

.Background.

Time elapsed between the onset of first DCS symptoms and sHBOT is recognized as a critical factor in the resolution of a spinal cord DCS. We describe here a case of a delayed treatment for a neurological DCS.

. Case Presentation .

The diver is a 55-year old man with more than 500 dives experience. He smoked moderately (>5 cigarettes/day) and had no particular medical conditions. He did a one-week diving trip on a liveaboard in the Carribean. His dive profile was 2 to 3 dives per day on air and within No-Deco limits, at a maximum depth of 95 ft. The dive profile of the last two days is reported in table 1.

Table 1: diving profile of the last two days

Date	Start	Max depth	Average depth	TBT	Surface interval
01/17	10h14	95 ft	63 ft	33 min	
01/17	11h39	62 ft	42 ft	42 min	52 min
01/18	11h01	78 ft	34 ft	41 min	
01/18	12h29	62 ft	40 ft	43 min	45 min

The onset timeline:

He had a few alcoholic beverages during the week and more after the last dive than the other days. Also, he went in the hot tub after the last dive.

- 01/19- lower body paresthesia and anesthesia without weakness
- 01/20 - he took the plane without any worsening of symptoms
- 01/21 - numbness was persisting and he did not feel the passage of stools during bowel movement. He sought medical advice.

. Case Presentation continued .

Physical examination

Upon arrival at the hyperbaric unit, his blood pressure was 176/100, heart rate was 84. The diver was overweight (120 kg). Cardiac and pulmonary auscultations were normal. Neurological examination revealed complete anesthesia on a large area under the umbilicus, hypoesthesia in the upper thighs and other dysfunctions in the lower limbs as listed below

	vibratory sense	proprioception	cold perception	perianal sensitivity	sphincter tonus	muscular strength	osteotendinous reflexes
Absent	X			X			X
Normal		X	X		X	X	

The sHBOT profiles used were:

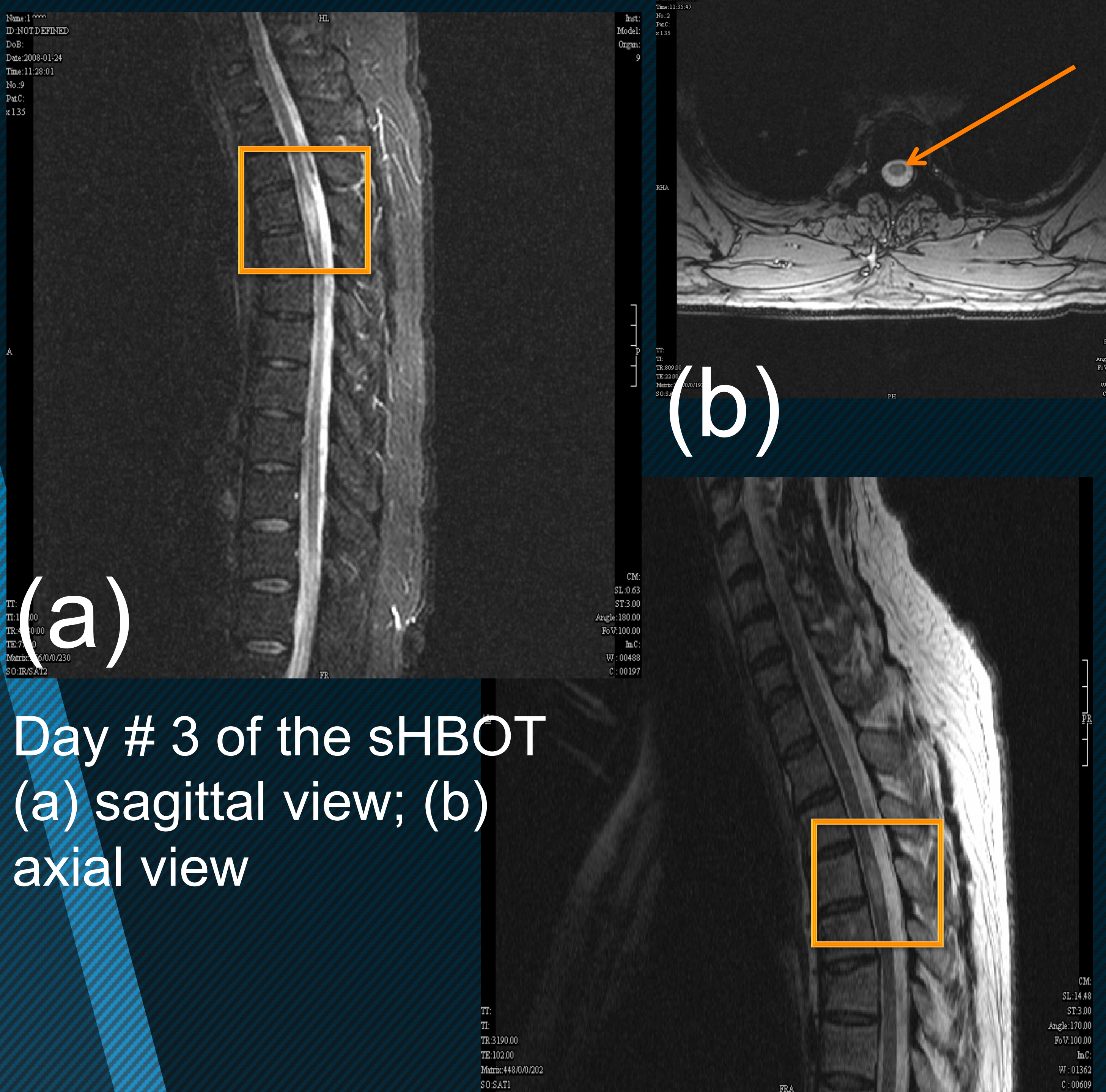
- First 24h: US Navy TT6, followed by a TT5
- 7 subsequent days: 2.5 ATA for 90 minutes on 100% oxygen.

He received this treatment in a Perry Sigma Plus DuoPlace hyperbaric chamber (Perry Baromedical Corporation, Riviera Beach, FI, USA) at the CSSS Alphonse Desjardins / CHAU de Lévis. He also received a high dose of steroid (methylprednisolone 1g IV id) from day 4 to 6 of the treatment.

. Clinical Evolution.

On day 3 of the treatment, MRI revealed anomalies located from the T3-T4 to T5 level, occupying $\frac{3}{4}$ of the medulla surface, and measuring 5.3 mm in antero-posterior plane, 5.5 mm in transverse and 32 mm in cephalocaudal plane. On day 7, a 2nd MRI showed a regression of the lesions. The cephalocaudal lesion was now 18 mm compared to 32mm on the first MRI.

MRI* of the thoracic spinal cord



Day # 3 of the sHBOT
(a) sagittal view; (b) axial view

Day # 7 of the sHBOT
+steroid treatment

*Siemens Harmony, 1.0 Tesla

The diver reported a complete resolution of symptoms about 2 weeks after his last sHBOT.

. Key Points.

- This case-report shows that
1. spinal cord DCS can occur even with dives respecting the no-deco limits;
 2. even if a delayed sHBOT is administered, the outcome could still be very good.

Also, this case opens up the discussion on :

- which treatment table use during follow-up treatments
- the use of steroids in neurological DCS treatment.

Consulted References

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