

ALLERGIC REACTIONS TO MASK SKIRTS, REGULATOR MOUTHPIECES, AND SNORKEL MOUTHPIECES

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SCOPE OF PROBLEM

A severe intra-oral irritation, vesiculation, and generalized inflammation which I attributed to a systemic reaction first called to my attention the clinical entity of allergic reactions to diving equipment. Seven years later I published a small "blurb" in Skin Diver's Driftwood Column and the response made me aware that this problem was far from unique with me. More than fifty letters, some agonizing, were received and, during the past year, I have received direct information on many more cases. One scuba instructor, a very fine observer, stated that about 25% of her students showed some reaction to regulator mouthpiece. Allergic reactions caused by fins and/or fin straps have also been reported to me.

ETIOLOGY

The actual chemical constituents of the rubber used in the manufacture of mask skirts or mouthpieces are unknown. However, one of the most common causes of contact dermatitis in surgeons who wear rubber gloves is the antioxidant or accelerator mercaptobenzothiazole. This may be a factor in the condition I am describing and its elimination would probably be helpful. There could be other etiological agents and constant pressure could be an additional factor. It must be borne in mind that frequent minor insults to body tissue, while not producing symptoms, can be cumulative enough to cause complete sensitisation. For this reason, a diver may use a mask, snorkel, or regulator mouthpiece many times without severe reaction until this endpoint is reached. Then there occurs a full-blown contact dermatitis of the face or a severe intra-oral inflammatory process.

TYPICAL CASES

Mask In the past, irritation from a facemask has been known as "mask burn" and was frequently passed off as a necessary annoyance of scuba diving. Characteristically, this varied from a red imprint of the mask skirt contact with the face all the way to a severe disabling erythematous reaction, with vesiculation, severe pain, weeping, and crusting of the skin. I saw one case so serious that I suggested hospitalization under the care of a dermatologist. When a severe reaction occurs, it takes weeks before it subsides and a mask can be worn again.

Oral Reaction to Mouthpiece Minor insults can occur in the mouth without disabling symptoms for long periods of time. However, when a reaction occurs, it looks thus: a mild burning sensation of the mouth when hot drinks, fruit juices, or heavily spiced liquids are taken progresses to inflammation, redness, vesiculation of the oral mucosa, gingiva, and tongue; and I have seen it extend into the pharynx. The pain is severe! This clinical entity could be linked to a cross between a very severe aphthous stomatitis and trench mouth. (The differential diagnosis could be made by history and microbiological studies). I have observed cases where eating and talking had to be curtailed.

TREATMENT

The treatment, of course, is to first remove the irritant - stop diving temporarily! If the reaction is severe, consult your physician and show him this article. Symptomatic relief for serious intra-oral reaction has been obtained by using a mouthwash consisting of equal parts of Elixir Benadryl and Milk of Magnesia. This necessitates a medical prescription. Severe reactions on the skin of the face require

the services of a skilled dermatologist.

Future treatment requires the use of a hypoallergenic mask and mouthpiece. This statement requires a recommendation. While there may be others, I have been working with Dick Bonin, President of SCUBAPRO, who has been aware of this problem and has wanted to help, not to make money but to assist in making diving more comfortable and pleasant. We had talked about making these products from silicone rubber, since in my specialty I have seen this material (Dow Corning Medical Grade Silicone) used in thousands of cases and have never yet encountered an allergic reaction. (This is part of my speciality of Plastic Surgery). I had also talked with the president of a scuba equipment manufacturing firm about eliminating mercaptobenzothiazole and discovered that he already had in his inventory a gum-rubber mouthpiece that did not contain this clinical irritant. It was tried and found to be hypoallergenic and I recommend it. Other masks made of silicone rubber are available and I feel they are hypoallergenic and I recommend them.

In conclusion, I wish to observe that any individual with any kind of allergic history, who is diving or planning to dive should consider the purchase of silicone or gum rubber mouthpieces and masks.

The author of this article is a Plastic Surgeon with 13 years diving experience, NAUI Certified, Diving Medicine, and a member of UMS since 1968.

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The article by Dr John Alexander, which first appeared in PRESSURE (Feb 1976) is reproduced by permission of the author. It is one more reminder that nothing is entirely neutral and innocuous under all conditions. Divers are reminded of this fact whenever they hear the words 'Inert Gas' applied to Nitrogen, Helium, etc.

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SAFE EVACUATION OF DIVERS UNDER PRESSURE Continued from page 48

Immediate response to local emergency:

- Is the problem immediate?
- How much time is available to make decision on evacuation?
- What men are available to assist?
- What power is available to assist?
- Does the weather forecast suggest that a compression chamber can be safely launched into the sea?

Evacuation

Evacuation under pressure must be classed as the ultimate emergency, the emphasis being placed on "Prevention", "Continuing Awareness" and "Immediate Response".

This paper is circulated for consultation. The increased availability of diving ships in the North Sea may well help to improve the chances of safe evacuation under pressure. In turn this may lead to the need for standardised mating techniques in the long term. Constructive comments, proposals and recommendations will be very much appreciated. Address for correspondence: Commander SA Warner, Chief Inspector of Diving; Department of Energy, Petroleum Engineering Division, Thames House South; Millbank; London SW1P 4QJ; UK.