

## Introduction

Hybrid surgery (HS), combining adjacent anterior cervical discectomy and fusion (ACDF) and cervical disc arthroplasty (CDA), is a relatively recent treatment option for multilevel cervical degenerative disc disease (DDD). There are minimal patient-reported cervical HS outcome measures published to date.

## Objectives

Given the novelty of HS and the relative shortage of clinical data adequately evaluating the treatment option, this current study aims to assess the patient-reported outcome measures, patient satisfaction, complications and reoperation rates of cervical hybrid procedures for symptomatic cervical multilevel DDD in a single institution.

## Methods

- Retrospective cohort study data was collected and analyzed from patients who received cervical HS for symptomatic cervical DDD between 06/2018 and 02/2020.
- A total of 34 patients (13 male, 21 female) with mean age of  $51.7 \pm 9.2$  years (range 36–71), and follow-up 36-60 months are included in this report: 26 patients had 1-level CDA and 1-level ACDF (1+1); 3 patients had 2-level CDA+1-level fusion; 7 patients had 1-level CDA+2-level fusion; and 1 patient had 1-level TDA+3-level fusion.
- Data was collected preoperatively and postoperatively at 3, 6, 12, and 18 months, then yearly thereafter.
- Patient reported outcome measures included patient satisfaction, Visual Analog Score (VAS) for neck and arm pain, and Neck Disability Index (NDI).
- Complication, reoperation, readmission rates, operation duration, length of stay (LOS), opioids use were also assessed.

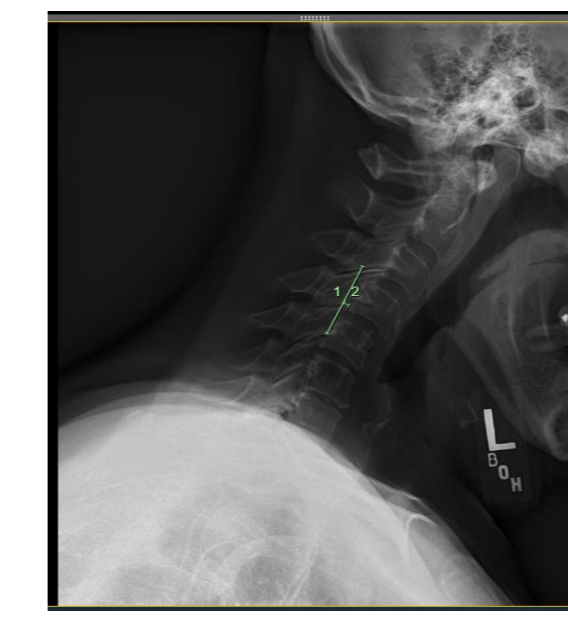
### Case 1: 1+1



Preop MRI



Preop Neutral



Preop Flexion



Postop Extension



Postop Neutral



Postop Flexion

### Case 2: 2+1



Preop MRI



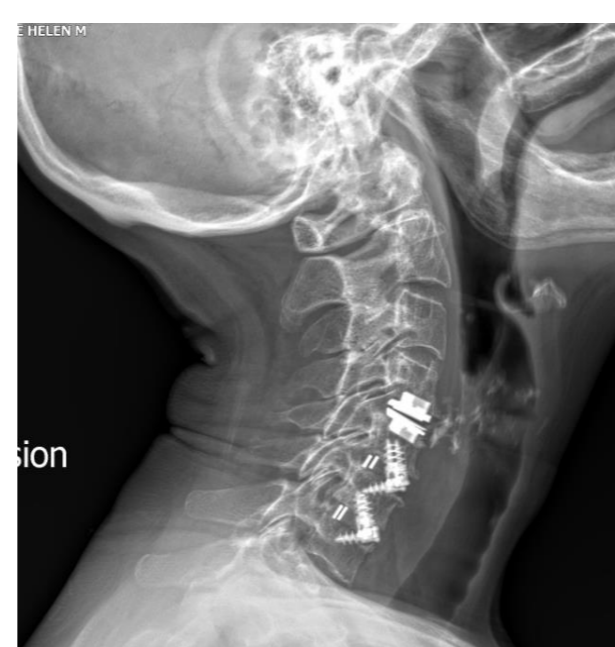
Preop X-Ray



Preop Neutral



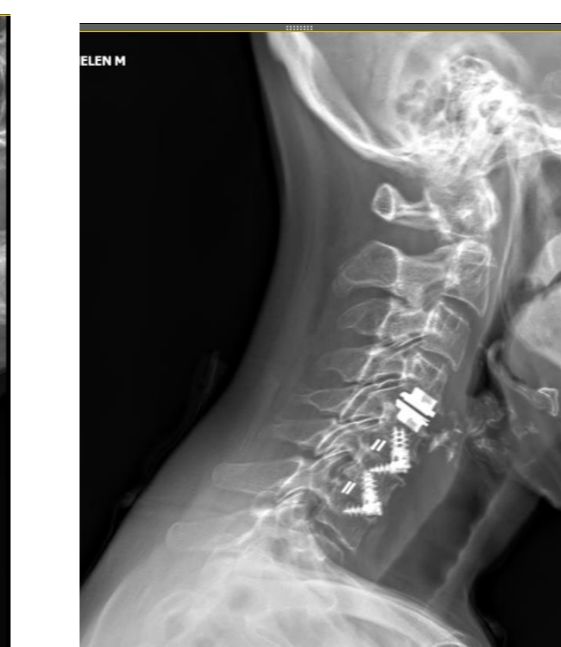
Preop Flexion



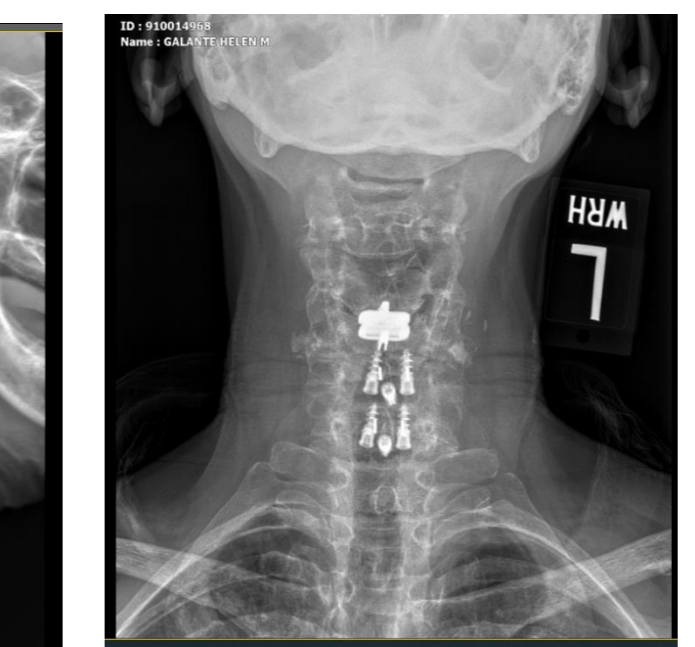
Postop Extension



Postop Neutral



Postop Flexion



Postop AP

## Results

- Improvement of pain and disability scores were clinically significant and these improvements were sustained throughout the follow-up period.
- There were no reoperations.
- All patients stayed in the hospital 23 hours or less.
- Average estimated blood loss was  $7.3 \pm 3.4$  ml (range 5-15ml), and average operative time was  $37.8 \pm 3.4$  minutes (range 31-42 minutes).
- Average return to work/activities was  $26 \pm 3$  days.
- 3 patients had dysphonia at 6-week follow-up, in 1 patient dysphonia remained at 3-month follow-up.

## Conclusion

- This study represents clinical experience of a single surgeon with the cohort of patients undergoing HS reported to date.
- Cervical HS for cervical DDD demonstrates favorable clinical outcomes at short- to midterm follow-up.
- Patients undergoing HS are not at increased risk of perioperative complications and may benefit from fewer postoperative complications and shorter LOS.

**Disclosures:** The information does not meet FDA clearance indications for hybrid construct (CTDA and ACDF) and represents an off-label use.