

## Impact of 99mTc-MDP Bone SPECT/CT Imaging in Failed Back Surgery Syndrome

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**Abstract :** Objective: Back pain is a major health problem costing billions of health budgets annually in Taiwan. Thousands of back pain surgeries are performed annually with up to 40% of patients complaining of back pain at time of post-surgery causing failed back surgery syndrome (FBSS), although diagnosis in these patients may be complex. The aim of study is to assess the feasibility of using bone SPECT-CT imaging to localize the active lesions causing persistent, recurrent or new backache after spine surgery. Materials and Methods: Bone SPECT-CT imaging was performed after the intravenous injection of 20 mCi of 99mTc-MDP for all the patients with diagnosis of FBSS. Patients were evaluated using status of subjectively pain relief, functional improvement and degree of satisfaction by reviewing the medical records and questionnaires in a 2 more years' follow-up. Results: We enrolled a total of 16 patients were surveyed in our hospital from Jan. 2015 to Dec. 2016. Four people on SPECT/CT imaging ensured significant lesions were undergone a revised surgery (surgical treatment group). The mean visual analogue scale (VAS) decreased 5.3 points and mean Oswestry disability index (ODI) improved 38 points in the surgical group. The remaining 12 on SPECT/CT imaging were diagnosed as no significant lesions then received drug treatment (medical treatment group). The mean VAS only decreased 2.1 point and mean ODI improved 12.6 points in the medical treatment group. In the posttherapeutic evaluation, the pain of the surgical treatment group showed a satisfactory improvement. In the medical treatment group, 10 of the 12 were also satisfied with the symptom relief while the other 2 did not improve significantly. Conclusions: Findings on SPECT-CT imaging appears to be easily explained the patients' pain. We recommended that SPECT/CT imaging was a feasible and useful clinical tool to improve diagnostic confidence or specificity when evaluating patients with FBSS.

**Keywords :** failed back surgery syndrome, oswestry disability index, SPECT-CT imaging, 99mTc-MDP, visual analogue scale

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