

Uncovertebral Anatomic Midline Targeting for Cervical Disc Arthroplasty

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Abstract

Study Design Prospective observational cohort.

Objective To document the accuracy of uncovertebral anatomic targeting in positioning cervical disc arthroplasty.

Summary of Background Data Disc arthroplasty implants depend on midline placement for optimum mechanical function. Fluoroscopy is used to delineate the midline. Anatomic targeting from the uncovertebral joints in the neck may be adequate. We have investigated the efficacy of uncovertebral anatomic targeting for cervical disc arthroplasty.

Methods Anatomic uncovertebral midline targeting for disc arthroplasty insertion was performed in 18 male (mean age 51 years, range 27 to 67) and 22 female (mean age 50, range 35 to 70) patients receiving a total of 59 implants over a 5-year period. Device insertion was under only lateral imaging control. Postinsertion operative fluoroscopy with optimized centering was used to record implant position in the anteroposterior plane, and centerline analysis was performed using cursor measurement technology from the GE PACS™ imaging system (GE Medical Systems, Mt. Prospect, IL).

Results Analysis found a mean deviation from the ideal midline placement of only 0.7 mm (range, 0 to 2.9 mm). Only three devices were more than 2 mm off the anatomic midline.

Conclusion This anatomic technique is effective, safely minimizing imaging resource needs and X-ray exposure to the patient and operating team.

Keywords

cervical - disc arthroplasty - uncovertebral joints - implant positioning

以鈎椎結構上的中線為頸椎間盤置換術的指標

研究設計 前瞻性觀察群體。

目的 記錄以鈎椎結構作為頸椎間盤置換術中定位指標的準確度。

背景資料總結 椎間盤置換是根據中線定位，以獲得最佳的機械性能。透視檢查是用來劃定中線的位置。以在脖子上鈎椎的結構定位可能已足夠了。以鈎椎結構作為頸椎間盤置換術中定位指標的療效。

方法 以鈎椎結構作為頸椎間盤置換術中定位指標為 18 名男性（平均年齡 51 歲，範圍由 27 至 67 歲）和 22 名女性（平均年齡 50 歲，範圍由 35 到 70 歲）進行手術，在 5 年間共進行了 59 個手術。置入裝置時只有橫向的成像控制。植入手術後以透視檢查並最理想置中用來記錄在前後平面的植入位置，及以 GE PACS™ 成像系統（GE Medical Systems，Mt. Prospect，IL）的游標測量技術作中線分析。

結果 分析發現，平均偏離理想的中線位置僅有 0.7 毫米（範圍為 0 至 2.9 毫米）。只有三個裝置偏結構中線均超過 2 毫米。

結論 這個以結構作為技術是有效的，並可以安全地減少影像資源的需求和病人及手術團隊暴露在 X 射線的時間。