



CUTANEOUS DECOMPRESSION SICKNESS IN CALLS TO MEDICAL SERVICES CALL CENTER

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Introduction

- Statistics based on treated DCS cases usually report low incidence of cutaneous DCS (CDCS).
- Cutaneous manifestations of decompression sickness are usually mild and may stay unnoticed unless symptomatic.
- The purpose of this study was to establish frequency of CDCS among users of Divers Alert Network's Medical Services Call Center (MSCC).

MATERIALS AND METHODS

- De-identified data for 2007-2009.
- Review of all cases suspected for DCS:
 - subset with cutaneous manifestations selected.
- Manifestations and evolution of cutaneous DCS were described.

Retrospective Diagnosis of CDCS

Certainty level	Criteria
Very likely	Skin mottling < 6 hrs post dive AND confirmed by physician OR accompanied other manifestations of DCS (chokes, neurological symptoms, pain) OR history of previous CDCS
Likely	Skin rash or mottling < 6 hrs post dive, without other manifestations of DCS OR resolved before admission
Unlikely	Generalized skin rash, OR rash limited to exposed body areas, OR onset > 6 hours
Ruled out	Onset > 24 hours, OR other known cause of rash, OR ruled out by physician upon examination

Results

- MSCC processed 27,428 cases.
- 19,004 (69%) cases asking for assistance with referral, benefits and other information
- 8424 (31%) seeking medical assistance.
- 1174 suspected DCS cases:
 - 281 (24%) callers reported cutaneous symptoms,
 - 181 (16%) cases classified as highly likely or likely cutaneous DCS.

Patients

(n = 181)

- 57 % were woman.
- Mean age: 51(15 -78) years.
- 92 (49%) asked for medical assistance, 95 (51%) asked for other services.
- Recurrent DCS was reported in 41 (22%) patients.

Manifestations

- Skin mottling (blotching, cutis marmorata) (82, 45%)
 - abdomen, thighs, upper arms, buttocks, backs
 - tenderness
- Swelling (22, 12%)
 - shoulder, breast, arm, armpit
 - pain
- Rash
 - itching (9, 5%)

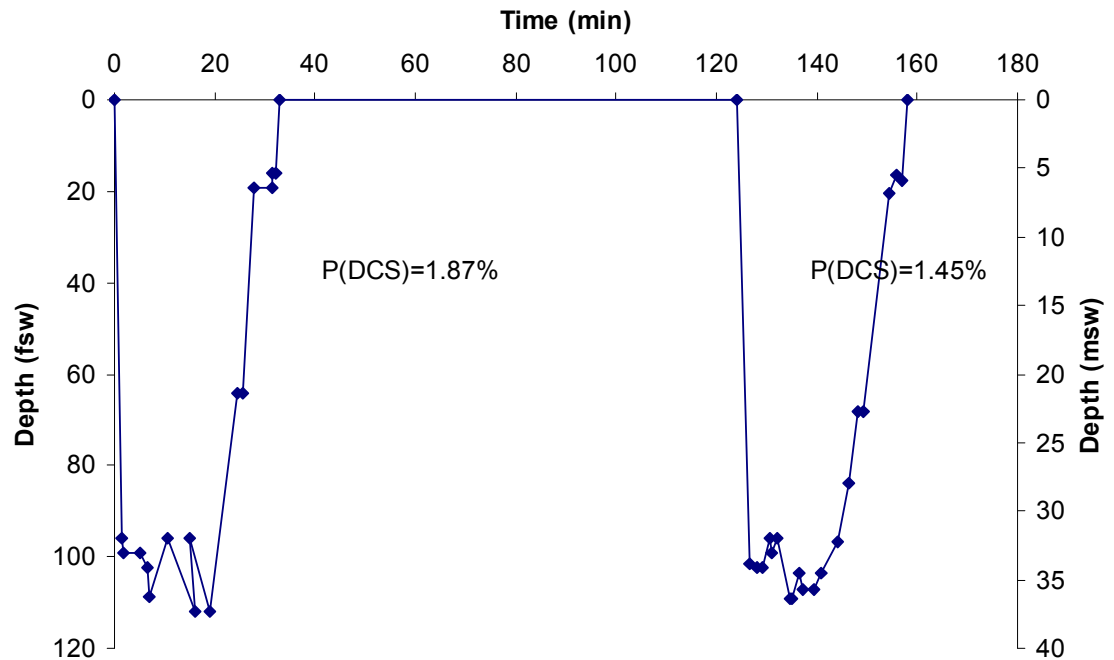
Skin Mottling



Courtesy of MSCC callers.

Diver Continue to Dive with CDCS

- *“After the first dive I had a rash on my left upper arm and on my lower torso. The rash was blotchy red and white and looked like sunburn. The rash alternatively itched and hurt.”*



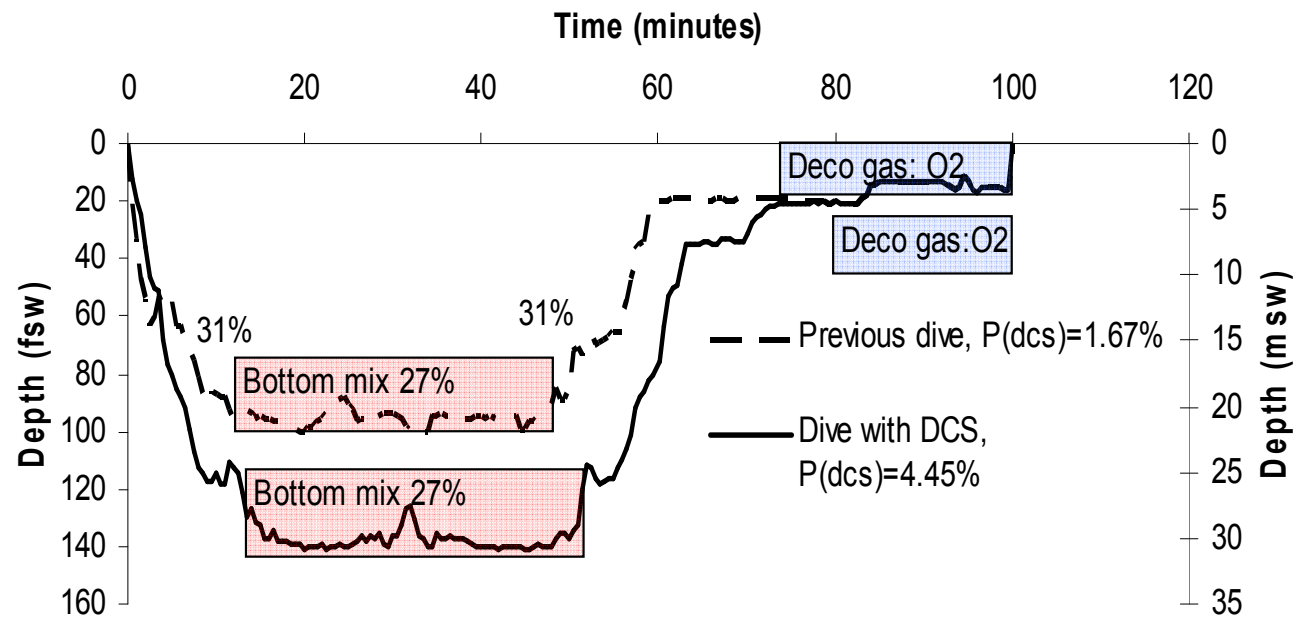
- 10 minutes after 2nd dive she had sudden onset of left arm paralysis, numbness and rash accompanied by extreme shortness of breath.

Associated DCS symptoms

- Cerebral(23, 12.7%): hemiparesis, nausea, migraine w/wo aura (8, 4.5%)
- Spinal (7, 4%): paraparesi preceded by abdominal pain (girdle pain (2, 1%) and mottling.
- Chokes (5, 3%): burning in chest, shortage of breath
- Pain: associated w. swelling
- Vestibular (2, 1%)

Expected or Unexpected?

- Experienced technical and cave diver in her late twenties, developed breast and shoulder pain with skin rash and mottling, 40 minutes after dive



- Diver maintained that she did same dive 4 days ago. Two dives and their estimated DCS risks are shown above.

CDCS Summary

- More frequent among callers to DAN than among cases treated for DCS in recompression chambers.
- Self-limiting and recovers spontaneously within days. SLO2 may speed up resolution of symptoms.
- May be associated with cerebral, spinal and pulmonary manifestations of DCS and thus require medical evaluation.
- To avoid recurrence and possible neurologic DCS, patient's dive practice must be reviewed after first episode of CDCS and modified if needed.