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Oral Presentation Time: n/a

Poster Presentation Time: 1715 - 1745

President's Competition: NO

IRRIGATION THERAPY USING OZONE NANO BUBBLE WATER IN CONJUNCTION WITH HYPERBARIC OXYGEN THERAPY

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Introduction: Ozone bubbles with a diameter less than 100 nano meters can still remain in the water for a long term. This is called the “ozone nano bubble”. The main feature of this “ozone nano bubble” is that it has an excellent antiseptic capability to bacteria. A trial using the “ozone nano bubble” water in conjunction with hyperbaric oxygen therapy (HBOT) for osteomyelitis, and soft tissue infection were carried out.

Methods: The following research was carried out from December 2009 to October 2010 at Kawashima Orthopaedic Hospital. 8 osteomyelitis cases were treated with closed irrigation therapy using the “ozone nano bubble” water as irrigation water. Closed irrigation therapy is a method used to wash lesions by draining the irrigation water in continuous succession for one or two weeks. 1000→2000mL “ozone nano bubble” water per day was used. 27 soft tissue infection cases had their wounds washed with 20→50mL of “ozone nano bubble” water every day. All cases were treated with HBOT, as well. HBOT was carried out under the condition of 2 ATA and for 60 minutes once a day.

Results: Wound healing was seen in 7 out of 8 osteomyelitis cases. In 27 cases of soft tissue infection, 20 cases (74.1%) were finally cured. 7 cases (25.9%) continued exudation or were amputated. For the control group, we researched skin ulcer cases which were not treated with the “ozone nano bubble” water. In the control group 13 cases (56.5%) out of 23 were cured by HBOT, 10 cases (43.5%) were not cured.

Conclusion: Good results were obtained by using the “ozone nano bubble” water. This could be a further adjunct to therapy and that further research with larger numbers is required to confirm these results.