

ENT PROBLEMS OF DIVING

Dr Bill Hurst

The common causes of nasal obstruction are septal deviation, allergy, polyps, vasomotor rhinitis and infection. Polyps are usually the result of allergy or infection.

Acute sinusitis, often precipitated by a cold, inhalation of infected material or by infected teeth, requires treatment with antibiotics (Amexil, Bactrim, Tetracyclines) and decongestants. The infecting organism is often a haemophilus. If there is no improvement in two weeks antral washout should be considered.

Chronic sinusitis which gives rise to a continuous purulent nasal discharge, nasal obstruction and a headache, should be treated by operation, either an intranasal antrostomy or a Caldwell-Luc.

Sinus barotrauma. In the series reported by Fagan, McKenzie and Edmonds, there were 68 patients with barotrauma of descent and 32 with barotrauma of ascent. The common symptom was frontal pain. 50% had recently had an upper respiratory tract infection and 50% had ear abnormalities at the same time.

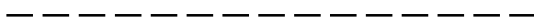
The best prophylaxis is not to dive. The acute phase should be treated with decongestants.

Otitis externa. Before going to the tropics one should have wax and debris removed from one's ears.

For prophylaxis he recommended Vosol, which contains acetic acid in 70% alcohol. This lowers the pH and inhibits the division and multiplication of pseudomonas. The alcohol helps dry the ear.

For treatment he recommended Sofradex, which contains Framycetin, Colistin and Hydrocortisone.

Other prophylactic drops could be used, eg. aluminium acetate, gin or vodka.



Physiology of Immersion

Glen Egstrom

NAASA published an annotated bibliography of immersion and its effects in 1974 which he had found very useful.

Immersion affects respiration. A person immersed to the neck has a decrease of his expiratory reserve volume of 11% and 20 cm underwater using apparatus there is the same effect. Breathing oxygen neck immersion reduced the vital capacity by 22% compared with air breathing control. Oxygen breathing potentiates atelectasis, which can be reduced by forced deep inspirations. Nitrogen elimination is increased with immersion to the neck. In 35°C water it is 35% more than in air, while in 37°C water it is 42% more. The rate reduces with time and the increased elimination is probably due to increased peripheral circulation.

Vail showed some years ago that there was a reduction in small airway diameter with forced expiration leading to collapse and gas trapping. Even in shallow immersion one gets gas trapping with a decrease of the vital capacity of 2%. Exercising in the horizontal position gives rise to a lesser decrease. Going from negative through the eupnoeic to positive pressure breath can negate the changes.