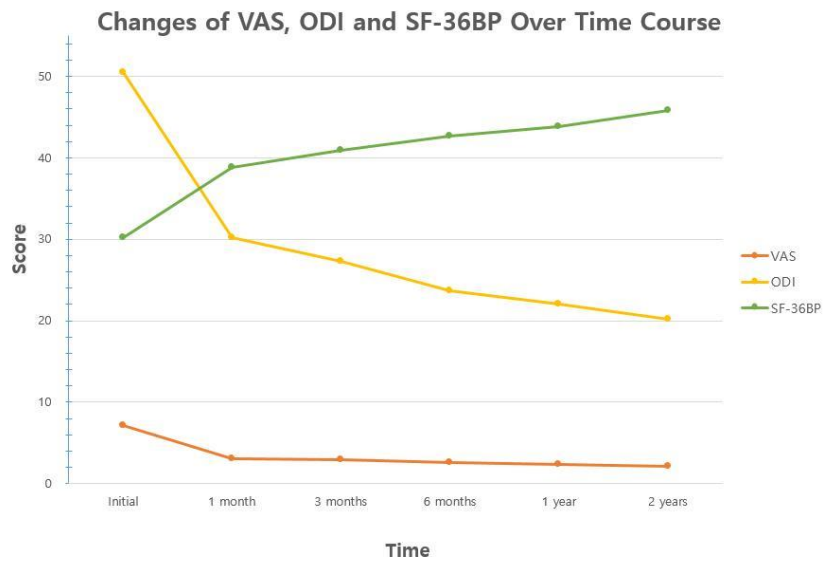


Nucleoplasty with navigable radiofrequency catheter as treatment of elderly lumbar disc herniation

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Low back pain Resulting from herniated nucleus pulposus (HNP) is one of the most common problems in the aging society. Open discectomy is recommended for the treatment, but it is pre-cautious for the elderly, who are prone to physiologic, pharmacologic and psychologic challenges. Some research has proved that advanced age as an isolated variable increases the surgical morbidity. Nucleoplasty using navigable radiofrequency catheter is one option to treat the herniated disc in spine clinic. The aim of this study is to assess the clinical efficacy of the procedure in geriatric patients with lumbar disc herniation. From March 2010 to April 2014, 219 patients visited our spine clinic with low back and lower extremity pain but 53 patients were excluded due to procedure refusal or follow-up loss. Of the remaining 166 patients, 97 were male and 69 were female with a mean age of 43.0 years ranging from 18 to 79 years. The targeted discs were L1/2 in one patient, L2/3 in six patients, L3/4 in 18 patients, L4/5 in 96 patients, L5/S1 in 71 patients. 21 patients received multiple level disc decompression. Outcome was assessed using the visual analogue scale(VAS), Oswestry Disability Index(ODI) and bodily pain scale of the Short Form 36 version 2(SF-36 BP). The VAS rates pain severity as a score from zero to 10. The ODI assesses low back pain-related disability: the higher the score, the more severe the disability. The bodily pain scale is a patient-reported subscale of the SF-36 BP: the lower the score, the greater the disability. Initial data, one, three, six months, one and two years follow-up data were included. The correlation of age and VAS, ODI and SF-36 BP were analyzed using Pearson's correlation test. Before the procedure, VAS, ODI and SF-36 BP scores were 7.0 ± 1.7 , 50.5 ± 16.8 , 38.9 ± 8.4 , and after two years, the scores were 2.0 ± 1.9 , 20.2 ± 14.6 , 45.8 ± 9.4 subsequently. All three measures showed overall improvement, and VAS score and ODI showed steady improvement with time. The correlation between age and VAS, ODI and SF-36 BP scores were measured with the Pearson correlation test and the coefficients were 0.1028 for VAS, 0.0078 for ODI, and -0.0124 for SF-36 BP. No correlation between age and clinical efficiency. Thus, age is not an independent risk factor for assessing clinical prognosis when performing nucleoplasty using navigable radiofrequency catheter. Even with scrupulous preoperative assessments, it is challenging for surgeons to perform surgery in the geriatric population. However, according to our data, age does not limit clinicians from performing nucleoplasty. Given that removing a very little amount of herniated tissue significantly improves pain, locomotion and quality of life, nucleoplasty using navigable radiofrequency catheter can be a safe and effective treatment for lumbar disc herniation in the elderly. A larger sample size and longer follow-up, and a more deliberative analysis of post-procedural complication needs to be done.



Changes of VAS, ODI and SF-36BP Over Time