# Functional Recovery Following Callosal Disconnection Syndrome

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#### Case

53yo female without significant PMH and a history of maternal cerebral aneurysm presented to acute rehabilitation 25 days status-post

- ruptured ACoA aneurysm s/p coil embolization
- unruptured right internal carotid aneurysm
- prolonged critical care hospitalization due to inability to maintain a stable intracranial pressure, cerebral arterial vasospasm, and the need for pressors

Premorbid functional history: complete independence with ADLs & ambulation

### Examination

- Aphasia, dysphagia, poor cognitive processing and cognitive function, inhibited safety awareness, poor balance, incoordination, weakness, poor endurance
- Felt her "right hand is fighting with my left hand", could not follow left-sided commands, extreme difficulty in releasing left-hand grip
- Oriented to person and place but not situation, delayed verbal recall, 2-step commands on right side only, transferred objects from left to right visual field to process information
- Impaired sequencing, cognitive endurance, and awareness

## Diagnosis

Callosal Disconnection Syndrome due to ruptured ACoA aneurysm





An extensive subarachnoid and intraparenchymal hemorrhage, with prominent involvement of the corpus callosum and cingulate gyrus; from its origin at the ACoA aneurysmal rupture site, coursing posteriorly along the corpus callosum in its entirety.



# **Functional Recovery**

Basic ADLs	Admission	Discharge
Oral Hygiene	4	4
Eating	4	6
Toileting Hygiene	1	4
Mobility	Admission	Discharge
Roll Left and Right	3	6
Lying to Sitting on Side of Bed	3	6
Sit to Lying	2	6
Sit to Stand	2	4
Stand to Sit	2	4
Chair, Bed to Chair Transfer	2	4
Toilet Transfer	1	4
Walk 10 Feet	1	4
Walk 150 Feet	-	4
Walk 50 Feet with Two Turns	-	4

	Admission	Discharge
O-Log	20/30	>27/30
CLQT	mod/severe	WNL

Per SLP: "Pt has improved from moderate-severe deficits to scoring WNL on all cognitive domains; moderate cognitive deficits persist in short term recall, attention, problem solving, organization, and executive functioning"

### Discussion

This case is a novel presentation of Callosal Disconnection Syndrome resulting from a hemorrhagic event, with bleeding throughout the entire span of the corpus callosum.

Callosal Disconnection Syndrome has been identified in 3.3% of corpus callosum stroke patients.

This case exhibits improvement in objective functional outcomes as documented by members of the patient's care team.

We demonstrate the potential for functional recovery following Callosal Disconnection Syndrome utilizing a comprehensive therapy regime including intensive physical, occupational, and speech therapy and medical management from a team of physiatrists.

Further studies are needed to elucidate factors contributing to symptomatic recovery from Callosal Disconnection Syndrome.