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Is cervical plate necessary for anterior cervical fusion? Radiological analysis of fusion rate for anterior cervical discectomy and fusion without plating

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Background: Anterior cervical discectomy and fusion (ACDF) is considered to be the gold standard treatment for cervical degenerative disease. Different modalities and instrumentation have been used to achieve fusion. The objective of our study was to evaluate the rate of fusion in patients who underwent Anterior Cervical Discectomy and Fusion without the use of cervical plate.

Methods & Materials: The study involved retrospective radiographic analysis of patients who underwent ACDF using cages without plate from August 2005 to February 2014. The radiographs were assessed for fusion independently by a Consultant Radiologist and Consultant Spinal Surgeon using Brantigan-Steffee fusion criteria. The criteria include a denser and more mature bone fusion area than originally achieved at the time of operation, no inter-space between the cage and the vertebral body and mature bony trabeculae bridging the fusion area. The procedures were performed in our unit.

Results: Thirty nine patients underwent ACDF without plating. Out of 39, 21 were females and 18 were males. Average age for our patients was 62.03 with an average follow up of 25.8 months. Five patients were excluded from study as they had inadequate follow up to comment on fusion. 10 patients had fusion performed at one level, 27 at two levels, one each at 3 and 4 levels. The operated levels for one level patient was C3/4, 4/5, 5/6 and 6/7, for two levels were C3/4 and 4/5, C4/5 and 5/6, C5/6 and 6/7, for three levels was C3/4,4/5,5/6 and for four levels was C3 to C7. Independent analysis by Radiologist and Spinal surgeon showed that fusion was achieved in 28 patients (82%) at all levels, non union was observed in 3 patients(9%), one level (C4/5 and C5/6) was fused out of two levels (C4/5, 5/6 and C5/6, 6/7) in 3 patients(9%).

Conclusion: ACDF using cages without instrumentation has revealed excellent rate of fusion (82%) which shows that plating is not necessary to attain a better outcome from ACDF.

Biography

Shoaib Khan has completed his MBBS from Dow Medical College, Karachi, Pakistan in 2005 and his MRCS from Royal College of Surgeons of Edinburgh, UK in 2013. He is working as a Research Fellow for Spine in University Hospital of North Tees, Stockton on Tees, UK.

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