and by psychologists giving evaluation tests and so on, they suddenly ceased to be depressed and did better in the cognitive functions. It is another indictment of our specialty that hyperbaric oxygenation is still being used for the treatment of senility at some centers.

At various meetings we have heard about the treatment of peptic ulcer disease, the use of hyperbaric oxygenation in pregnancy and the difficult delivery, and at this meeting there will be papers on the treatment of peritonitis. It is perfectly obvious to any thinking person that a great deal of clinical investigative work will be necessary before hyperbaric oxygenation should be used widely in these situations. It is up to us to see that there is adequate reason, before we start treating patients.

In the early days it was thought that apnea neonatorum and tetanus were was to be greatly helped by hyperbaric oxygenation therapy. This belief, too, has gone by the wayside. Radiotherapy results were supposedly going to be much more effective when paired with hyperbaric oxygen. People came from far and wide to have treatments for severe chronic respiratory insufficiency. These, too, have gone by the wayside. As yet, we have not convinced our infectious disease brethren that hyperbaric oxygenation has any value in the treatment of gas gangrene. There was great initial enthusiasm emanating from our hose area that burns would heal much more rapidly when exposed to hyperbaric oxygen. This terribly important contribution, if it be one and I believe it probably is, has never had sufficient work to convince the scientists in the field.

There is even a hyperbaric chamber on the market, which is being widely sold, that simply places the extremity of a patient in a small chamber. It should be perfectly obvious to any thinking person that as soon as the pressure on the extremity exceeds the arterial pressure,
blood will stop flowing. Perhaps a bag of oxygen around an extremity has some value, but the patient is deluded if he is told that he is being given hyperbaric oxygenation.

It was originally shown by our group and confirmed by others that hyperbaric oxygenation will quickly bring down increased intracranial pressure. Of this there is no doubt. On the other hand, this potentially valuable therapeutic measure has never really been studied. Is it more effective that steroids or the hyperosmolar solutions? It is truly sad that we do not have a definitive study on this subject.

With this 21-year perspective represented by this 8th International Congress, the paper that I most look forward to hearing is that by Kramer & Workmen entitled “A Technique for Randomized Clinical Trials in Hyperbaric Medicine”. I have no advance knowledge of what this paper will say, but if my memory is correct, it is the first such paper ever presented at one of these congresses.

Unless we, as clinicians, start paying attention to the concept of well-structured randomized clinical trials, there will not be many more of these meetings. I do not know why the attendance at this meeting is only half of that present at previous meetings. It may well be the currency exchange rate or the time of the year, or the sorry state of research funding around the world, or my own poor leadership. I am fearful, however, that it indicates a disenchantment with hyperbaric oxygenation despite the recent flurry of interest in the subject.

I know as a clinician that gas gangrene is dramatically helped by hyperbaric oxygen. This form of therapy has endured and will win out in the end because it is valid. Should hyperbaric chambers be the first line of treatment for most patients suffering from smoke inhalation? I do not know and will not know until a proper randomized study is carried out. As clinicians it is our role to help people. When we have a modality that makes a great deal of sense physiologically, it is very difficult to withhold the therapy. On the other hand, unless we do so, in the long run, the chamber facilities will once again revert to scrap metal, as has happened to numerous chambers in the last 20 years. We shall simply repeat the history of the 19th century when there were hundreds of chambers in existence which had as much scientific validity as the mineral water spa. I should hate to see this happen and so would you.

In closing, I therefore propose that some mechanism be set up for running randomized clinical trials in the field of hyperbaric oxygenation. It would be far easier to do if this congress had a membership structure. The Undersea Medical Society could conceivably serve as a suitable vehicle. Perhaps we should establish an international hyperbaric medical society to accomplish the goal. Perhaps in the next few days, in addition to hearing many fine papers, we can explore these possibilities further.

Thank you for the privilege of serving you all.