

## 招請講演

## MAGNETIC RESONANCE IMAGING OF CENTRAL NERVOUS SYSTEM DECOMPRESSION SICKNESS IN SHEEP UNDERGOING HYPERBARIC EXPOSURE.

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BACKGROUND: We have previously demonstrated that oxygen pre-breathing before “drop-out” decompression reduces the risk of decompression sickness (DCS) in the UW sheep model. However, little is known about the incidence and mechanisms of neurological injury in these models, or the effects of decompression strategies on ameliorating neurological DCS. We have undertaken magnetic resonance imaging (MRI) studies to define the incidence and mechanism of CNS injury in a sheep model of decompression sickness.

MATERIALS AND METHODS: Ten adult ewes (91.4 ± 9.2 SD kg) underwent dry chamber air exposure at 60 fsw (2.8 atm abs) for 24 hours, followed by an oxygen (88-92%) pre-breathe for 3-hr before “dropout” decompression at 30 feet/min (0.9 atm/min) to surface. Another four animals (95.6 ± 5.8 SD kg) underwent an identical decompression scenario without oxygen pre-breathing. Six weeks after exposure, animals were sacrificed and brain and spinal cords are fixed in formalin. T2 weighted fast spin-echo imaging, and high-resolution 3-dimensional spin-echo imaging were performed on the spinal cords using a high-field strength Varian 4.0 Tesla MRI scanner.

RESULTS: Decompression without oxygen pre-breathing resulted in 100% mortality. All the oxygen pre-breathing animals survived. Six animals developed limb bends, with one developing signs of respiratory DCS. Thus far we have found no evidence of focal infarcts in the spinal cords of the oxygen pre-breath group. However, patchy areas of increased T2 signal intensity are seen in white matter.

CONCLUSION: Thus far we see no evidence of discreet spinal cord infarction as would occur with arterial gas embolism, suggesting that 3-hr oxygen pre-breathing may reduce the severity of neurological DCS. However, subtle areas of increased signal intensity may represent white matter injury. Our ongoing work will use high-resolution diffusion tensor MRI to further characterize the possible white matter injury.

## 特別講演1

## 医学者たちの明治維新

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明治維新は四民平等を実現した世界に冠たる革命であった。その震源は蘭学にあり、シーボルト、ポンペ、ボードインらが、すぐれた医学生を育てた。また維新の政治過程を大きくすすめた薩長の松木弘安（寺島宗則）や久坂玄瑞はもともと医者であった。なかでも薩摩はイギリスと連携して幕府を倒しただけに、いちはやくイギリス流の臨床外科を高く評価していた。

明治2年、新政府はイギリス流の医学を採用するか、ドイツ流の医学を採用するのか大きく対立した。佐賀藩の相良知安 対 大久保利通ら薩摩藩の対決である。この対決は後の森林太郎 対 高木兼寛の論争まで尾を引くことになる。

明治維新に活躍した西郷隆盛、小松帯刀、久坂玄瑞、高杉晋作らの果たした役割も論じたい。