

異常氣壓作業環境與異壓性骨壞死之掃描型研究

A Prescriptive Study of Compressed Air Working Environment and Dysbaric Osteonecrosis

鄭文昌;陳興漢;陳榮邦;孫浩陽;林明賢

摘要

本文鑑於異常氣壓環境作業人員覆患減壓病，經再減壓治療後仍常見症狀復發的情形，自民國 83 年 03 月到民國 86 年 03 月期間，收集從事異常氣壓環境作業人員 204 人加以分析。其中 140 人接受長骨 X 光檢查，186 人接受全身骨骼掃描檢查，33 人接受磁振造影檢查。統計分析結果顯示，罹患異壓性骨壞死(dysbaric osteonecrosis)的發生率為 15.2%，隨著個案暴露於環境最大壓力、總次數及總時間等指數的增加，而異壓性骨壞死的發生率亦增加。而每次暴露於異常氣壓環境，工作時間初於 3 小時的個案，濡有見到異壓性骨壞死的發生。罹患異壓性骨壞死的病灶部位以股骨近端及遠端近膝關節處發生率最高(各有 16 病灶，各佔異壓性骨壞死病灶的 32.7%)。在 30 人異壓性骨壞死個案中，11 人(佔 36.7%)卻無臨床上症狀。爲了事異常氣壓環境作業人員的安全，我們建議在工作之初，需接受一次長骨 x 光攝影或全身骨骼掃描檢查，做爲日後之參考基準；工作期間，每年定期全身骨骼掃描篩檢一次；對於疑似異壓性骨壞死的個案，可藉由全身骨骼掃描檢查發現早期異壓性骨壞死，及核磁共振檢查確定診斷。一旦發現早期的病灶時，立即停止異常氣壓環境之作業，而給予高壓氣長期治療，以期減輕疾病狀及縮小病灶。

Abstract

Due to the recurrent decompression sickness(DCS) and recurrent symptoms after decompression therapy, we collected 204 cases those who have been in the compressed air working environment since Mar. 1994 to Mar. 1997. Most of the cases received the checkup of long bone X-ray, 140 cases; Tc-99m MDP whole body bone scan (WBS), 186 cases; or magnetic resonance imaging (MRI), 33 cases. The results of this study showed that the incidence of dysbaric osteonecrosis(DON) is 15.2 per cent. As the increased indexes such as the maximum pressure of single exposure, the total times of exposure, and total time of exposure, the increased incidence of DON is noted. There was no DON finding when the time of single exposure less than 3 hours. The sites of bone lesions are highest in the proximal end and distal end near the knee joint (16 lesions, 32.7 per cent out of total DON separately). There was 11 cases (36.7 per cent out of total of DON) showed

that no any clinical symptoms. For the secure of compressed air worker, we suggested that the long bone X-ray or whole body hone scan should be performed in the beginning of compressed air working, annual health survey by WBS is necessary during the working period, WBS to find early stage of DON and MRI to diagnose the DON certainly. However the work within compressed air environment should be stopped and the long-term HBO (hyperbaric oxygen) therapy should be performed to subside the clinical symptoms and contract the bone lesion in the early stage of DON.