Autologous Clavicle Bone Graft Versus Autologous Iliac Bone Graft in Anterior Cervical Discectomy and Fusion

Thesis

Submitted for Partial Fulfillment of

The Doctorate Degree (M.D) in

Neurosurgery

By

Ahmed Hosameldin Hussein Abdelhamid

(M.B, B.CH, M.Sc. of Neurosurgery)

Supervised by

Prof. Dr. Mohammed Badran Abdelsalam Elshennawy

Professor of Neurosurgery,

Faculty of Medicine, Cairo University

Prof. Dr. Hazem Abdelsattar Elsayed Abulnasr

Professor of Neurosurgery,

Faculty of Medicine, Cairo University

Dr. Ashraf Abdel-latif Moussa Osman

Lecturer of Neurosurgery,

Faculty of Medicine, Fayoum University,

Dr. Mostafa Mohammed Ali Abdel-latif

Lectuerer of Neurosurgery,

Faculty of Medicine, Fayoum University

Faculty of Medicine

Cairo University

2018

Summary

This Prospective study was conducted to compare the efficacy and short to intermediate term results of performing anterior cervical discectomy and fusion by cage filled with autologous bone graft particles either iliac (group A) or clavicle (group B) to provide rapid fusion and to achieve secondary stability to prevent kyphosis.

The study was conducted upon 24 patients divided into two equal groups presenting with operable single or double level cervical disc disease at the department of neurosurgery in Fayoum University Hospitals illustrating different modalities of cerebrospinal fluid leak and the use of continuous lumbar drainage in its management.

Thorough neurological examination and proper investigations including preoperative laboratory investigations and radiographs such as X-ray, CT and MRI of cervical spine in all cases are mandatory to detect being a good indicated candidate for surgery and to exclude patients not indicated or within exclusion criteria.

For anterior cervical discectomy and fusion, the iliac crest is the most popular donor site of autologous bone grafting. It is important to pack sufficient volume of good-quality cancellous bone into the cage to induce early and optimal bone integration and fusion**.** This technique can induce strong interbody osseous fusion and maintain spine integrity. Cages can facilitate mechanical strength to maintain intervertebral disc height, and autologous cancellous bone plays a role in enhancing graft bony fusion due to new bone formation.

However, Iliac graft complications have been countered which include delayed healing, paresthesia, lateral femoral cutaneous nerve injury, infection, hematoma, peritoneal perforation, visceral herniation, iliac fractures, and rarely pelvic instability. In our study, we use autologous cancellous bone obtained from the clavicle for anterior cervical discectomy and fusion, combined with an interbody cage, as a safe and reliable alternative to the classic way

In summary, the recent trend nowadays is to decrease the postoperative pain, postoperative hospital stay, hospital costs and achieve rapid return to daily activities so this study recommends the use autologous clavicle bone graft instead of autologous iliac bone graft in cases of anterior cervical discectomy and fusion