



UNIVERSITY of CALIFORNIA, SAN DIEGO

MEDICAL CENTER HYPERBARIC DEPARTMENT

Subcutaneous Air, From Where?

By
Takeuchi, A., Sadri, R.

Purpose: Barotrauma is a common cause of injury in the dive population. We present a unique case of subcutaneous emphysema, thought to be due to barotrauma.

Case Report:

A 19 year old male presents with right sided hearing loss and subcutaneous crepitus after scuba diving. The patient was on his second day of diving. On his last dive (60 feet), he reports trouble clearing his ears. On ascent, at approximately 40 feet, patient describes feeling "a sudden relief of pressure, with drainage of warm fluid from bilateral ears." Upon surfacing he noticed diminished hearing in his right ear and crepitus over the right side of his face and neck.

The patient's physical exam showed bilateral tympanic membrane hyperemia, possible small perforation in the right tympanic membrane. He also had subcutaneous emphysema extending pre-auricularly on the right down inferiorly to below angle of the mandible. The non-contrast head CT demonstrated subcutaneous emphysema in the right parietal scalp extending down into the neck. The non-contrast CT neck showed a significant amount of subcutaneous emphysema tracking along the right lateral scalp, into the right posterior parapharyngeal space, and inferiorly along the strap muscles to just above the right thyroid.

Patient was seen in ENT clinic 9 days after initial presentation. An audiogram was performed that was reported as "essentially normal, with normal tympanic membranes."



Discussion: An extensive review of the both the hyperbaric and ENT literature was done and was found to be unrevealing for any similar reports. One scenario discussed was introduction of subcutaneous air from a possible small tympanic membrane perforation. However, despite collaboration between Emergency Medicine providers, Radiology, and ENT specialist no clear etiology for the patient's symptoms was elucidated.

Follow up: Approximately 6 months later patient self-presented to the dive clinic for evaluation of return to dive training. He reported no further issues and his symptoms had since resolved. Patient was cleared to return to diving with no restrictions.