

Return to Active Duty Rates after Anterior Cervical Spine Surgery in Military Pilots

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Introduction

US military pilots have a higher incidence of cervical spondylosis compared to the general population. Cervical spondylosis can ground pilots and restrict career advancement if symptoms limit capabilities to function at the expected level. Pilots can return to flying status with a flight waiver if after a 6 month waiting period symptoms have resolved, there is radiographic fusion with ACDFs or implant stability with TDRs, and the surgeon recommends return to active duty without limitations. Flight waiver approval is at the discretion of the flight surgeon and higher command. We sought to determine the rate of return to active duty flight status in US military pilots after surgery for cervical spondylosis.

Methods

We performed a single-center retrospective analysis of US military pilots undergoing anterior cervical discectomy and fusion (ACDF) or total disc replacement (TDR) for symptomatic cervical spondylosis between January 1, 2010, and June 1, 2017. We reviewed all patients between that time period and identified only active duty pilots. Chart review was completed to determine time to return to active duty, time to return to flight status, and surgery characteristics.

Results

Between Jan 1, 2010 and Jun 1, 2017 we performed 581 ACDFs and 231 TDRs. We identified 22 active duty pilots who underwent an ACDF, TDR, or a combination. There were a total of 23 cases: 3 single-level ACDFs, 14 single-level TDRs, 1 two-level ACDF, 3 two-level TDRs, and 2 three-level hybrid constructs. C5-6 (48.3%) was the most common level involved followed by C6-7 (41.4%), C3-4 (6.9%), and C4-5 (3.4%). The average ACDF surgery length was 86 minutes and the average TDR surgery length was 85 minutes. Twenty of 22 (90.9%) pilots were recommended for return to active duty by the neurosurgeon at an average of 128 days. Eleven of 22 (50%) pilots returned to active flight status at an average of 287 days. Six of 22 (27.2%) pilots retired within a year of surgery. Excluding those pilots nearing retirement, 11 of 16 (68.8%) returned to flight status. Of the 11 that returned, three were fixed wing aircraft pilots and eight were rotary wing aircraft pilots. The average follow up period was 373 days.

Case Description

ACDF	No. (%)
1 level	3(13)
2 level	1(4.3)
TDR	
1 level	14(60.8)
2 level	3(13)
Hybrid	2(8.6)
Levels (total)	29
C3-4	2(6.9)
C4-5	1(3.4)
C5-6	14(48.3)
C6-7	12(41.4)

Demographics and Results

Characteristic	No. (%)
Patients no.	22
Age at surgery, mean yr	41.7
Gender	
Male	21 (95.4)
Female	1 (4.5)
Rank	
CW2-4	9 (40.9)
O1-3	4(18.1)
O4-6	9(40.9)
Service	
Army	13 (59.1)
Navy/Marine Corps	6 (27.2)
Airforce	3 (13.6)
Aircraft	
Fixed Wing	6 (27.2)
Rotary	16 (72.7)
Return to flight status	
Yes	11 (50%)
No	5 (22.7%)
Retired	6 (27.2%)

Conclusions

This is the first study to demonstrate the rate of return to active duty in US military pilots after undergoing surgical treatment for cervical spondylosis with an ACDF, TDR, or a hybrid construct. Excluding retiring pilots, 11 of 16 (68.8%) pilots returned to active duty flight status.

Learning Objectives

US military pilots can return to active duty flight status after surgical treatment for cervical spondylosis We hope this data helps neurosurgeons and unit commanders counsel aviators on expectations for returning to flight status after surgery.

References

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