

# Department of Vascular Ultrasound

4 North, Charing Cross Hospital  
Ext 17360 / 17322 Email: imperial.cxhvascularstudies@nhs.net

Imperial College Healthcare  
NHS Trust



Indications: **L** facial droop  
onset 'over weekend'. Exact day unknown  
(30 April - 2nd May)  
ongoing  
Dominant hand (right / left)

## Duplex Ultrasound: Carotid and Vertebral Arteries

Consultant: Redwood

All velocities given in cm/s; Peak systolic velocity = PSV; End diastolic velocity = EDV; Intimal thickening = IT  
Common carotid artery = CCA; Internal Carotid Artery = ICA; External Carotid Artery = ECA

### Spectral Doppler Analysis

	Right			Left		
	Common	Internal	External	Common	Internal	External
Peak Systolic Velocity / End Diastolic Velocity (cm/s)	85/20	77/31	116/20	75/23	67/20	116/25
Peak systolic velocity ratio (ICA <sub>PSV</sub> /CCA <sub>PSV</sub> )		—			—	
St Mary's ratio (ICA <sub>PSV</sub> /CCA <sub>EDV</sub> )		—			—	

R

L

### Carotids

#### Approximate Percentage Stenosis (%)

Right		Left	
CCA	ICA	CCA	ICA
<50	<10	<50	<10

Significant ICA stenoses are graded using NASCET criteria

#### Plaque type: soft / mixed / dense / calcified; irregular / smooth / ulcerated

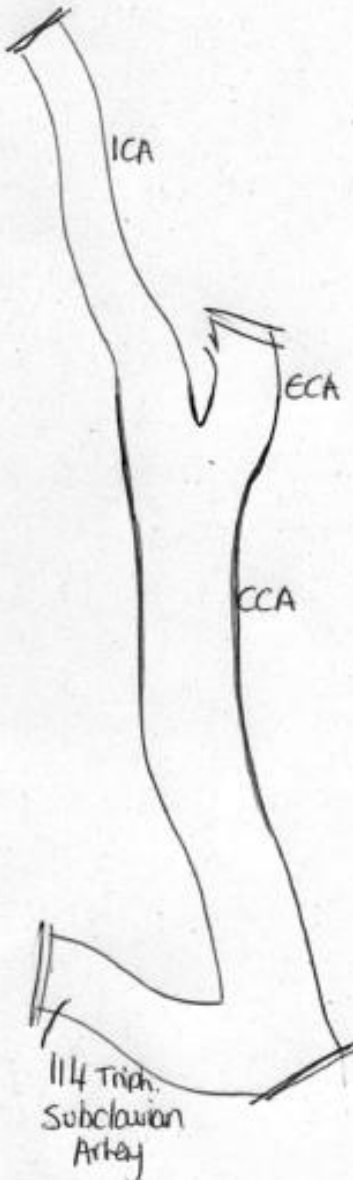
Right ICA	Left ICA
Intimal thickening	Intimal thickening

### Vertebrals

Right 42/14 cm/s	Left 36/12 cm/s
Antegrade	Antegrade

### Summary:

No evidence of any haemodynamically significant stenoses bilaterally.



Clinical Vascular Scientist (CVS): Jodie Weston

AVS: Yes/No Date: 03/05/2022

VAS-DF-11 V1.2 Page 1 of 1 CVS second opinion: N/A

AVS: Yes/No Date:

# Department of Vascular Ultrasound

4 North, Charing Cross Hospital  
Ext 17360 / 17322 Email: imperial.cvhvascularstudies@nhs.net



Imperial College Healthcare

NHS Trust

Indications: Speech disturbance - ? ongoing or resolved  
↳ nurse escort monitoring  
Unable to have CT  
Dominant hand: right / left

## Duplex Ultrasound: Carotid and Vertebral Arteries

Consultant: Redwood

All velocities given in cm/s; Peak systolic velocity = PSV; End diastolic velocity = EDV; Intimal thickening = IT  
Common carotid artery = CCA; Internal Carotid Artery = ICA; External Carotid Artery = ECA

### Spectral Doppler Analysis

	Right			Left		
	Common	Internal	External	Common	Internal	External
Peak Systolic Velocity / End Diastolic Velocity (cm/s)	88/18	70/18	89/12	92/21	84/23	78/16
Peak systolic velocity ratio (ICA <sub>PSV</sub> /CCA <sub>PSV</sub> )		—			—	
St Mary's ratio (ICA <sub>PSV</sub> /CCA <sub>EDV</sub> )		—			—	

R

L

\* Poor views + limited access



### Carotids

#### Approximate Percentage Stenosis (%)

Right		Left	
CCA	ICA	CCA	ICA
<50	<50	<50	<50

Significant ICA stenoses are graded using NASCET criteria

Plaque type: soft / mixed / dense / calcified;  
irregular / smooth / ulcerated

Right ICA	Left ICA
Appears calcified + smooth where visualised.	Unable to assess due to poor views

### Vertebrals

Right 60/17 cm/s	Left 57/13 cm/s
Antegrade	Antegrade

### Summary:

Very limited assessment with reduced confidence - difficult access to neck (patient reports "broken neck", unable to move head/neck) + patient unable to stay awake (heavy breathing + snoring → artefact)

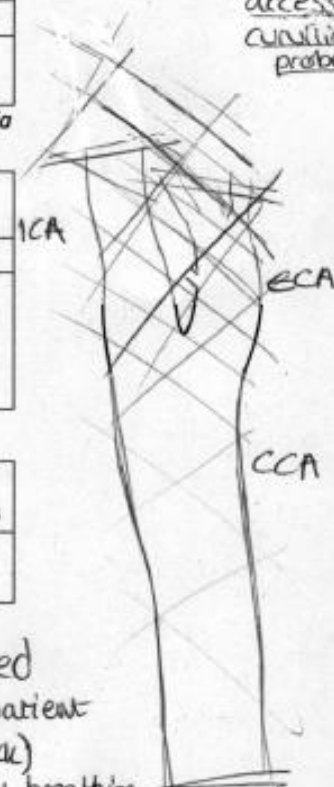
Right Limited views however no evidence of any haemodynamically significant stenoses

Left Very limited views. No haemodynamically significant stenoses identified, poor visualisation of vessel walls.

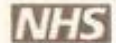
Clinical Vascular Scientist (CVS): Jodie Weston AVS: Yes/No Date: 03/05/2022

VAS-DF-11 V1.2 Page 1 of 1 CVS second opinion: AVS: Yes/No Date:

\* Very poor views + limited access with curvilinear probe only



# Department of Vascular Ultrasound



Mary Stanford Wing, St Mary's Hospital Imperial College Healthcare  
Ext 23739 / 23374 Email: imperial.irvinevascular.studies@nhs.net NHS Trust

Indications: 6/52 post (R) CEA followup (op date 21/3/22)

Dominant hand: right/left

Consultant: Jenkins

## Duplex Ultrasound: Carotid and Vertebral Arteries

All velocities given in cm/s; Peak systolic velocity = PSV; End diastolic velocity = EDV; Intimal thickening = IT  
Common carotid artery = CCA; Internal Carotid Artery = ICA; External Carotid Artery = ECA

### Spectral Doppler Analysis

	Right			Left		
	Common	Internal	External	Common	Internal	External
Peak Systolic Velocity / End Diastolic Velocity (cm/s)	119/36	93/29	115/22	See diagram	202/47	213/33
Peak systolic velocity ratio (ICA <sub>PSV</sub> /CCA <sub>PSV</sub> )		—			1.70	} calculated compared to non-diseased segment of CCA
St Mary's ratio (ICA <sub>PSV</sub> /CCA <sub>EDV</sub> )		—			5.18	

R

### Carotids

Approximate Percentage Stenosis (%)			
Right		Left	
CCA	ICA	CCA	ICA
<<50	<20	<50	<50

Significant ICA stenoses are graded using NASCET criteria

Plaque type: soft / mixed / dense / calcified;  
irregular / smooth / ulcerated

Right ICA	Left ICA
Post op CEA	Mixed / smooth

### Vertebrals

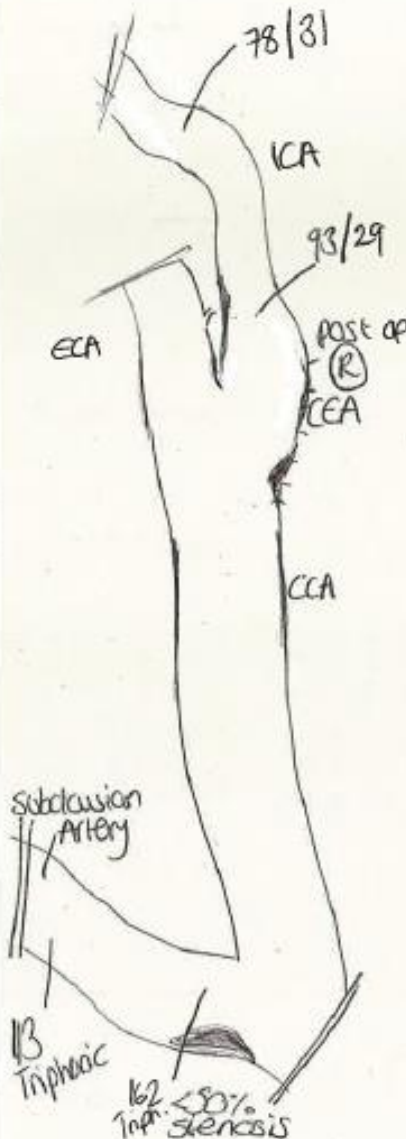
Right	Left
40/16 cm/s	52/20 cm/s
Antegrade	Antegrade

### Summary:

No significant carotid artery lesions detected bilaterally.

Note <50% stenosis at CCA bifurcation causing raised velocities extending into the ICA and ECA origins. However NOT haemodynamically significant.

L



Clinical Vascular Scientist (CVS): Jodie Weston Date: 27/04/2022

VAS-DF-41 V1.2 Page 1 of 1 CVS second opinion: N/A Date:

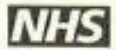
# Department of Vascular Ultrasound

4 North, Charing Cross Hospital

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Imperial College Healthcare

NHS Trust



Indications: R arm + leg weakness lasting ~5 minutes, approx 1 week ago.

Dominant hand: right (left)

## Duplex Ultrasound: Carotid and Vertebral Arteries

Consultant: Elmamoun

All velocities given in cm/s; Peak systolic velocity = PSV; End diastolic velocity = EDV; Intimal thickening = IT  
Common carotid artery = CCA; Internal Carotid Artery = ICA; External Carotid Artery = ECA

### Spectral Doppler Analysis

	Right			Left		
	Common	Internal	External	Common	Internal	External
Peak Systolic Velocity / End Diastolic Velocity (cm/s)	96/30	77/24	117/25	105/34	80/24	101/19
Peak systolic velocity ratio (ICA <sub>PSV</sub> /CCA <sub>PSV</sub> )		—			—	
St Mary's ratio (ICA <sub>PSV</sub> /CCA <sub>EDV</sub> )		—			—	

### Carotids

#### Approximate Percentage Stenosis (%)

Right		Left	
CCA	ICA	CCA	ICA
<<50	<10	<<50	<10

Significant ICA stenoses are graded using NASCET criteria

Plaque type: soft / mixed / dense / calcified;  
irregular / smooth / ulcerated

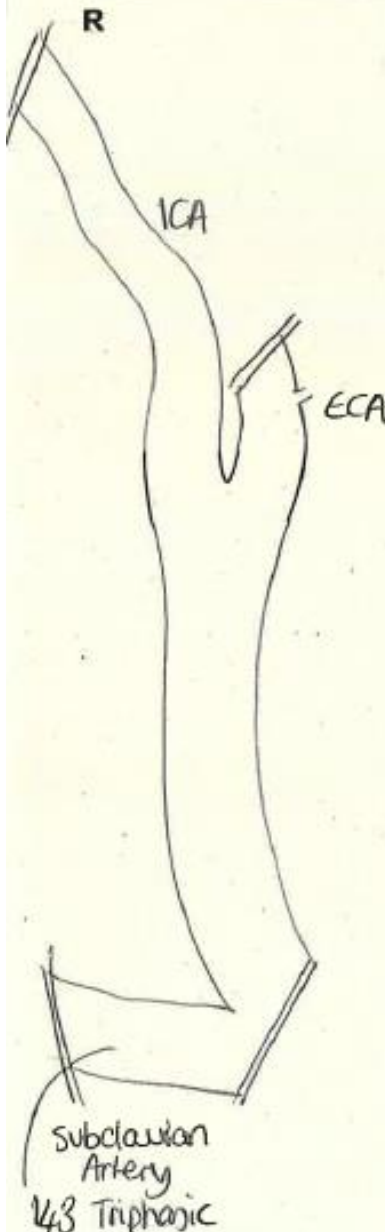
Right ICA	Left ICA
Intimal thickening	Intimal thickening

### Vertebrals

Right 89/28 cm/s	Left 65/20 cm/s
Antegrade	Antegrade

### Summary:

No significant carotid artery lesions detected bilaterally



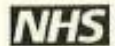
Clinical Vascular Scientist (CVS): Jodie Weston FA

AVS: Yes/No Date: 21/04/2022

VAS-DF-11 V1.2 Page 1 of 1 CVS second opinion:

AVS: Yes/No Date:

# Department of Vascular Ultrasound



4 North, Charing Cross Hospital

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## Indications:

② ICA stent surveillance

Dominant hand: right / left

## Duplex Ultrasound: Carotid and Vertebral Arteries

Consultant:

Davies

All velocities given in cm/s; Peak systolic velocity = PSV; End diastolic velocity = EDV; Intimal thickening = IT  
Common carotid artery = CCA; Internal Carotid Artery = ICA; External Carotid Artery = ECA

### Spectral Doppler Analysis

	Right			Left		
	Common	Internal	External	Common	Internal	External
Peak Systolic Velocity / End Diastolic Velocity (cm/s)	103 / 33	75 / 27	90 / 26	66 / 26	84 / 33	50 / 23
Peak systolic velocity ratio (ICA <sub>PSV</sub> /CCA <sub>PSV</sub> )		—			—	
St Mary's ratio (ICA <sub>PSV</sub> /CCA <sub>EDV</sub> )		—			—	

R

### Carotids

Approximate Percentage Stenosis (%)			
Right		Left	
CCA	ICA	CCA	ICA
<<50	<10	<<50	<10

Significant ICA stenoses are graded using NASCET criteria

Plaque type: soft / mixed / dense / calcified; irregular / smooth / ulcerated	
Right ICA	Left ICA
Intimal thickening	Stented

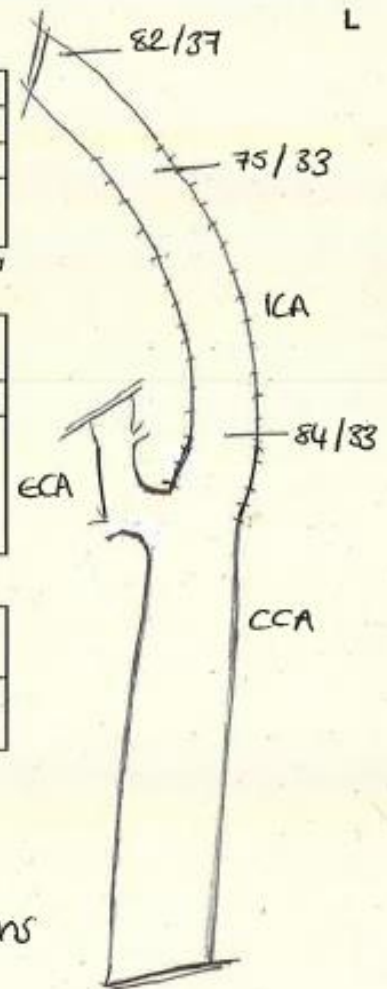
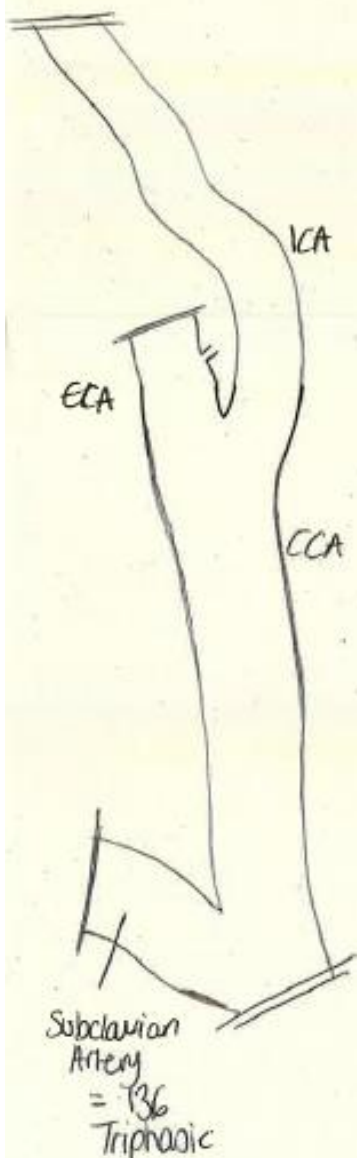
### Vertebrals

Right	Left
57 / 21 cm/s	68 / 23 cm/s
Antegrade	Antegrade

### Summary:

- \* ② ICA stent patent
- \* No significant carotid artery lesions detected bilaterally
- \* Relatively high bifurcation: noted bilaterally

L



Clinical Vascular Scientist (CVS): Jodie Weston

AVS: ☒ No Date: 21/04/2022

VAS-DF-11 V1.2 Page 1 of 1 CVS second opinion: N/A

AVS: Yes / No Date:

# Department of Vascular Ultrasound

**NHS**

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**Indications:** ④ arm weakness since waking up this morning (20/4/22) + 'slow speech'  
? ④ leg also weak

Dominant hand (right/ left)

**Consultant:** Elmamoun

## Duplex Ultrasound: Carotid and Vertebral Arteries

All velocities given in cm/s; Peak systolic velocity = PSV; End diastolic velocity = EDV; Intimal thickening = IT  
Common carotid artery = CCA; Internal Carotid Artery = ICA; External Carotid Artery = ECA

### Spectral Doppler Analysis

	Right			Left		
	Common	Internal	External	Common	Internal	External
Peak Systolic Velocity / End Diastolic Velocity (cm/s)	56/13	179/51	184/0	77/16	64/22	89/11
Peak systolic velocity ratio (ICA <sub>PSV</sub> /CCA <sub>PSV</sub> )		3.2			—	
St Mary's ratio (ICA <sub>PSV</sub> /CCA <sub>EDV</sub> )		13.8			—	

### Carotids

#### Approximate Percentage Stenosis (%)

Right		Left	
CCA	ICA	CCA	ICA
<50	see comments	<50	<10

Significant ICA stenoses are graded using NASCET criteria

#### Plaque type: soft / mixed / dense / calcified; irregular / smooth / ulcerated

Right ICA	Left ICA
mild calcified, smooth plaque + ?thrombus/soft plaque	smooth calcified.

### Vertebrals

Right 32/9 cm/s	Left 55/13 cm/s
Antegrade	Antegrade

### Summary:

Right ICA echolucent stenosis consistent with the appearance of thrombus/soft plaque.  
→ Haemodynamically 60-69% stenosis  
→ Visual Ø reduction (ECST due to ?thrombus) = 80-89% stenosis

ECA >50% stenosis

Left No significant carotid artery lesions detected.

Patient seen in Miss Riga clinic after duplex scan

Clinical Vascular Scientist (CVS): dodie Weshm

AVS: Yes/No Date: 20/04/2022

VAS-DF-11 V1.2 Page 1 of 1 CVS second opinion: N/A

AVS: Yes/No Date:

# Department of Vascular Ultrasound



4 North, Charing Cross Hospital

Imperial College Healthcare

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NHS Trust

Indications: 2019 - ② head tingling 2TIA  
September 2021 - word finding difficulty for ~30 minutes during  
crucial migraine  
No recent symptoms, only recent GP check up  
Dominant hand: right/left

## Duplex Ultrasound: Carotid and Vertebral Arteries

Consultant: Elmamoun

All velocities given in cm/s; Peak systolic velocity = PSV; End diastolic velocity = EDV; Intimal thickening = IT  
Common carotid artery = CCA; Internal Carotid Artery = ICA; External Carotid Artery = ECA

### Spectral Doppler Analysis

	Right			Left		
	Common	Internal	External	Common	Internal	External
Peak Systolic Velocity / End Diastolic Velocity (cm/s)	72/14	59/16	94/18	77/16	51/15	65/11
Peak systolic velocity ratio (ICA <sub>PSV</sub> /CCA <sub>PSV</sub> )		—			—	
St Mary's ratio (ICA <sub>PSV</sub> /CCA <sub>EDV</sub> )		—			—	

R

### Carotids

#### Approximate Percentage Stenosis (%)

Right		Left	
CCA	ICA	CCA	ICA
<<50	<10	<<50	<10

Significant ICA stenoses are graded using NASCET criteria

Plaque type: soft / mixed / dense / calcified;  
irregular / smooth / ulcerated

Right ICA	Left ICA
Intimal thickening /mixed, smooth	Intimal thickening /mixed, smooth

### Vertebrals

Right	Left
51/17 cm/s	58/12 cm/s
Antegrade	Antegrade

### Summary:

No significant carotid  
artery lesions detected  
bilaterally

L

Subclavian  
A.

147  
Triphasic

Clinical Vascular Scientist (CVS): dodie Weston

AVS: Yes/No Date: 20/04/2022

VAS-DF-11 V1.2 Page 1 of 1 CVS second opinion: N/A

AVS: Yes/No Date:

# Department of Vascular Ultrasound



4 North, Charing Cross Hospital

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Ext 17360 / 17322 Email: imperial.cvhvascularstudies@nhs.net

NHS Trust

Indications: 6/52 with intermittent weakness + pain in L arm + slurring of speech/word finding difficulty

Dominant hand: right/left

## Duplex Ultrasound: Carotid and Vertebral Arteries

Consultant: Elmamoun

All velocities given in cm/s; Peak systolic velocity = PSV; End diastolic velocity = EDV; Intimal thickening = IT  
Common carotid artery = CCA; Internal Carotid Artery = ICA; External Carotid Artery = ECA

### Spectral Doppler Analysis

	Right			Left		
	Common	Internal	External	Common	Internal	External
Peak Systolic Velocity / End Diastolic Velocity (cm/s)	94/29	100/32	100/33	102/30	70/28	93/29
Peak systolic velocity ratio (ICA <sub>PSV</sub> /CCA <sub>PSV</sub> )		—			—	
St Mary's ratio (ICA <sub>PSV</sub> /CCA <sub>EDV</sub> )		—			—	

R L

### Carotids

Approximate Percentage Stenosis (%)			
Right		Left	
CCA	ICA	CCA	ICA
<50	<10	<50	<10

Significant ICA stenoses are graded using NASCET criteria

Plaque type: soft / mixed / dense / calcified; irregular / smooth / ulcerated

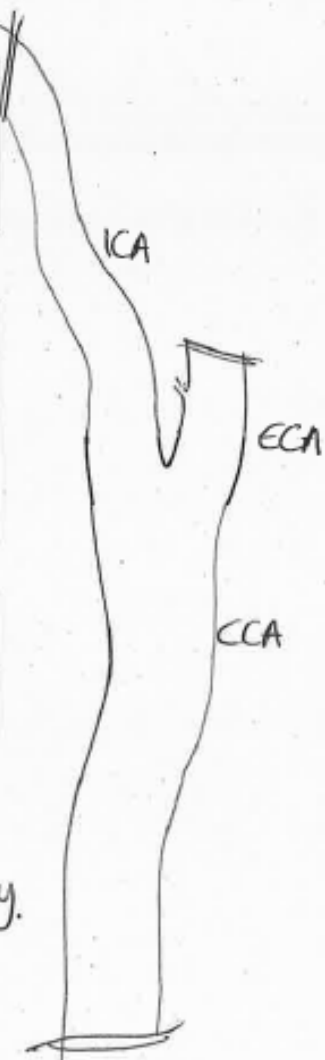
Right ICA	Left ICA
Intimal thickening	Intimal thickening

### Vertebrals

Right	Left
48/15 cm/s	52/18 cm/s
Antegrade	Antegrade

### Summary:

No significant carotid artery lesions detected bilaterally.



Clinical Vascular Scientist (CVS):

Jodie Weston

AVS: Yes/No Date: 20/04/2022

VAS-DF-11 V1.2 Page 1 of 1 CVS second opinion:

N/A

AVS: Yes/No Date:

# Department of Vascular Ultrasound

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Imperial College Healthcare  
NHS Trust

**Indications:** Episodes of blurred (R) eye vision +  
(R) face weakness + (L) arm weakness  
(few episodes since ~2nd April, variable duration)  
Dominant hand: (right) left

## Duplex Ultrasound: Carotid and Vertebral Arteries

Consultant: Elmamoun

All velocities given in cm/s; Peak systolic velocity = PSV; End diastolic velocity = EDV; Intimal thickening = IT  
Common carotid artery = CCA; Internal Carotid Artery = ICA; External Carotid Artery = ECA

### Spectral Doppler Analysis

	Right			Left		
	Common	Internal	External	Common	Internal	External
Peak Systolic Velocity / End Diastolic Velocity (cm/s)	83/26	58/26	81/19	112/26	60/32	66/25
Peak systolic velocity ratio (ICA <sub>PSV</sub> /CCA <sub>PSV</sub> )		—			—	
St Mary's ratio (ICA <sub>PSV</sub> /CCA <sub>EDV</sub> )		—			—	

R

### Carotids

Approximate Percentage Stenosis (%)			
Right		Left	
CCA	ICA	CCA	ICA
<<50	<10	<<50	<10

Significant ICA stenoses are graded using NASCET criteria

**Plaque type:** soft / mixed / dense / calcified;  
irregular / smooth / ulcerated

Right ICA	Left ICA
Intimal thickening	Intimal thickening

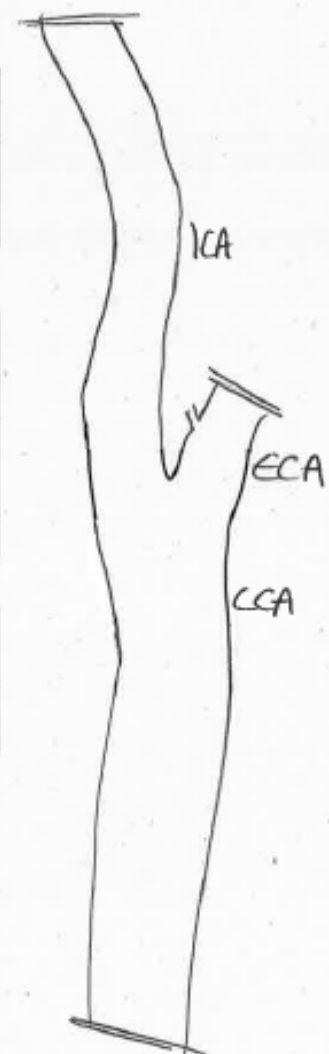
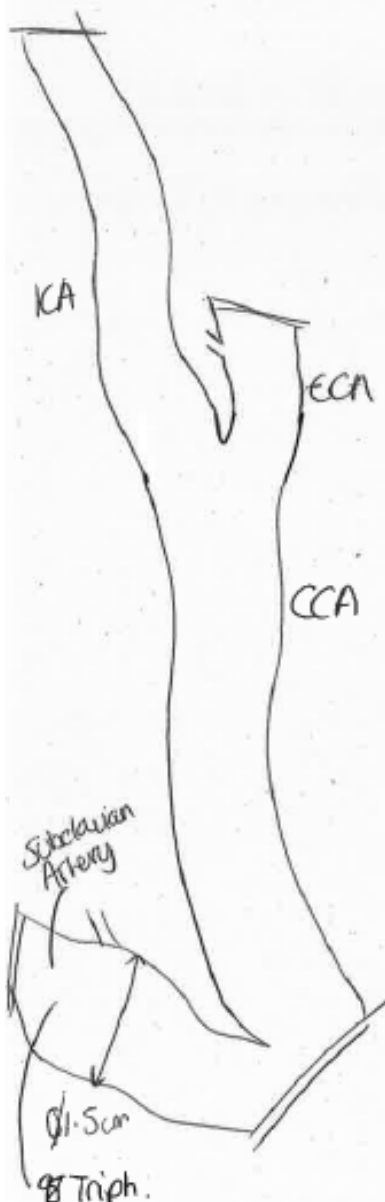
### Vertebrals

Right	Left
40/18 cm/s	55/20 cm/s
Antegrade	Antegrade

**Summary:** Arrhythmia noted  
(highly irregular)

No significant carotid  
artery lesions detected  
bilaterally

L



Clinical Vascular Scientist (CVS):

*dodie Weston*

AVS: Yes/No Date: 20/04/2022

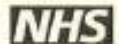
VAS-DF-11 V1.2 Page 1 of 1

CVS second opinion:

N/A

AVS: Yes/No Date:

# Department of Vascular Ultrasound



4 North, Charing Cross Hospital

Imperial College Healthcare

Ext 17360 / 17322 Email: imperial.cvhvascularstudies@nhs.net

NHS Trust

**Indications:** Referred for L MCA infarct.

Poor history from patient - accurate history not possible

Dominant hand: right / left

## Duplex Ultrasound: Carotid and Vertebral Arteries

Consultant: Jamil

All velocities given in cm/s; Peak systolic velocity = PSV; End diastolic velocity = EDV; Intimal thickening = IT.  
Common carotid artery = CCA; Internal Carotid Artery = ICA; External Carotid Artery = ECA

### Spectral Doppler Analysis

	Right			Left		
	Common	Internal	External	Common	Internal	External
Peak Systolic Velocity / End Diastolic Velocity (cm/s)	50/12	50/13	76/12	45/11	50/22	61/11
Peak systolic velocity ratio (ICA <sub>PSV</sub> /CCA <sub>PSV</sub> )		—			—	
St Mary's ratio (ICA <sub>PSV</sub> /CCA <sub>EDV</sub> )		—			—	

R

### Carotids

#### Approximate Percentage Stenosis (%)

Right		Left	
CCA	ICA	CCA	ICA
<50%	30-39%	<50%	<10%

Significant ICA stenoses are graded using NASCET criteria

**Plaque type:** soft / mixed / dense / calcified;  
irregular / smooth / ulcerated

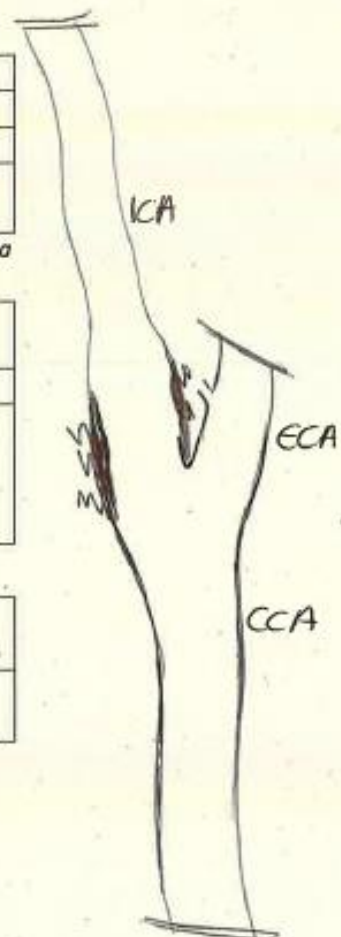
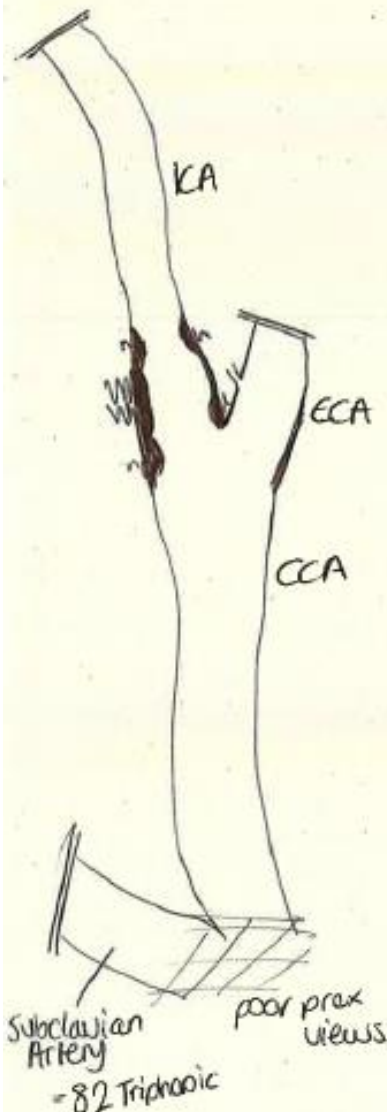
Right ICA	Left ICA
calcified + mixed mild irreg.	Calcified, smooth.

### Vertebrals

Right 36/9 cm/s	Left 29/11 cm/s
Antegrade	Antegrade

### Summary:

No significant carotid artery lesions detected bilaterally



Clinical Vascular Scientist (CVS): Joelle Weston

AVS: Yes / No Date: 20/04/2022

VAS-DF-11 V1.2 Page 1 of 1 CVS second opinion: N/A

AVS: Yes / No Date:

# Department of Vascular Ultrasound

**NHS**

4 North, Charing Cross Hospital

Imperial College Healthcare

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NHS Trust

**Indications:** weakness/droop affecting (R) face  
+ word finding difficulty/aphasia  
Onset Thursday 14<sup>th</sup> April ~2pm. Fully resolved by Friday 15<sup>th</sup> April ~noon.  
Dominant hand: right / left

## Duplex Ultrasound: Carotid and Vertebral Arteries

Consultant: Drumm

All velocities given in cm/s; Peak systolic velocity = PSV; End diastolic velocity = EDV; Intimal thickening = IT  
Common carotid artery = CCA; Internal Carotid Artery = ICA; External Carotid Artery = ECA

### Spectral Doppler Analysis

	Right			Left		
	Common	Internal	External	Common	Internal	External
Peak Systolic Velocity / End Diastolic Velocity (cm/s)	82/22	217/62	117/26	98/34	97/33	108/29
Peak systolic velocity ratio (ICA <sub>PSV</sub> /CCA <sub>PSV</sub> )		2.6			—	
St Mary's ratio (ICA <sub>PSV</sub> /CCA <sub>EDV</sub> )		9.9			—	

### Carotids

Approximate Percentage Stenosis (%)			
Right		Left	
CCA	ICA	CCA	ICA
<50	50-59%	<50	<10

Significant ICA stenoses are graded using NASCET criteria

Plaque type: soft / mixed / dense / calcified; irregular / smooth / ulcerated	
Right ICA	Left ICA
Calcified + mixed.	Calcified
mild irreg.	Smooth.

### Vertebrals

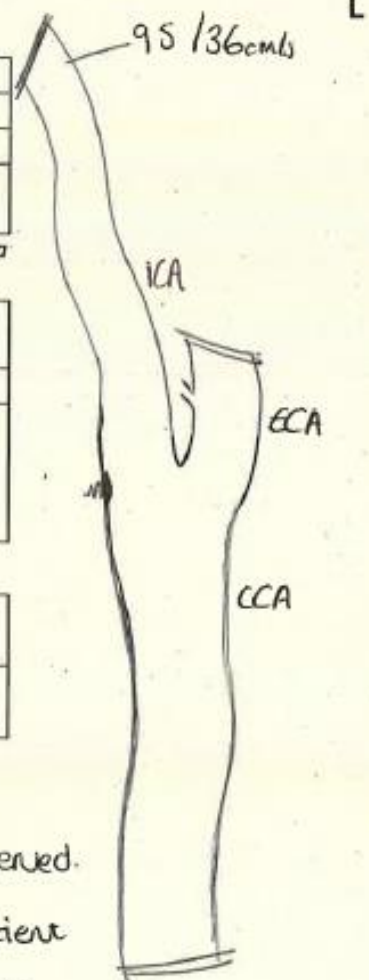
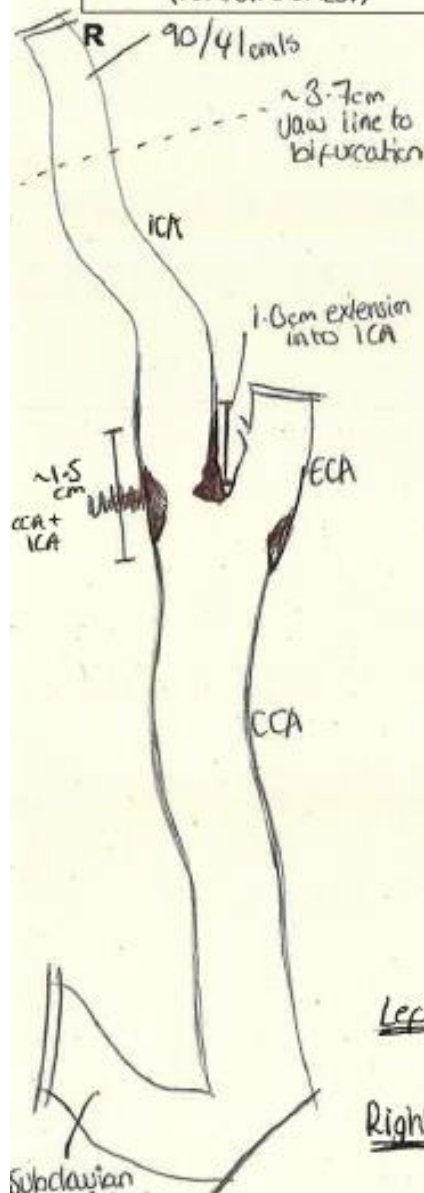
Right	34/17 cm/s	Left	39/11 cm/s
Antegrade		Antegrade	

### Summary:

Arrhythmia noted  
Episodes of irregular heart rate  
+ normal heart rate/rhythm observed.  
? paroxysmal arrhythmia.  
not previously known to patient

Left - No significant carotid artery lesions detected

Right 50-59% ICA stenosis



Clinical Vascular Scientist (CVS): Dr. Weston

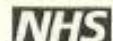
AVS: Yes (N) Date: 19/04/2022

VAS-DF-11 V1.2 Page 1 of 1 CVS second opinion: N/A

AVS: Yes / No Date:

# Department of Vascular Ultrasound

4 North, Charing Cross Hospital  
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Imperial College Healthcare

NHS Trust

## Indications: 3 episodes:

- ① ~ 1 month ago, blurred vision for ~ 1 min.
- ② 4th April, blurred vision for ~ 30 minutes
- ③ 11th April, speech disturbance + ?memory loss + blurred vision for ~ 10 mins

## Duplex Ultrasound: Carotid and Vertebral Arteries

Consultant: Brown

All velocities given in cm/s; Peak systolic velocity = PSV; End diastolic velocity = EDV; Intimal thickening = IT  
Common carotid artery = CCA; Internal Carotid Artery = ICA; External Carotid Artery = ECA

### Spectral Doppler Analysis

	Right			Left		
	Common	Internal	External	Common	Internal	External
Peak Systolic Velocity / End Diastolic Velocity (cm/s)	80/23	78/28	76/19	78/27	71/30	92/28
Peak systolic velocity ratio (ICA <sub>PSV</sub> /CCA <sub>PSV</sub> )		—			—	
St Mary's ratio (ICA <sub>PSV</sub> /CCA <sub>EDV</sub> )		—			—	

### Carotids

#### Approximate Percentage Stenosis (%)

Right		Left	
CCA	ICA	CCA	ICA
<50	<10	<50	<10

Significant ICA stenoses are graded using NASCET criteria

#### Plaque type: soft / mixed / dense / calcified; irregular / smooth / ulcerated

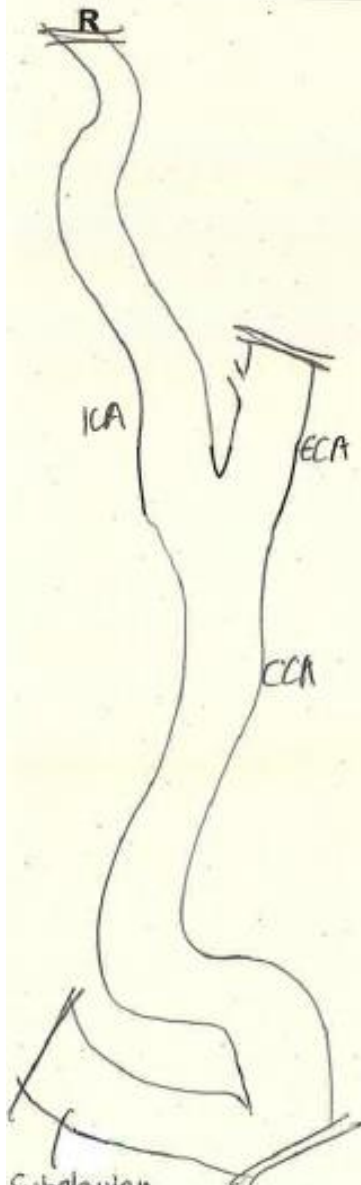
Right ICA	Left ICA
Intimal thickening / mixed smooth	Intimal thickening / mixed smooth

### Vertebrals

Right 40/13 cm/s	Left 46/17 cm/s
Antegrade	Antegrade

### Summary:

No significant carotid artery lesions detected bilaterally.



Subclavian Artery = 42 triphasic

Clinical Vascular Scientist (CVS): *Adie Watson*

AVS: ~~Yes~~ No Date: 19/04/2022

VAS-DF-11 V1.2 Page 1 of 1 CVS second opinion: *N/A*

AVS: Yes / No Date:

# Department of Vascular Ultrasound



4 North, Charing Cross Hospital

Imperial College Healthcare

Ext 17360 / 17322 Email: imperial.cxhvascularstudies@nhs.net

NHS Trust

Indications: poor patient history - reports stroke, onset  
?sat/sunday causing tingling down RLS.  
Referral states ② facial weakness

Dominant hand: right/ left

## Duplex Ultrasound: Carotid and Vertebral Arteries

Consultant: Malik.

All velocities given in cm/s; Peak systolic velocity = PSV; End diastolic velocity = EDV; Intimal thickening = IT  
Common carotid artery = CCA; Internal Carotid Artery = ICA; External Carotid Artery = ECA

### Spectral Doppler Analysis

	Right			Left		
	Common	Internal	External	Common	Internal	External
Peak Systolic Velocity / End Diastolic Velocity (cm/s)	34/8	16/-10	63/7	68/17	53/19	55/12
Peak systolic velocity ratio (ICA <sub>PSV</sub> /CCA <sub>PSV</sub> )		-			-	
St Mary's ratio (ICA <sub>PSV</sub> /CCA <sub>EDV</sub> )		-			-	

### Carotids

#### Approximate Percentage Stenosis (%)

Right		Left	
CCA	ICA	CCA	ICA
<50	see comments	<50	<10

Significant ICA stenoses are graded using NASCET criteria

#### Plaque type: soft / mixed / dense / calcified; irregular / smooth / ulcerated

Right ICA	Left ICA
mix / smooth	mix / smooth

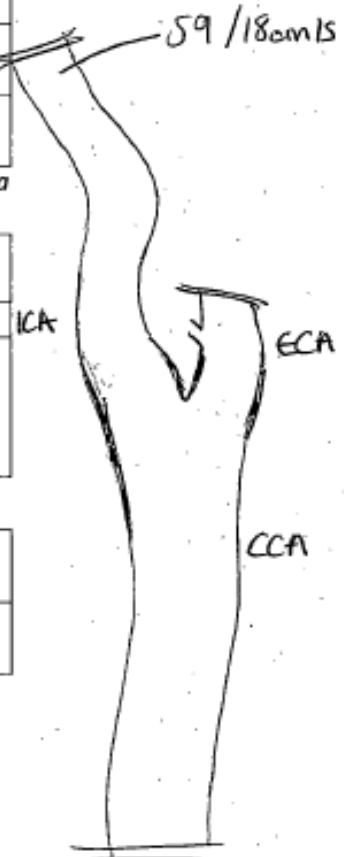
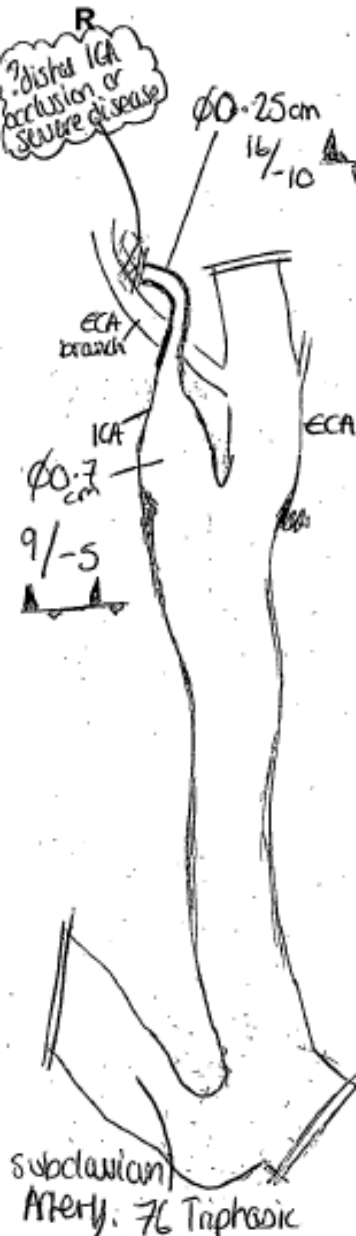
### Vertebrals

Right 35/13 cm/s	Left 67/24 cm/s
Antegrade	Antegrade

Summary: Arrhythmia noted

Right Very low flow in prox ICA - high resistance with reverse flow component strongly suggestive of distal occlusion or severe disease. Small calibre noted in mid ICA segment as shown.

Left No significant carotid artery lesions detected.



Clinical Vascular Scientist (CVS): David Weston

AVS: Yes/No Date: 19/04/2022

VAS-DF-11 V1.2 Page 1 of 1 CVS second opinion: N/A

AVS: Yes/No Date:

# Department of Vascular Ultrasound

4 North, Charing Cross Hospital

Ext 17360 / 17322 Email: imperial.cvhvascularstudies@nhs.net



Imperial College Healthcare

NHS Trust

Indications: \* No history from patient. Referral states:

Aphasia + right sided weakness

Dominant hand: right/left?

## Duplex Ultrasound: Carotid and Vertebral Arteries

Consultant: Malik

All velocities given in cm/s; Peak systolic velocity = PSV; End diastolic velocity = EDV; Intimal thickening = IT  
Common carotid artery = CCA; Internal Carotid Artery = ICA; External Carotid Artery = ECA

### Spectral Doppler Analysis

	Right			Left		
	Common	Internal	External	Common	Internal	External
Peak Systolic Velocity / End Diastolic Velocity (cm/s)	72/15	184/68	102/16	77/16	665/184	133/11
Peak systolic velocity ratio (ICA <sub>PSV</sub> /CCA <sub>PSV</sub> )		2.6			8.6	
St Mary's ratio (ICA <sub>PSV</sub> /CCA <sub>EDV</sub> )		12.3			41.6	

### Carotids

#### Approximate Percentage Stenosis (%)

Right		Left	
CCA	ICA	CCA	ICA
<50	60-69	<50	>90

\* Significant ICA stenoses are graded using NASCET criteria

Plaque type: soft / mixed / dense / calcified;  
irregular / smooth / ulcerated

Right ICA	Left ICA
mild mixed / cat+ plaque + ? thrombus	mixed / cat+ irregular

### Vertebrals

Right 54/15 cm/s	Left 27/7 cm/s
Antegrade	Antegrade

### Summary:

Left ICA >90% stenosis.

predominantly mixed / cat+ irregular plaque.

Right ICA haemodynamically 60-69% stenosis however underestimated due to ? thrombus (echolucent). ECST  $\phi$  reduction ~70-80% stenosis

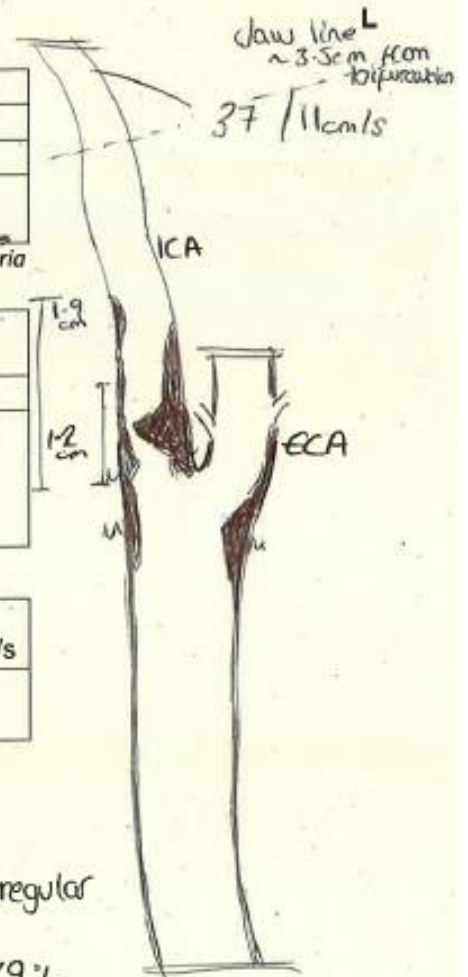
\* 911 doctors + Vasc SpR on call informed of findings.\*

Clinical Vascular Scientist (CVS): Jodie Weston

AVS: Yes/No Date: 14/04/2022

VAS-DF-11 V1.2 Page 1 of 1 CVS second opinion: N/A

AVS: Yes/No Date:



# Department of Vascular Ultrasound

4 North, Charing Cross Hospital

Ext 17360 / 17322 Email: imperial.cvhvascularstudies@nhs.net



Imperial College Healthcare

NHS Trust

**Indications:** Previous (R) ICA dissection reported on Northwick Park ultrasound 2018. (Not previously identified on Imperial Vascular duplex scans)

Dominant hand: right (left)

## Duplex Ultrasound: Carotid and Vertebral Arteries

Consultant: Dawies

All velocities given in cm/s; Peak systolic velocity = PSV; End diastolic velocity = EDV; Intimal thickening = IT  
Common carotid artery = CCA; Internal Carotid Artery = ICA; External Carotid Artery = ECA

### Spectral Doppler Analysis

	Right			Left		
	Common	Internal	External	Common	Internal	External
Peak Systolic Velocity / End Diastolic Velocity (cm/s)	87/21	58/28	109/24	79/24	65/32	93/14
Peak systolic velocity ratio (ICA <sub>PSV</sub> /CCA <sub>PSV</sub> )		—			—	
St Mary's ratio (ICA <sub>PSV</sub> /CCA <sub>EDV</sub> )		—			—	

### Carotids

#### Approximate Percentage Stenosis (%)

Right		Left	
CCA	ICA	CCA	ICA
<10	<10	<10	<10

Significant ICA stenoses are graded using NASCET criteria

**Plaque type:** soft / mixed / dense / calcified;  
irregular / smooth / ulcerated

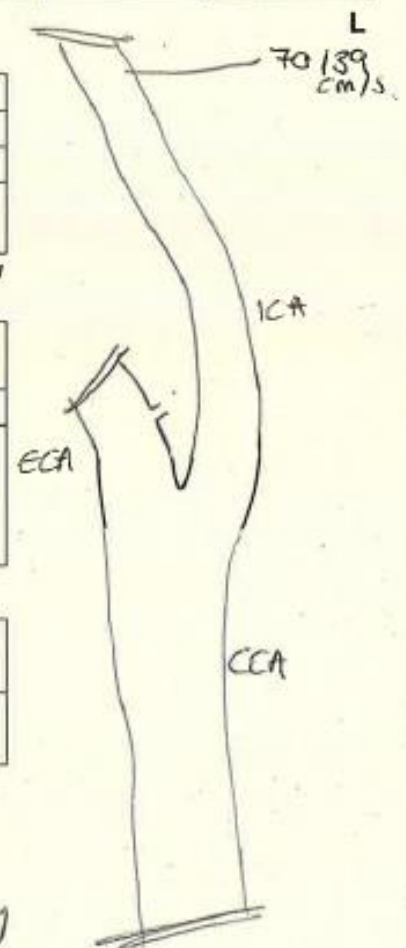
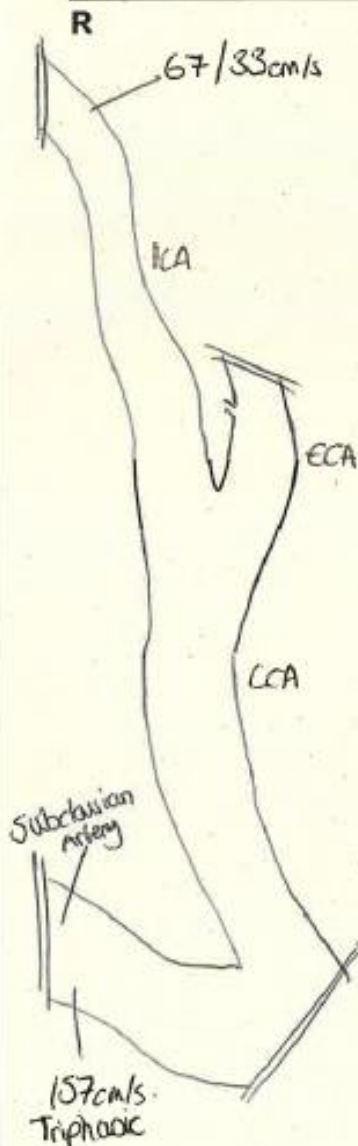
Right ICA	Left ICA
Normal / Intimal thickening	Normal / Intimal thickening

### Vertebrals

Right 38/12 cm/s	Left 54/19 cm/s
Antegrade	Antegrade

### Summary:

- \* No evidence of any significant carotid artery lesions bilaterally
- \* No evidence of dissection



Clinical Vascular Scientist (CVS): David Weston

AVS: Yes (No) Date: 14/04/2022

VAS-DF-11 V1.2 Page 1 of 1 CVS second opinion: N/A

AVS: Yes / No Date: .....

# Department of Vascular Ultrasound



Mary Stanford Wing, St Mary's Hospital Imperial College Healthcare  
Ext 23739 / 23374 Email: imperial.irvinevascular.studies@nhs.net NHS Trust

Indications: Post op (L) CEA + haematoma evacuation

Dominant hand (right) / left

## Duplex Ultrasound: Carotid and Vertebral Arteries

Consultant: MUSA

All velocities given in cm/s; Peak systolic velocity = PSV; End diastolic velocity = EDV; Intimal thickening = IT  
Common carotid artery = CCA; Internal Carotid Artery = ICA; External Carotid Artery = ECA

Spectral Doppler Analysis	Right			Left		
	Common	Internal	External	Common	Internal	External
Peak Systolic Velocity / End Diastolic Velocity (cm/s)	99/28	270/76	116/25	98/30	150/34	254/40
Peak systolic velocity ratio (ICA <sub>PSV</sub> /CCA <sub>PSV</sub> )		2.7			1.5	
St Mary's ratio (ICA <sub>PSV</sub> /CCA <sub>EDV</sub> )		9.6			5.0	



### Carotids

Approximate Percentage Stenosis (%)			
Right		Left	
CCA	ICA	CCA	ICA
<50	50-59	<50%	<50%

Significant ICA stenoses are graded using NASCET criteria

Plaque type: soft / mixed / dense / calcified; irregular / smooth / ulcerated	
Right ICA	Left ICA
Mixed + calcified Irregular	Post op CEA

### Vertebrals

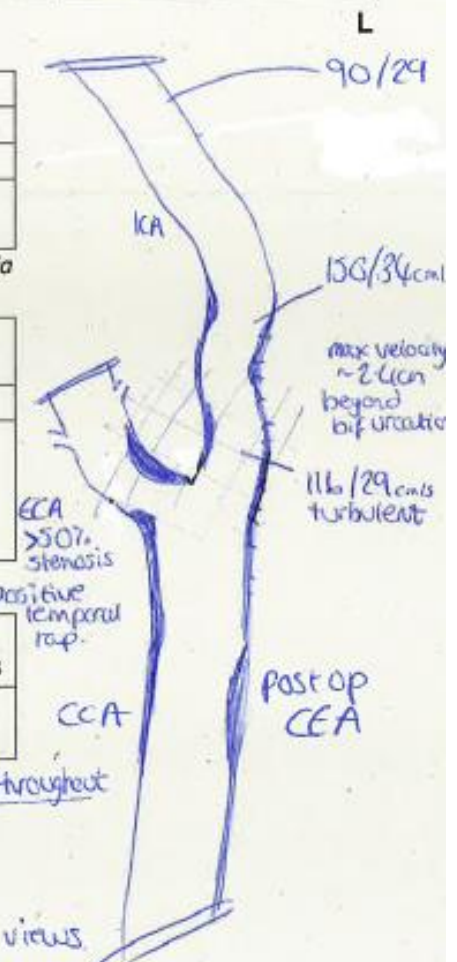
Right	Left
65/21 cm/s	28/9 cm/s
Antegrade	Antegrade

Summary: Relatively high velocities noted throughout

Right :- ICA 50-59% stenosis

Left :- Post op CEA with suboptimal views  
Some raised velocities in the mid vessel (~2.4cm distal to the bifurcation) however do not appear significantly raised

- >50% ECA stenosis



Clinical Vascular Scientist (CVS): Charlie Weston

AVS: Yes/No Date: 13/04/2022

VAS-DF-41 V1.2 Page 1 of 1 CVS second opinion: N/A

AVS: Yes/No Date:

# Department of Vascular Ultrasound



4 North, Charing Cross Hospital

Imperial College Healthcare

Ext 17360 / 17322 Email: imperial.cvhvascularstudies@nhs.net

NHS Trust

## Indications:

TIA clinic

Episode of confusion lasting ~1 hour on Friday 4th March.

Dominant hand: right / left

## Duplex Ultrasound: Carotid and Vertebral Arteries

Consultant: Drumm

All velocities given in cm/s; Peak systolic velocity = PSV; End diastolic velocity = EDV; Intimal thickening = IT  
Common carotid artery = CCA; Internal Carotid Artery = ICA; External Carotid Artery = ECA

### Spectral Doppler Analysis

	Right			Left		
	Common	Internal	External	Common	Internal	External
Peak Systolic Velocity / End Diastolic Velocity (cm/s)	108/26	70/25	123/19	95/24	68/24	143/17
Peak systolic velocity ratio (ICA <sub>PSV</sub> /CCA <sub>PSV</sub> )		—			—	
St Mary's ratio (ICA <sub>PSV</sub> /CCA <sub>EDV</sub> )		—			—	

### Carotids

#### Approximate Percentage Stenosis (%)

Right		Left	
CCA	ICA	CCA	ICA
<50	10-20	<50	0-10

Significant ICA stenoses are graded using NASCET criteria

Plaque type: soft / mixed / dense / calcified; irregular / smooth / ulcerated

Right ICA	Left ICA
Mixed / smooth	mixed / Ca++ smooth

Vertebrals: High resistance + small calibre? distal disease

Right	Left
29/0 cm/s	55/18 cm/s
Antegrade	Antegrade

### Summary:

- No significant carotid artery lesions detected bilaterally
- (R) vertebral artery appears small calibre and high resistance flow - ?distal significant disease

Clinical Vascular Scientist (CVS): Jodie Weston

AVS: Yes/No Date: 12/04/2022

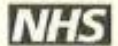
VAS-DF-11 V1.2 Page 1 of 1 CVS second opinion: N/A

AVS: Yes/No Date:

# Department of Vascular Ultrasound

4 North, Charing Cross Hospital

Ext 17360 / 17322 Email: imperial.cvhvascularstudies@nhs.net



Imperial College Healthcare

NHS Trust

**Indications:** 2x strokes (Difficult history)  
1st ~ 8 weeks ago, lack of leg control / vertigo limiting walking  
2nd ~ Thursday 7th April 22 - (L) facial drop + (L) hand weakness (ongoing)  
Dominant hand: right / left

## Duplex Ultrasound: Carotid and Vertebral Arteries

Consultant: Brown

All velocities given in cm/s; Peak systolic velocity = PSV, End diastolic velocity = EDV, intimal thickening = IT  
Common carotid artery = CCA; Internal Carotid Artery = ICA; External Carotid Artery = ECA

### Spectral Doppler Analysis

	Right			Left		
	Common	Internal	External	Common	Internal	External
Peak Systolic Velocity / End Diastolic Velocity (cm/s)	72/14	70/15	85/10	80/16	64/19	74/8
Peak systolic velocity ratio (ICA <sub>PSV</sub> /CCA <sub>PSV</sub> )		—			—	
St Mary's ratio (ICA <sub>PSV</sub> /CCA <sub>EDV</sub> )		—			—	



### Carotids

#### Approximate Percentage Stenosis (%)

Right		Left	
CCA	ICA	CCA	ICA
<50	20-40	<50	0-10

Significant ICA stenoses are graded using NASCET criteria

#### Plaque type: soft / mixed / dense / calcified; irregular / smooth / ulcerated

Right ICA	Left ICA
Calcified Smooth	Calcified Smooth

### Vertebrals

Right 33/10 cm/s	Left 46/11 cm/s
Antegrade	Antegrade

### Summary:

No significant carotid artery lesions detected bilaterally.

\* TIA clinic doctor informed not for review today

\* Arrhythmia reported by patient however regular cardiac rhythm (no arrhythmia) observed during scan

Clinical Vascular Scientist (CVS): Jodie Weston

AVS: Yes (No) Date: 12/04/2022

VAS-DF-11 V1.2 Page 1 of 1 CVS second opinion: N/A

AVS: Yes / No Date:

# Department of Vascular Ultrasound

4 North, Charing Cross Hospital  
Ext 17360 / 17322 Email: imperial.cxhvascularstudies@nhs.net

Imperial College Healthcare  
NHS Trust

## Indications:

- (R) eye vision loss since 09/04/2022.
- Diagnosis of central retinal vein occlusion

Dominant hand: right/left

## Duplex Ultrasound: Carotid and Vertebral Arteries

Consultant: Bently

All velocities given in cm/s; Peak systolic velocity = PSV; End diastolic velocity = EDV; Intimal thickening = IT  
Common carotid artery = CCA; Internal Carotid Artery = ICA; External Carotid Artery = ECA

### Spectral Doppler Analysis

	Right			Left		
	Common	Internal	External	Common	Internal	External
Peak Systolic Velocity / End Diastolic Velocity (cm/s)	116/28	134/30	280/21	132/23	133/35	141/15
Peak systolic velocity ratio (ICA <sub>PSV</sub> /CCA <sub>PSV</sub> )		1.16			1.01	
St Mary's ratio (ICA <sub>PSV</sub> /CCA <sub>EDV</sub> )		4.79			5.78	

### Carotids

#### Approximate Percentage Stenosis (%)

Right		Left	
CCA	ICA	CCA	ICA
<50	<50% see comments	<50	<<50% see comments

Significant ICA stenoses are graded using NASCET criteria

#### Plaque type: soft / mixed / dense / calcified; irregular / smooth / ulcerated

Right ICA	Left ICA
Mixed / calcified irreg	mixed / calc smooth.

### Vertebrals

Right 111/28 cm/s	Left 35/8 cm/s
Antegrade	Antegrade

### Summary:

Arrhythmia + generalised raised velocities noted bilaterally

Left No significant stenoses identified

- note ICA PSV >125cm/s however no significant change to CCA PSV. NASCET % reduction 0-10%

Right No significant ICA stenosis identified

- note PSV >125cm/s however no significant change from CCA velocities. ICA NASCET % reduction ~30-40%

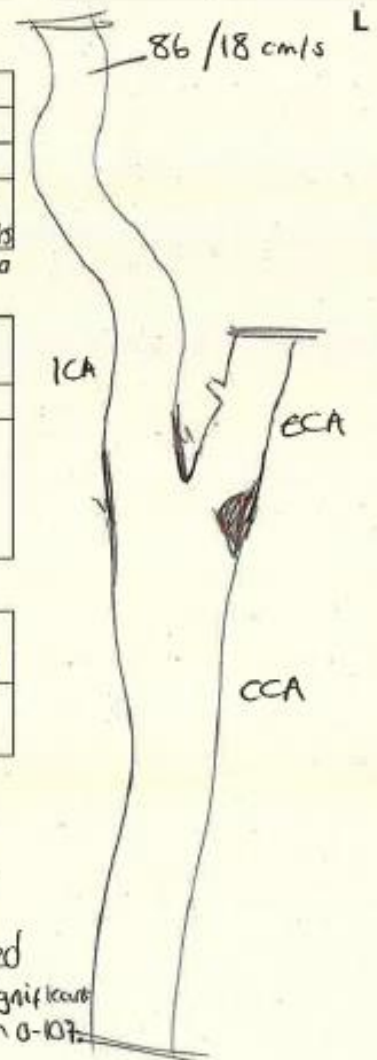
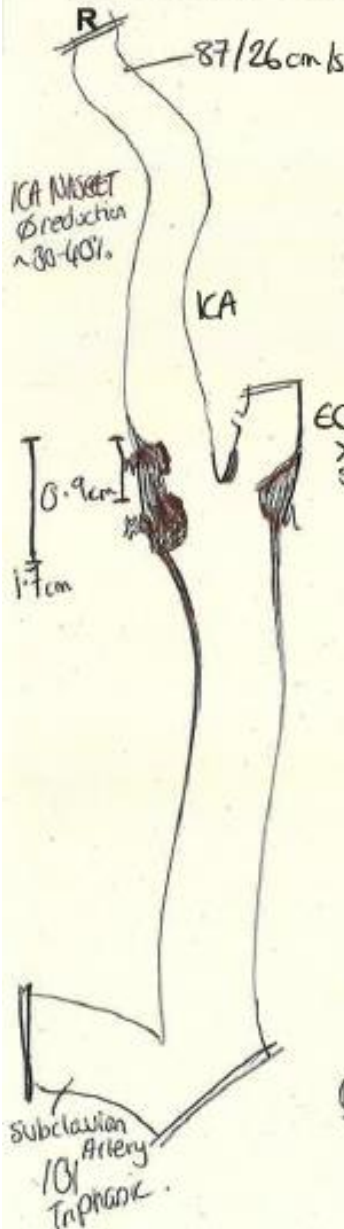
>50% stenosis ECA

Clinical Vascular Scientist (CVS): Josie Weston

AVS: Yes/No Date: 11/04/2022

VAS-DF-11 V1.2 Page 1 of 1 CVS second opinion: N/A

AVS: Yes/No Date:



# Department of Vascular Ultrasound



4 North, Charing Cross Hospital

Imperial College Healthcare

Ext 17360 / 17322 Email: imperial.cvhvascularstudies@nhs.net

NHS Trust

**Indications:** Referred for impaired coordination, confusion + disorientation after headache. Patient describes episode of inability to correctly select numbers on PC/remote control on 8/4/22 lasting few hours. Dominant hand: right / left

## Duplex Ultrasound: Carotid and Vertebral Arteries

**Consultant:** not stated - TIA clinic

All velocities given in cm/s; Peak systolic velocity = PSV; End diastolic velocity = EDV; Intimal thickening = IT  
Common carotid artery = CCA; Internal Carotid Artery = ICA; External Carotid Artery = ECA

### Spectral Doppler Analysis

	Right			Left		
	Common	Internal	External	Common	Internal	External
Peak Systolic Velocity / End Diastolic Velocity (cm/s)	80/8	71/17	88/7	71/9	61/13	106/9
Peak systolic velocity ratio (ICA <sub>PSV</sub> /CCA <sub>PSV</sub> )		-			-	
St Mary's ratio (ICA <sub>PSV</sub> /CCA <sub>EDV</sub> )		-			-	

R 69/16 cm/s

### Carotids

#### Approximate Percentage Stenosis (%)

Right		Left	
CCA	ICA	CCA	ICA
<50	<20	<50	0-10

Significant ICA stenoses are graded using NASCET criteria

**Plaque type:** soft / mixed / dense / calcified; irregular / smooth / ulcerated

Right ICA	Left ICA
Mix / Ca <sup>++</sup> smooth.	Mix / smooth

### Vertebrals

Right 52/7 cm/s	Left 87/20 cm/s
Antegrade	Antegrade

### Summary:

No significant carotid artery lesions detected bilaterally.

Subclavian Artery

134 triphasic

Clinical Vascular Scientist (CVS): Jodie Weston AVS: ☒ No Date: 4/04/22

VAS-DF-11 V1.2 Page 1 of 1 CVS second opinion: N/A AVS: Yes / No Date:

# Department of Vascular Ultrasound



4 North, Charing Cross Hospital

Imperial College Healthcare

Ext 17360 / 17322 Email: imperial.cvhvascularstudies@nhs.net

NHS Trust

**Indications:** Recent (R) eye retinal artery occlusion.  
Patient reports reduction in (R) eye vision, now improving  
?related to retinal artery investigations Dominant hand (right / left)  
(limited english noted)

**Consultant:** George

## Duplex Ultrasound: Carotid and Vertebral Arteries

All velocities given in cm/s; Peak systolic velocity = PSV; End diastolic velocity = EDV; Intimal thickening = IT  
Common carotid artery = CCA; Internal Carotid Artery = ICA; External Carotid Artery = ECA

### Spectral Doppler Analysis

	Right			Left		
	Common	Internal	External	Common	Internal	External
Peak Systolic Velocity / End Diastolic Velocity (cm/s)	62/16	73/30	120/28	97/22	76/28	156/22
Peak systolic velocity ratio (ICA <sub>PSV</sub> /CCA <sub>PSV</sub> )		—			—	
St Mary's ratio (ICA <sub>PSV</sub> /CCA <sub>EDV</sub> )		—			—	

R

L

### Carotids

#### Approximate Percentage Stenosis (%)

Right		Left	
CCA	ICA	CCA	ICA
<50	20-29	<50	10-19

Significant ICA stenoses are graded using NASCET criteria

**Plaque type:** soft / mixed / dense / calcified;  
irregular / smooth / ulcerated

Right ICA	Left ICA
mix / calcified smooth	mix / calcified smooth

### Vertebrals

Right 53/14 cm/s	Left 50/14 cm/s
Antegrade	Antegrade

### Summary:

\* Arrhythmia noted - ? not known to patient  
(language barrier noted)

No significant carotid artery lesions detected bilaterally



Clinical Vascular Scientist (CVS): Jodie Wesron

AVS: Yes/No Date: 31/3/2022

# Department of Vascular Ultrasound



4 North, Charing Cross Hospital

Imperial College Healthcare

Ext 17360 / 17322 Email: imperial.cxhvascularstudies@nhs.net

NHS Trust

## Indications:

Previous bilateral CBT excision

Surveillance duplex

Dominant hand: right/left

## Duplex Ultrasound: Carotid and Vertebral Arteries

Consultant: Dawies

All velocities given in cm/s; Peak systolic velocity = PSV; End diastolic velocity = EDV; intimal thickening = IT  
Common carotid artery = CCA; Internal Carotid Artery = ICA; External Carotid Artery = ECA

### Spectral Doppler Analysis

	Right			Left		
	Common	Internal	External	Common	Internal	External
Peak Systolic Velocity / End Diastolic Velocity (cm/s)	70/33	70/28	69/21	88/36	64/28	77/24
Peak systolic velocity ratio (ICA <sub>PSV</sub> /CCA <sub>PSV</sub> )		-			-	
St Mary's ratio (ICA <sub>PSV</sub> /CCA <sub>EDV</sub> )		-			-	

### Carotids

#### Approximate Percentage Stenosis (%)

Right		Left	
CCA	ICA	CCA	ICA
<50	<10	<50	<10

Significant ICA stenoses are graded using NASCET criteria

#### Plaque type: soft / mixed / dense / calcified; irregular / smooth / ulcerated

Right ICA	Left ICA
Mixed / calcified smooth / scarring	Mixed smooth

### Vertebrals

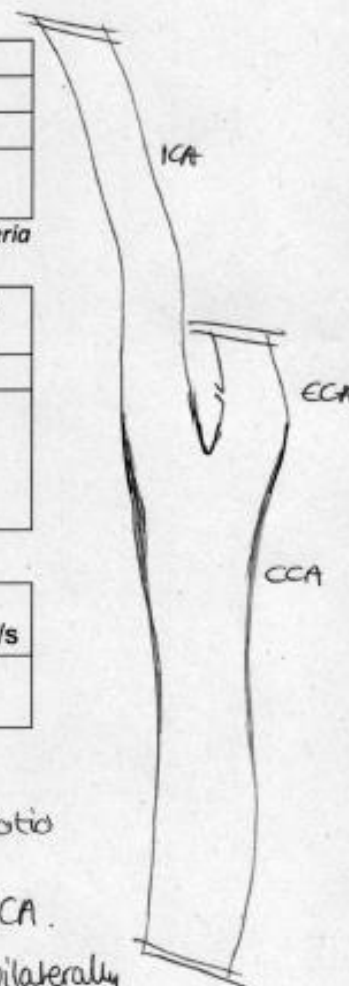
Right 57/28 cm/s	Left 46/24 cm/s
Antegrade	Antegrade

### Summary:

No evidence of any significant carotid artery lesions detected bilaterally

Acoustic shadowing / scarring noted @ ICA.

No evidence of carotid body tumour bilaterally



Clinical Vascular Scientist (CVS): Jodie Weston

AVS: Yes (No) Date: 31/03/2022

# Department of Vascular Ultrasound

4 North, Charing Cross Hospital  
Ext 17360 / 17322 Email: imperial.cxhvascularstudies@nhs.net

Imperial College Healthcare



NHS Trust

## Indications:

1-2mins visual loss in (L) eye

Dominant hand (right) left

Consultant: Brown

## Duplex Ultrasound: Carotid and Vertebral Arteries

All velocities given in cm/s; Peak systolic velocity = PSV; End diastolic velocity = EDV; Intimal thickening = IT  
Common carotid artery = CCA; Internal Carotid Artery = ICA; External Carotid Artery = ECA

### Spectral Doppler Analysis

	Right			Left		
	Common	Internal	External	Common	Internal	External
Peak Systolic Velocity / End Diastolic Velocity (cm/s)	85/15	85/22	95/14	184/19	71/15	109/12
Peak systolic velocity ratio (ICA <sub>PSV</sub> /CCA <sub>PSV</sub> )		—			—	
St Mary's ratio (ICA <sub>PSV</sub> /CCA <sub>EDV</sub> )		—			—	

R

L

### Carotids

#### Approximate Percentage Stenosis (%)

Right		Left	
CCA	ICA	CCA	ICA
<50	<20	<50	20-30

Significant ICA stenoses are graded using NASCET criteria

#### Plaque type: soft / mixed / dense / calcified; irregular / smooth / ulcerated

Right ICA	Left ICA
mix / calcified smooth	mix, smooth

### Vertebrals

Right 43/14 cm/s	Left 37/16 cm/s
Antegrade	Antegrade

### Summary:

No evidence of any significant carotid artery lesions bilaterally



Clinical Vascular Scientist (CVS):

Jodie Weston

AVS: Yes (No)

Date: 29/03/2022

VAS-DF-11 V1.2 Page 1 of 1

CVS second opinion:

N/A

AVS: Yes / No

Date:

# Department of Vascular Ultrasound



4 North, Charing Cross Hospital

Imperial College Healthcare

Ext 17360 / 17322 Email: imperial.cvhvascularstudies@nhs.net

NHS Trust

**Indications:** Patient non responsive - Scan completed at request of staff nurse. Ward doctors informed.

Requested for infarcts on MRI

Dominant hand: right / left

## Duplex Ultrasound: Carotid and Vertebral Arteries

Consultant: Jamil

All velocities given in cm/s: Peak systolic velocity = PSV; End diastolic velocity = EDV; Intimal thickening = IT  
Common carotid artery = CCA; Internal Carotid Artery = ICA; External Carotid Artery = ECA

### Spectral Doppler Analysis

	Right			Left		
	Common	Internal	External	Common	Internal	External
Peak Systolic Velocity / End Diastolic Velocity (cm/s)	76/14	72/18	106/16	72/12	92/17	76/8
Peak systolic velocity ratio (ICA <sub>PSV</sub> /CCA <sub>PSV</sub> )		-			-	
St Mary's ratio (ICA <sub>PSV</sub> /CCA <sub>EDV</sub> )		-			-	

### Carotids

Approximate Percentage Stenosis (%)			
Right		Left	
CCA	ICA	CCA	ICA
<20	0-10	<20	0-10

Significant ICA stenoses are graded using NASCET criteria

**Plaque type:** soft / mixed / dense / calcified;  
irregular / smooth / ulcerated

Right ICA	Left ICA
intimal thickening	intimal thickening

### Vertebrals

Right	Left
62/7 cm/s	48/11 cm/s
Antegrade	Antegrade

### Summary:

Mobile scan on ward - poor access -> limited views.  
(covid contract, symptomatic cough), non responsive

\* No evidence of any significant carotid artery disease bilaterally

Clinical Vascular Scientist (CVS): Jodie Weston

AVS: Yes/No Date: 29/03/2022

VAS-DF-11 V1.2 Page 1 of 1 CVS second opinion: N/A

AVS: Yes/No Date:

# Department of Vascular Ultrasound



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NHS Trust

**Indications:** Infarct on CT  
Speech impairment + (R) ?pain ?joint issue ?weakness in leg  
Dominant hand (right) ~~left~~

## Duplex Ultrasound: Carotid and Vertebral Arteries

Consultant: Jenkins

Peak systolic velocity = PSV; End diastolic velocity = EDV; Common carotid artery = CCA; Internal Carotid Artery = ICA; External Carotid Artery = ECA

Spectral Doppler Analysis	Right			Left		
	Common	Internal	External	Common	Internal	External
Peak Systolic Velocity / End Diastolic Velocity (cm/s)	107/28	61/26	102/20	83/27	73/31	99/18
Peak systolic velocity ratio (ICA <sub>PSV</sub> /CCA <sub>PSV</sub> )		—			—	
St Mary's ratio (ICA <sub>PSV</sub> /CCA <sub>EDV</sub> )		—			—	

R

L

### Carotids

Approximate Percentage Stenosis (%)			
Right		Left	
CCA	ICA	CCA	ICA
<10	<10	<10	<10

Significant ICA stenoses are graded using NASCET criteria

ECA

Plaque type: soft / mixed / dense / calcified; irregular / smooth / ulcerated	
Right ICA	Left ICA
Intimal thickening	Intimal thickening

### Vertebrals

Right 57/18 cm/s	Left 59/19 cm/s
Antegrade	Antegrade

### Summary:

No evidence of any haemodynamically significant stenoses bilaterally

Subclavian Artery = 130 cm/s Triphasic

Clinical Vascular Scientist (CVS): Jodie Weston

AVS: Yes (No) Date: 02/03/2022