

# CLINICAL AND RADIOLOGICAL EVALUATION OF A NEWLY DEVELOPED PMMA-CAGE

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# Disclosure

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# Background

A large proportion of patients with cervical disc degeneration or with cervical stenosis, anterior decompression with fusion with cages remains the standard therapy. However, most commercially available implants are expensive and despite their different design there is no difference in clinical or radiological outcome. We therefore developed an economical PMMA-cage with similar bio-mechanic properties.



# Methods

For the purpose of clinical characterization a prospective randomized study was instituted (group 1, PMMA-cage; group 2, PEEK-cage). According to the inclusion and exclusion criteria, 63 patients were investigated. Patients received questionnaires preoperative and 1 year after the operation. The range of motion (ROM) was determined using flexion-extension radiographs at the same time points.





*casting form with PMMA Cage (4 mm height)  
cage height can be selectet with metal plates of different thickness  
(plates behind the cage)*



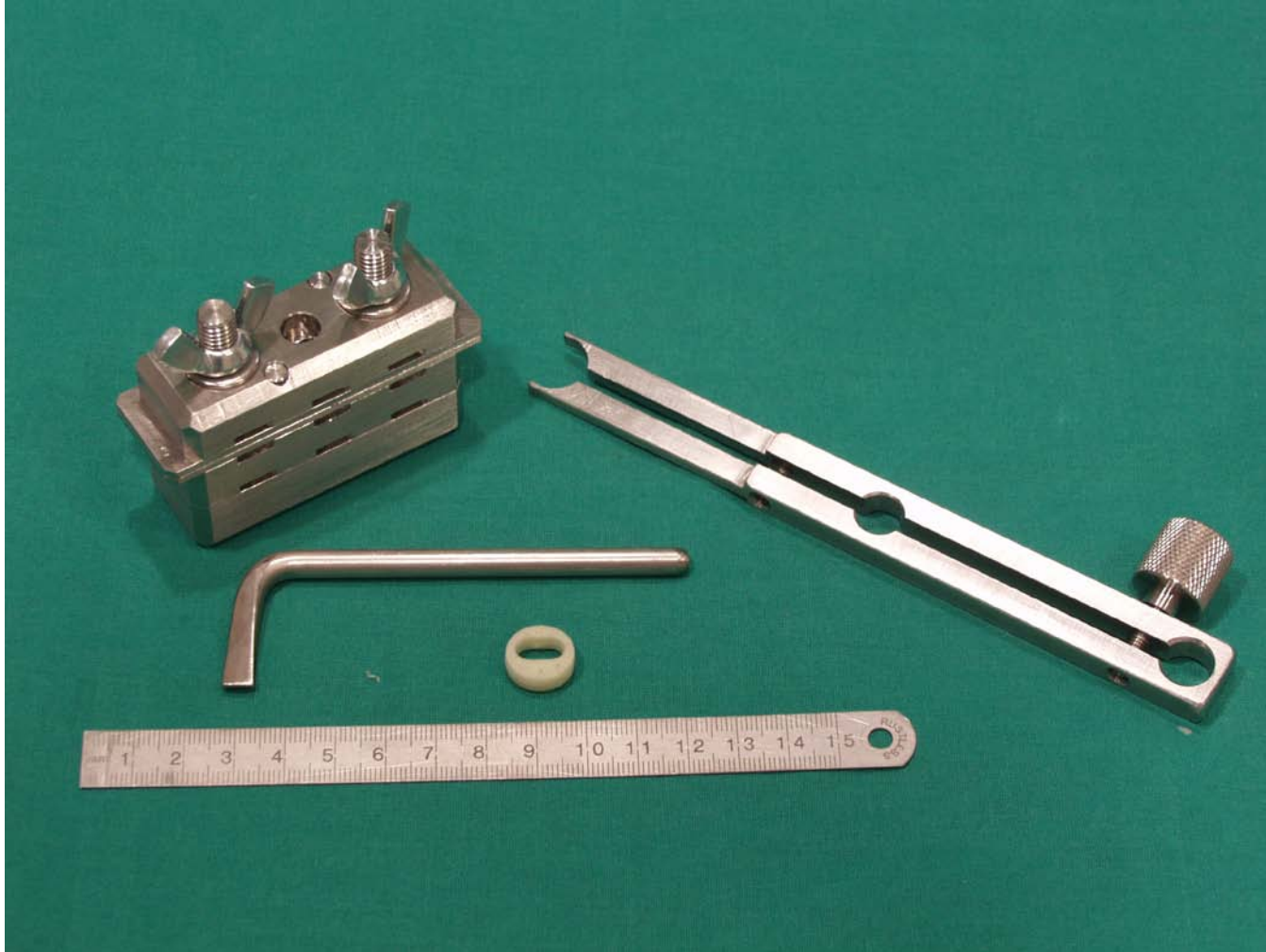


*standart PEEK cage (Signus, Germany) compared in the study with new PMMA cage*



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*casting form put together, implanting device (on the right), device for loosening of the plates (middle)*



# Results

Both groups were similar regarding age  
(group 1: n=30; 52.7 ± 11.8 years;  
group 2: n=33; 53.5 ± 11.7 years; p=0,8)

and the severity of clinical symptoms

(Joa-Score: group 1: 15.21 ± 1.3;  
group 2: 15.20 ± 2.2;  
NDI [%]: group 1: 37.90 ± 12.6;  
group 2: 39.80 ± 15.5; p=0,6).

One year postoperative both groups showed significant improvement of clinical symptoms  
(Joa-Score and NDI in both groups, p<0,05).

A significant reduction of ROM could be demonstrated in the operated segments of both groups (both groups, p<0,05).

Adjacent segments (upper, lower) showed no difference of ROM(NS).

There were no complications in relation to the newly developed implant.





# Conclusions

In terms of clinical improvement and radiological results the newly developed PMMA-cage represents in the 1-year follow-up a safe and economical alternative compared to commercially available PEEK-cages.

