Pulmonary Edema of Diving

What is pulmonary edema?

Pulmonary edema is the sudden filling of the lungs with fluid, generally thought of as being caused by a failure of the left side of the heart to pump properly.

What is the cause?

Pulmonary edema, characterized by cough, shortness of breath, and hemoptysis, has been observed in both divers and surface swimmers. This is a relatively rare condition whose etiology is uncertain, but would appear to be related to immersion. Divers may dive for many years before first experiencing symptoms; thereafter, they may experience recurring episodes interspersed with periods of normal diving.

Characterization of an attack!

Symptoms may begin on the bottom, during ascent, or shortly after ascent -chest pain being notable in it's absence, which helps to eliminate chokes as a diagnostic possibility. Chest examination reveals rales, and chest radiographs show the classic pattern of pulmonary edema. Significant decrease in arterial O2 may be present. Symptoms and signs usually resolve spontaneously over 24 hours.

Precipitating causes

Episodes appear to be precipitated by factors that increase cardiac preload and afterload, including immersion in water (particularly cold water), heavy exercise, negative pressure breathing, and predive fluid overload.

What To Do

Get the diver out of the water
Elevate the head in the sitting position
Provide 100 % oxygen, mask if possible
Rotate tourniquets, if a qualified person is available.
Get the diver to an emergency facility as soon as possible.

Return to diving?

If a medical workup fails to reveal any intrinsic heart or lung disease - the problem may not reoccur with future diving. Examine the risk factors noted above and act accordingly.