

to the affected sinuses themselves. Experimentally however pressure changes have been demonstrated to be inadequate stimuli for producing serious discomfort in these cavities.⁷ The pain is probably referred from the more pain sensitive sinus ostia, infundibulum and turbinates. This explains partly why the clinical referral patterns in Fagan's series⁶ did not correlate radiologically with the affected sinuses.

The surgical management of recurrent sinus barotrauma is rarely discussed. Edmonds reported that 12% of cases in his series required surgery. Endoscopic surgery was mentioned as showing promise.³ The predisposing factor for recurrent sinus barotrauma is ostial insufficiency. FESS opens affected sinuses, usually with minimal patient morbidity. Early experience indicates that FESS is a useful technique in divers suffering from recurrent sinus barotrauma if surgical intervention is being considered.

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THE WORLD AS IT IS

THE 1994 HYPERBARIC TECHNICIANS AND NURSES ASSOCIATION MEETING

Robert Borer

The Hyperbaric Technicians and Nurses Association (HTNA) held their 2nd Annual Scientific Meeting on Diving and Hyperbaric Medicine in Fremantle, Western Australia in early September 1994. The Esplanade Hotel was a superb venue, satisfying all the Meeting's requirements, as well as providing a pleasant place for old and new colleagues to discuss hyperbaric activities occurring throughout Australia.

The program highlights were the four presentations from the invited guest speaker, Professor Jon T. Mader, former president of the Undersea and Hyperbaric Medical Society (UHMS) and current Head of Internal Medicine and Marine Medicine at the University of Texas, Galveston, Texas, USA. There was an even balance between medical and diving related topics in the papers presented during the two day meeting. Scattered within each session were reports and technical papers that provided information on

unique diving practices such as; wreck location with magnetometry and side scanning sonar, medical hyperbaric chamber design, training and operations of police divers, marine archaeology and hyperbaric aspects of extravehicular activity in space.

The first day, medically oriented program, was begun by Professor Mader presenting a clear description of the mechanisms by which adjuvant hyperbaric oxygen (HBO) enhances recovery from chronic infections such as osteomyelitis. Subsequent papers reported on the adjuvant use of HBO in mucormycosis, chronic inflammatory otolaryngological problems and soft tissue injury caused by radiation therapy. Two papers described toxicity risks; the first, carbon monoxide poisoning in new Asian immigrants using charcoal briquettes indoors; and the second, a seven year incidence of acute CNS oxygen toxicity during chamber operations with 2.8 bar 100% oxygen exposure. Aural barotrauma in a general practice was presented with cases illustrating pitfalls in assessment and diagnosis. Jon Mader concluded the medical presentations with a comprehensive review of the adjuvant use of HBO in

chronic non-healing diabetic wounds of the foot.

The second day, with the diving oriented program, attendance was doubled, with participation from recreational diving professionals (instructors). Three presentations from different regions of Australia related experiences in divers working in commercial aquaculture; pearling in Broome, Western Australia, salmon farming in Tasmania and tuna farming based in Port Lincoln, South Australia. Descriptions of these industries and the incidence of decompression illness (DCI) in this workforce revealed the successes and future challenges in improving safe diving practices. Fremantle Hospital Hyperbaric Unit reported a 16% incidence of residual symptoms, during a four and a half year retrospective review of sports divers receiving recompression therapy for DCI. The dangers of nitrous oxide anaesthesia or analgesia causing DCI in a diver undergoing an operation soon after diving showed up the general lack of knowledge in the medical community of gas load risks. A preliminary report of in-water Holter (cardiac) monitoring of experienced recreational divers raised questions about cardiac related diving risks and their identification. Professor Mader described a rare case of acute progressive pulmonary decompression illness with pulmonary oedema and its response to recompression treatments. A lively discussion resulted from the presentation of risks vs. benefits of nitrox diving by recreational divers.

In addition to the formal program, the participants

were provided with tours to the submarine escape training facility at HMAS STIRLING and the Fremantle Hospital Hyperbaric Medical Unit. All observers were awed by the perfectly controlled slow ascent from an air lock at 20 m to the surface using only the gas volume of the lungs for buoyancy control by a submarine escape instructor.

Congratulations to the Fremantle Hospital Hyperbaric Unit staff, especially Sharon Keetley, the HTNA and the generous sponsors for organising an excellent scientific and social program. All the presentations kept to time, the audiovisual support worked well throughout, and it was encouraging to hear good quality papers from the HTNA members as well as from the medical community.

I look forward to the HTNA's 3rd Annual Scientific Meeting on Diving and Hyperbaric Medicine in Melbourne, September 22-23, 1995, at the Carlton Radisson Hotel, organised by the Hyperbaric Medicine Unit of the Alfred Hospital. For those interested in the 1995 meeting, contact Kevin Fabris or John Houston: (03) 2760-2323, fax: (03)276-3780.

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DIVING DOCTOR'S DIARY

DIVING IS A PAIN IN THE GUT

Carl Edmonds

Case report

JD, a male aged 31, had been scuba diving for two years, logging 110 hours over 160 dives.

He had no difficulty for the first couple of days of any diving trip, but then would develop a burning pain in his epigastrium, and the right hypochondrium. It would last for four or five days. He would be forced to suspend diving.

Food aggravated the discomfort, mild antacids relieved it. He tended to sleep propped up at night during these episodes. Sometimes donning the diving equipment (double tanks, wet suit, weights etc.) also aggravated the disorder. He commented that he often belched when ascending the diving ladder.

On the most recent diving trip he only lasted until the second day before the abdominal pain caused the dive to be aborted. On reaching the surface he vomited (although this tendency was actively suppressed whilst underwater). There was no history of motion sickness, the seas were calm and there was no alcohol intake. (They do not make divers like they used to.)

Apart from the pain being observed in association with diving activities, he had no other clinical problems.

Provisional diagnosis

A provisional diagnosis was made of ascent gastrointestinal barotrauma and reflux oesophagitis. Referral to a gastroenterologist was arranged.

Discussion

The symptomatology was easily explained, with