O-4-2

Is there an increased likelihood of adjacent level disc degeneration and ossification after anterior cervical discectomy and fusion for fracture dislocation of neck.

Mariana Otero[1], Joyita Barua[2], Purnajyoti Banerjee[2]

[1]Queen Mary University of London, Barts and The London School of Medicine and Dentistry, London, United Kingdom

[2]Barts Health NHS Trust, London, United Kingdom

Introduction: It is currently unclear if adjacent level disc degeneration after anterior cervical discectomy and fusion (ACDF) is related to the plate to disc distance (PDD) in fracture dislocations.

Research question: We assessed likelihood of adjacent level disc degeneration and ossification related to ACDF in traumatic fracture dislocation up to 2 years after surgery.

Method: We retrospectively reviewed images of patients who underwent ADCF surgery using an anterior plate for fracture dislocation of cervical spine. Patients operated on cases other than trauma or fusion without anterior plate were excluded. The distance between the edges of the plate and the superior and inferior intervertebral discs were measured on radiographs before and after surgery with 6 months to 2 years follow up. Degeneration of the adjacent intervertebral discs was assumed if there was a difference in height equal to or greater than 30% and signs of ossification.

Results: Twenty-five patients with 50 discs were included. Discs that had a PDD >5mm were in Group A (n=14) while discs that had a PDD <5mm were in Group B (n=36). The mean ages were 38 and 43 years respectively. There was significant lower incidence of radiological evidence of adjacent disc degeneration or ossification in group A compared to group B (43.24% vs 15.38%; p=0.03). More patients had PDD <5mm in cephalad adjacent discs compared to caudal adjacent discs (84.62% compared to 58.33%; p=0.03). There was no significant difference comparing the proportion of caudal and cephalad adjacent discs that underwent degeneration (37.50% compared to 34.62%; p=0.41).

Conclusion: We report higher rate of adjacent level disc degeneration in discs with PDD <5mm after ACDF for fracture dislocation of cervical spine. We recommend maintaining a PDD of >5mm on either side whilst fusing cervical spine for trauma.