

Indications:

Consultant Bichnell

R Carotid Stent
L Occluded ICA

Dominant hand: right / left

Duplex Ultrasound: Carotid and Vertebral Arteries

Spectral Doppler Analysis	Right			Left		
	Common	Internal	External	Common	Internal	External
Peak Systolic Velocity / End Diastolic Velocity (cm/s)	109/29	67/19	122/24	86/14	—	117/20

R

Vertebrals

Right	58/19 cm/s	Left	75/29 cm/s
Antegrade		Antegrade	

Carotids

Approximate Percentage Stenosis						
Right			Left			
CCA	ICA	ECA	CCA	ICA	ECA	
<50	<50	40-45	<50		30-35	
50-69						
70-89						
90-99						
100						

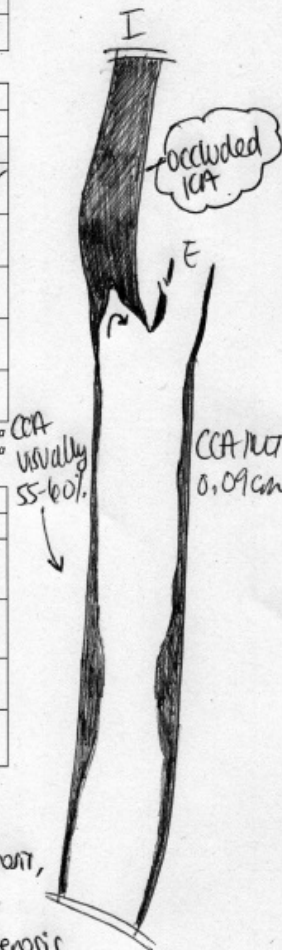
Percentage ICA stenoses graded based on haemodynamic criteria (NASCET). For <50% stenoses, all grading is approximated visually as a diameter reduction at the site of stenosis (ESCT grading).

Right			Left	
CCA	ICA		CCA	ICA
PL		Normal, intimal thickening, plaque	PL	
M		Plaque type: soft, mixed, dense, calcified	M	
S		Irregular / Smooth	S	
		Ulceration, dissection, tortuosity, dilation		

Comments:

- ① ICA Stent widely Patent
CCA no haemodynamically significant stenosis, visually 50-55%.
- ② ICA occluded
CCA no haemodynamically significant stenosis visually 55-60% stenosis

L



Department of Vascular Ultrasound **NHS**

Imperial College Healthcare

4 North, Charing Cross Hospital

NHS Trust

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

Indications:

R arm + leg weakness
Aphasia

Dominant hand: right / left

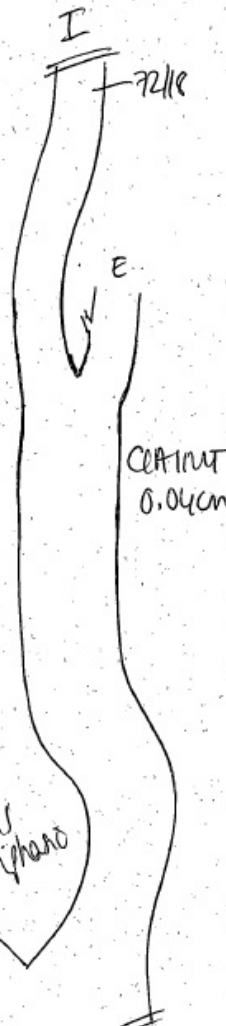
Consultant: KALUDINA

Duplex Ultrasound: Carotid and Vertebral Arteries

Spectral Doppler Analysis

	Right			Left		
	Common	Internal	External	Common	Internal	External
Peak Systolic Velocity / End Diastolic Velocity (cm/s)	58/10	50/12	71/0	60/13	47/11	62/0

R



Vertebrals

Right	46/10 cm/s	Left	43/13 cm/s
Antegrade		Antegrade	

Carotids

	Approximate Percentage Stenosis					
	Right			Left		
	CCA	ICA	ECA	CCA	ICA	ECA
<50	10-15	10-15	10-15	10-15	10-15	10-15
50-69						
70-89						
90-99						
100						

Percentage ICA stenoses graded based on haemodynamic criteria (NASCET). For <50% stenoses, all grading is approximated visually as a diameter reduction at the site of stenosis (ESCT grading).

Right			Left	
CCA	ICA		CCA	ICA
N/IT	N/IT	Normal, intimal thickening, plaque	N/IT	N/IT
		Plaque type: soft, mixed, dense, calcified		
		Irregular / Smooth		
		Ulceration, dissection, tortuosity, dilation		

Comments:

No evidence of significant carotid stenosis bilaterally

L



Proximal migration

Department of Vascular Ultrasound **NHS**

Imperial College Healthcare
4 North, Charing Cross Hospital NHS Trust
Ext 17360 / 17322 Email: imperial.cxhvascularstudies@nhs.net

Indications:

Consultant Kwan

Amateur Reflex R eye

Dominant hand: right / left

Duplex Ultrasound: Carotid and Vertebral Arteries

Spectral Doppler
Analysis

Peak Systolic Velocity / End
Diastolic Velocity (cm/s)

Right			Left		
Common	Internal	External	Common	Internal	External
71/22	61/22	75/16	80/29	69/26	69/19

R

I
65/17

E

Vertebrals

Right	cm/s	Left	cm/s
<u>41/13</u>		<u>41/17</u>	
<u>Antegrade</u>		<u>Antegrade</u>	

Carotids

Approximate Percentage Stenosis						
	Right			Left		
	CCA	ICA	ECA	CCA	ICA	ECA
<50	20-25	15-20	15-20	20-25	15-20	15-20
50-69						
70-89						
90-99						
100						

Percentage ICA stenoses graded based on haemodynamic criteria (NASCET). For <50% stenoses, all grading is approximated visually as a diameter reduction at the site of stenosis (ECST grading).

Right			Left	
CCA	ICA		CCA	ICA
<u>IT</u>	<u>IT</u>	Normal, intimal thickening, plaque	<u>IT</u>	<u>IT</u>
		Plaque type: soft mixed, dense, calcified		
		Irregular / Smooth		
		Ulceration, dissection, tortuosity, dilation		

Comments:

No evidence of significant carotid stenosis bilaterally

L

I
82/40

E

Clinical Vascular Scientist:

Chloral

AVS: Yes () No ()

Date: 29/10/24

Department of Vascular Ultrasound **NHS**

Imperial College Healthcare

4 North, Charing Cross Hospital NHS Trust

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

Indications:

Episode of word finding difficulty

Dominant hand: right / left

Consultant: Elmamoun

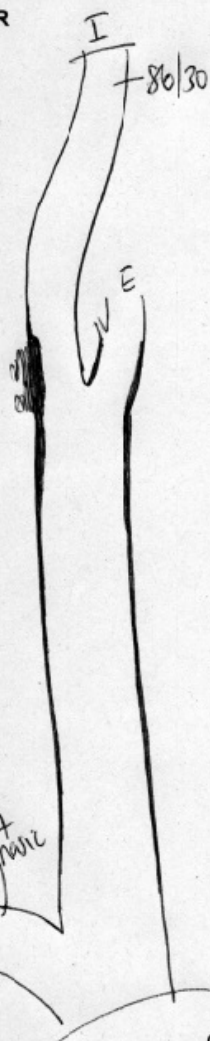
Duplex Ultrasound: Carotid and Vertebral Arteries

Spectral Doppler Analysis

Peak Systolic Velocity / End Diastolic Velocity (cm/s)

	Right			Left		
	Common	Internal	External	Common	Internal	External
Peak Systolic Velocity / End Diastolic Velocity (cm/s)	93/27	56/19	78/7	86/26	73/18	114/13

R



Vertebrals

Right	78/22 cm/s	Left	66/24 cm/s
Antegrade		Antegrade	

Carotids

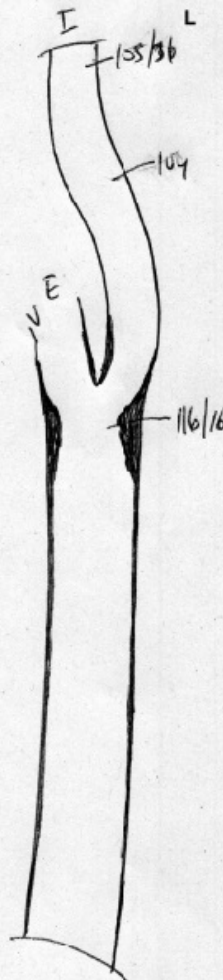
	Approximate Percentage Stenosis					
	Right			Left		
	CCA	ICA	ECA	CCA	ICA	ECA
<50	20-25	30-35	20-25	45-50	20-25	15-20
50-69						
70-89						
90-99						
100						

Percentage ICA stenoses graded based on haemodynamic criteria (NASCET). For <50% stenoses, all grading is approximated visually as a diameter reduction at the site of stenosis (ECST grading)

Right			Left	
CCA	ICA		CCA	ICA
17/11	11	Normal, intimal thickening, plaque	17/11	17/11
M	D/Ca	Plaque type: soft, mixed, dense, calcified	M	M
S	S	Irregular / Smooth	S/E	S
		Ulceration, dissection, tortuosity, dilation		

Comments:

No evidence of significant carotid stenosis bilaterally



Clinical Vascular Scientist: ...*Chiael*... AVS Yes / No Date: 3/11/21

Indications:

Consultant: **ELMA-MAN**

Word finding difficulty

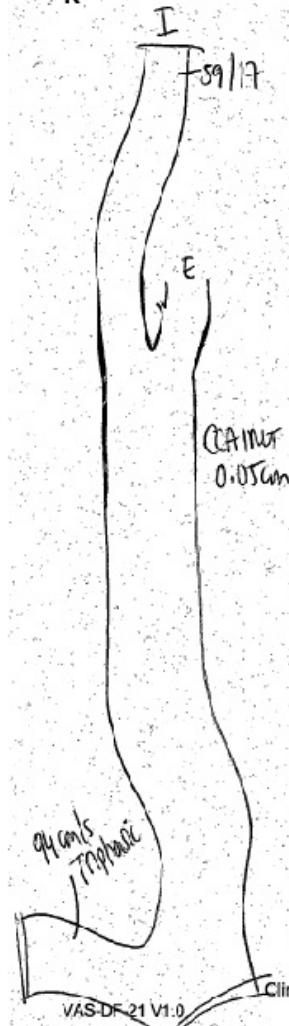
Dominant hand: **right** / left

Duplex Ultrasound: Carotid and Vertebral Arteries

Spectral Doppler Analysis

	Right			Left		
	Common	Internal	External	Common	Internal	External
Peak Systolic Velocity / End Diastolic Velocity (cm/s)	77/17	70/12	98/13	82/17	59/15	85/11

R



Vertebrals

	Right	cm/s	Left	cm/s
Antegrade	51/13		47/8	

Carotids

	Approximate Percentage Stenosis					
	Right			Left		
	CCA	ICA	ECA	CCA	ICA	ECA
<50	20-25	15-20	10-15	15-20	15-20	10-15
50-69						
70-89						
90-99						
100						

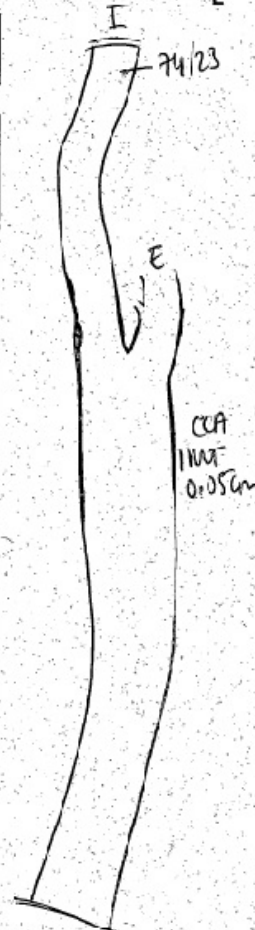
Percentage ICA stenoses graded based on haemodynamic criteria (NASCET). For <50% stenoses, all grading is approximated visually as a diameter reduction at the site of stenosis (BECT grading).

Right		Normal, intimal thickening, plaque	Left	
CCA	ICA		CCA	ICA
N/11	N/11		11	11/11
		Plaque type: soft, mixed, dense, calcified		11
		Irregular / Smooth		S
		Ulceration, dissection, tortuosity, dilation		

Comments:

No evidence of significant carotid stenosis bilaterally

L



Clinical Vascular Scientist: **Chlor**

AVS: **29/9/12** Date: **29/9/12**
Page 1 of 1

Department of Vascular Ultrasound **NHS**

Imperial College Healthcare
4 North, Charing Cross Hospital NHS Trust
Ext 17360 / 17322 Email: imperial.cxhvascularstudies@nhs.net

Indications:

R sided paraspina
R facial drop

Dominant hand: right / left

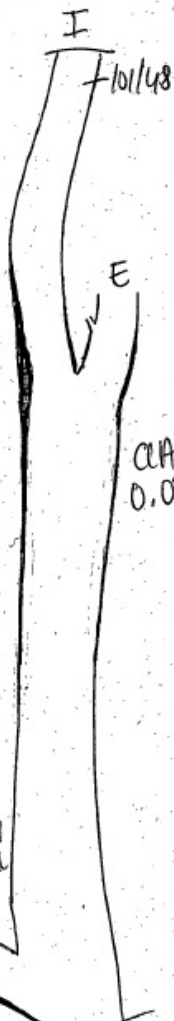
Consultant: KWM

Duplex Ultrasound: Carotid and Vertebral Arteries

Spectral Doppler Analysis

	Right			Left		
	Common	Internal	External	Common	Internal	External
Peak Systolic Velocity / End Diastolic Velocity (cm/s)	85/35	118/53	101/27	88/33	86/27	91/16

R



Vertebrals

Right	54/22 cm/s	Left	47/18 cm/s
Antegrade		Antegrade	

Carotids

	Approximate Percentage Stenosis					
	Right			Left		
	CCA	ICA	ECA	CCA	ICA	ECA
<50	20-25	30-35	10-15	25-30	10-15	10-15
50-69						
70-89						
90-99						
100						

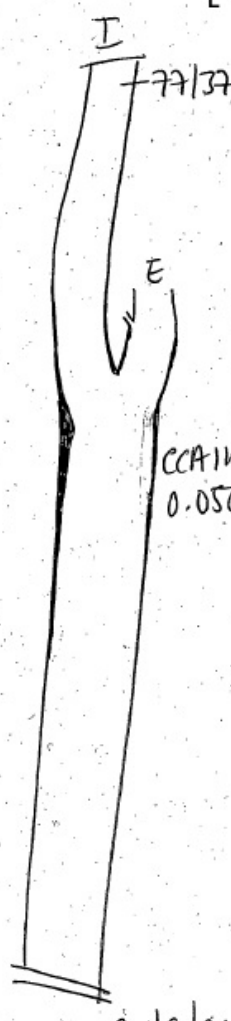
Percentage ICA stenoses graded based on haemodynamic criteria (NASCET). For <50% stenoses, all grading is approximated visually as a diameter reduction at the site of stenosis (ESCT grading).

Right		Normal, intimal thickening, plaque Plaque type: soft, mixed, dense, calcified Irregular / Smooth Ulceration, dissection, tortuosity, dilation	Left	
CCA	ICA		CCA	ICA
H/P	P		P/H	P
M			M	
S			S	

Comments:

No evidence of significant carotid stenosis bilaterally

L



Hypermorphic

Indications:

Consultant **KWAN**

Dysarthria + R hand loss of dexterity

Dominant hand (right) / left

Duplex Ultrasound: Carotid and Vertebral Arteries

Spectral Doppler Analysis	Right			Left		
	Common	Internal	External	Common	Internal	External
Peak Systolic Velocity / End Diastolic Velocity (cm/s)	74/10	53/10	80/5	77/16	62/15	73/3

R

Vertebrals

Right 38/7 cm/s	Left 56/11 cm/s
Antegrade	Antegrade

Carotids

	Approximate Percentage Stenosis					
	Right			Left		
	CCA	ICA	ECA	CCA	ICA	ECA
<50	20-25	35-40	15-20	25-30	15-20	15-20
50-69						
70-89						
90-99						
100						

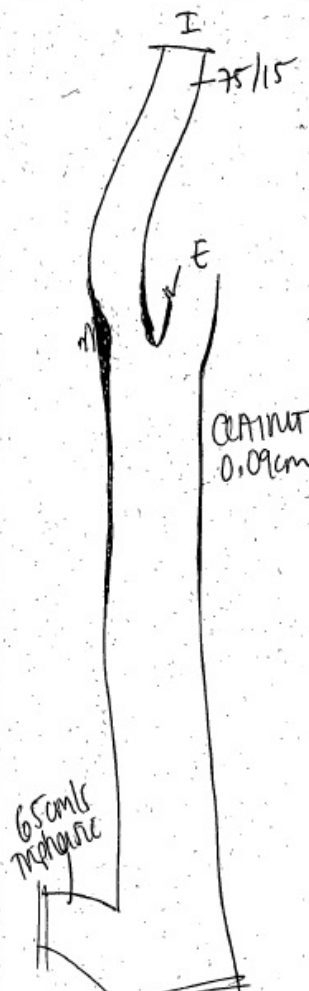
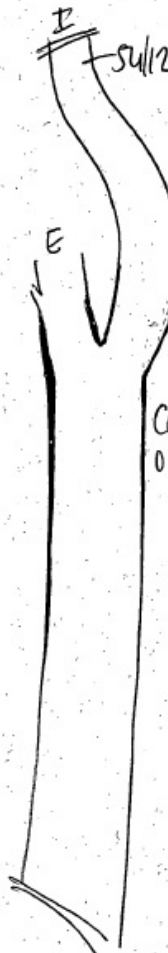
Percentage ICA stenoses graded based on haemodynamic criteria (NASCET). For <50% stenoses, all grading is approximated visually as a diameter reduction at the site of stenosis (ESCT grading).

Right			Left	
CCA	ICA		CCA	ICA
17/11	11	Normal, intimal thickening, plaque	17/11	11
M	M/D	Plaque type: soft, mixed, dense, calcified	M	
S	I/S	Irregular / Smooth	S	
		Ulceration, dissection, tortuosity, dilation		

Comments:

No evidence of significant carotid stenosis bilaterally

L



Department of Vascular Ultrasound **NHS**

Imperial College Healthcare

4 North, Charing Cross Hospital

NHS Trust

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

Indications:

Consultant *Kwan*

Impaired vision left eye

Dominant hand: *right* / left

Duplex Ultrasound: Carotid and Vertebral Arteries

Spectral Doppler Analysis

Peak Systolic Velocity / End Diastolic Velocity (cm/s)

Right			Left		
Common	Internal	External	Common	Internal	External
<i>118/24</i>	<i>99/18</i>	<i>130/16</i>	<i>116/26</i>	<i>102/33</i>	<i>137/25</i>

R

Vertebrals

Right <i>55/15</i> cm/s	Left <i>91/21</i> cm/s
<i>Antegrade</i>	<i>Antegrade</i>

Carotids

Approximate Percentage Stenosis					
Right			Left		
CCA	ICA	ECA	CCA	ICA	ECA
30-35	25-30	15-20	30-35	20-25	20-25

Percentage ICA stenoses graded based on hemodynamic criteria (NASCET). For <50% stenoses, all grading is approximated visually as a diameter reduction at the site of stenosis (ESCT grading).

Right			Left	
CCA	ICA		CCA	ICA
<i>11/11</i>	<i>P1</i>	Normal, intimal thickening, plaque	<i>11/11</i>	<i>M</i>
<i>11/10</i>	<i>M</i>	Plaque type: soft, mixed, dense, calcified	<i>N/D</i>	<i>N/D</i>
<i>S</i>	<i>S</i>	Irregular / Smooth		
		Ulceration, dissection, tortuosity, dilation		

Comments:

No evidence of significant carotid stenosis bilaterally

L

Aphoric 94

Clinical Vascular Scientist: *Al Moel*

AVS: Yes / No

Date: *29/10/21*

Indications:

Consultant Davies

Post L CEA, no new symptoms

Dominant hand: right / left

Duplex Ultrasound: Carotid and Vertebral Arteries

Spectral Doppler Analysis

	Right			Left		
	Common	Internal	External	Common	Internal	External
Peak Systolic Velocity / End Diastolic Velocity (cm/s)	159/23	121/18	168/21	164/31	124/32	204/16

R

Vertebrals

Right	48/12 cm/s	Left	52/21 cm/s
Antegrade		Antegrade	

Carotids

	Right			Left		
	CCA	ICA	ECA	CCA	ICA	ECA
<50	<50	20-25	20-25	45-50	<50	<50
50-69					100% block veins	
70-89						
90-99						
100						

Percentage ICA stenoses graded based on haemodynamic criteria (NASCET). For <50% stenoses, all grading is approximated visually as a diameter reduction at the site of stenosis (ESCT grading).

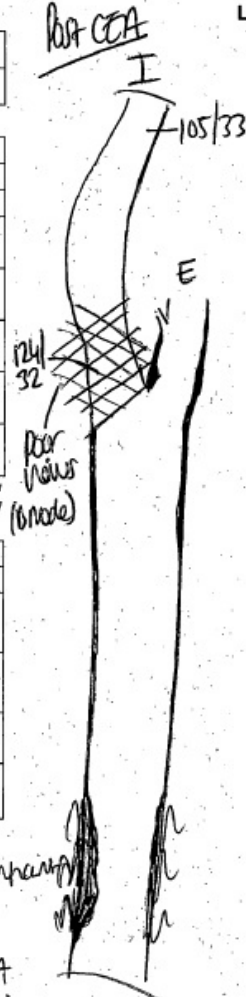
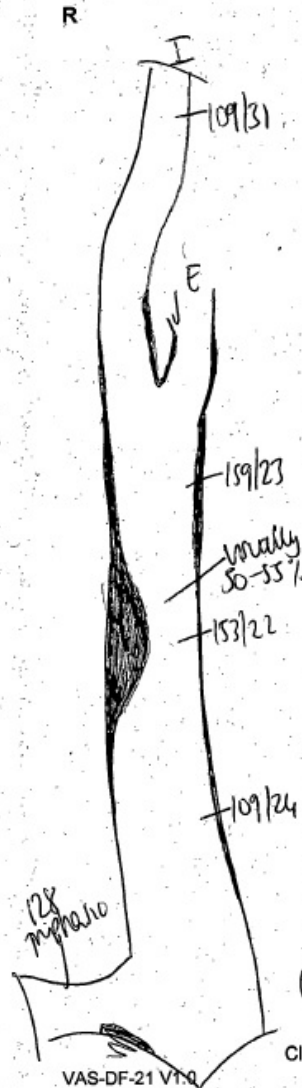
Right			Left	
CCA	ICA		CCA	ICA
PL	PL	Normal, intimal thickening, plaque	PI	No veins
M	M	Plaque type: soft, mixed, dense, calcified	Car	
S	S	Irregular / Smooth		
		Ulceration, dissection, tortuosity, dilation		

Comments:

② No evidence of haemodynamically significant stenosis. CEA visually 50-55% stenosis

① Post CEA. Poor branch veins of prox ICA but no significant haemodynamic stenosis

Clinical Vascular Scientist: Chival AVS: Yes / No Date: 5/11/21



Irvine Vascular Studies **NHS**

Imperial College Healthcare

Ground Floor, Mary Stanford Wing, St Mary's Hospital NHS Trust

Ext 23739 / 23374 Email: imperial.irvinevascularstudies@nhs.net

Indications: L ICA Stenosis Surveillance

No symptoms reported

Consultant: Bicknell

Dominant hand: (right) / left

Duplex Ultrasound: Carotid and Vertebral Arteries

Spectral Doppler

Analysis

Peak Systolic Velocity / End

Diastolic Velocity (cm/s)

Right			Left		
Common	Internal	External	Common	Internal	External
82/18	75/22	102/13	77/16	274/67	80/11

R

Vertebrals

Right	cm/s	Left	cm/s
49/12		40/11	
Antegrade		Antegrade	

Carotids

Approximate Percentage Stenosis					
Right			Left		
CCA	ICA	ECA	CCA	ICA	ECA
<50	35-40	25-30	<50	30-35	<50
50-69				80-89	
70-89					
90-99					
100					

Percentage ICA stenoses graded based on haemodynamic criteria (NASCET). For <50% stenoses, all grading is approximated visually as a diameter reduction at the site of stenosis (ECST grading).

Right			Left	
CCA	ICA		CCA	ICA
W/P	W/P	Normal, intimal thickening, plaque	W/P	P
M	M	Plaque type: soft, mixed, dense, calcified	M	W
S/I	S	Irregular / Smooth	I	I
		Ulceration, dissection, tortuosity, dilation		

Comments:

- ① No evidence of significant stenosis
- ② ICA haemodynamic 80-89% stenosis, visually 60-65% stenosis

Clinical Vascular Scientist

Chen

22/10/14

L



Irvine Vascular Studies

Imperial College Healthcare

Ground Floor, Mary Stanford Wing, St Mary's Hospital NHS Trust
Ext 23719 / 23374 Email: imperial.irvinevascular.studies@nhs.net

Indications:

Consultant McNeilly

Polytrauma. ? carotid dissection

Dominant hand: right / left

Duplex Ultrasound: Carotid and Vertebral Arteries

Spectral Doppler Analysis

	Right			Left		
	Common	Internal	External	Common	Internal	External
Peak Systolic Velocity / End Diastolic Velocity (cm/s)	131/22	no veins	no veins	108/24	64/18	98/20

R

Vertebrals

Right 94/26 cm/s	Left 74/16 cm/s
Antegrade	Antegrade

Carotids

	Approximate Percentage Stenosis					
	Right			Left		
	CCA	ICA	ECA	CCA	ICA	ECA
<50	10-15	NO veins		10-15	20-25	5-10
50-69						
70-89						
90-99						
100						

Percentage ICA stenoses graded based on haemodynamic criteria (NASCET). For <50% stenoses, all grading is approximate visually as a diameter reduction at the site of stenosis (ESCT grading).

Right			Left	
CCA	ICA		CCA	ICA
N	no veins	Normal, intimal thickening, plaque	N	?dissection
		Plaque type: soft, mixed, dense, calcified		?thrombus-adhered to wall
		Irregular / Smooth		
		Ulceration, dissection, tortuosity, dilation		

Comments:

- ② Patent CCA where seen. No values of the bifurcation or ICA/ECA due to extensive dressings
- ③ Small ?dissection flap noted in the proximal ICA. Did not appear mobile. Does not appear to be impacting flow. Small amount of ?thrombus adhered to wall at dissection flap site

Clinical Vascular Scientist: Chlor AVS: Yes / (No) Date: 11/10/21

NO access/veins
-dressings

COA INT
0.03cm

198cm
Thyroid

I
L
74/28

E
?dissection
flap
-10A
mobile
0.6cm
thrombus
COA INT
0.03cm

Department of Vascular Ultrasound **NHS**

Imperial College Healthcare

4 North, Charing Cross Hospital

NHS Trust

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

Indications:

Consultant *Bentley*

L Sided weakness

Dominant hand: *right* / left

Duplex Ultrasound: Carotid and Vertebral Arteries

Spectral Doppler Analysis

	Right			Left		
	Common	Internal	External	Common	Internal	External
Peak Systolic Velocity / End Diastolic Velocity (cm/s)	120/34	71/30	80/22	101/32	81/32	75/19

R

Vertebrals

Right	35/13 cm/s	Left	50/21 cm/s
<i>Antegrade</i>		<i>Antegrade</i>	

Carotids

	Approximate Percentage Stenosis					
	Right			Left		
	CCA	ICA	ECA	CCA	ICA	ECA
<50	15-20	10-15	10-15	10-15	15-20	15-20
50-69						
70-89						
90-99						
100						

Percentage ICA stenoses graded based on haemodynamic criteria (NASCET). For <50% stenoses, all grading is approximated visually as a diameter reduction at the site of stenosis (ESCT grading).

Right		Normal, intimal thickening, plaque	Left	
CCA	ICA		CCA	ICA
<i>N/H</i>	<i>N/H</i>	Plaque type: soft, mixed, dense, calcified	<i>N/H</i>	<i>N/IT</i>
		Irregular / Smooth		
		Ulceration, dissection, tortuosity, dilation		

Comments:

No evidence of significant carotid stenosis bilaterally

L

I 68/29

E

CCA int 0.04cm

Triphasic 132cm/s

CCA int 0.05cm

Irvine Vascular Studies **NHS**

Imperial College Healthcare

Ground Floor, Mary Stanford Wing, St Mary's Hospital NHS Trust

Ext 23739 / 23374 Email: imperial.irvinevascular.studies@nhs.net

Indications:

Dysphasia in March

Consultant *Tennant*

Dominant hand: right / left

Duplex Ultrasound: Carotid and Vertebral Arteries

Spectral Doppler

Analysis

	Right			Left		
	Common	Internal	External	Common	Internal	External
Peak Systolic Velocity / End Diastolic Velocity (cm/s)	78/24	57/19	75/21	88/30	57/16	74/19

R

Vertebrals

Right 50/16 cm/s	Left 31/12 cm/s
<i>Antegrade</i>	<i>Antegrade</i>

Carotids

	Approximate Percentage Stenosis					
	Right			Left		
	CCA	ICA	ECA	CCA	ICA	ECA
<50	15-20	10-15	10-15	15-20	10-15	10-15
50-69						
70-89						
90-99						
100						

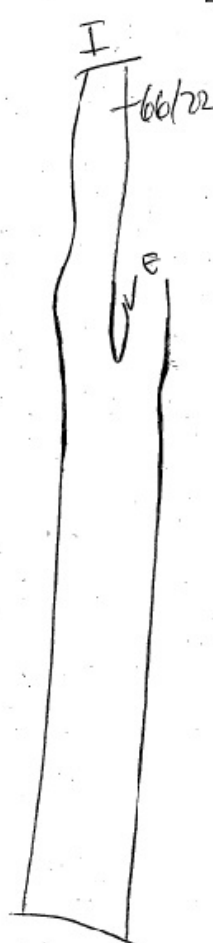
Percentage ICA stenoses graded based on hemodynamic criteria (NASCET). For <50% stenoses, all grading is approximated visually as a diameter reduction at the site of stenosis (ESCT grading).

Right			Left	
CCA	ICA		CCA	ICA
IT	IT	Normal, intimal thickening, plaque	IT	IT
		Plaque type: soft, mixed, dense, calcified		
		Irregular / Smooth		
		Ulceration, dissection, tortuosity, dilation		

Comments:

No evidence of significant carotid stenosis bilaterally

L



Normal

Normal

Irvine Vascular Studies

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

Imperial College Healthcare
NHS Trust



Indications:

Visual disturbance. Bilateral stenosis on CTA

Dominant hand: right / left

Duplex Ultrasound: Carotid and Vertebral Arteries

Consultant: Lewis

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)	274/77	387/90	311/52	420/102	64/17	476/113
Peak systolic velocity ratio (ICA _{PSV} /CCA _{PSV})		4.9			-	
St Mary's ratio (ICA _{PSV} /CCA _{EDV})		24			-	

R

Carotids

Approximate Percentage Stenosis (%)

Right		Left	
CCA	ICA	CCA	ICA
50-74	80-89	>75	<50

Significant ICA stenoses are graded using NASCET criteria

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

Right ICA	Left ICA/CCA
Dense/calcified Smooth	Dense/calcified Smooth

Vertebrals

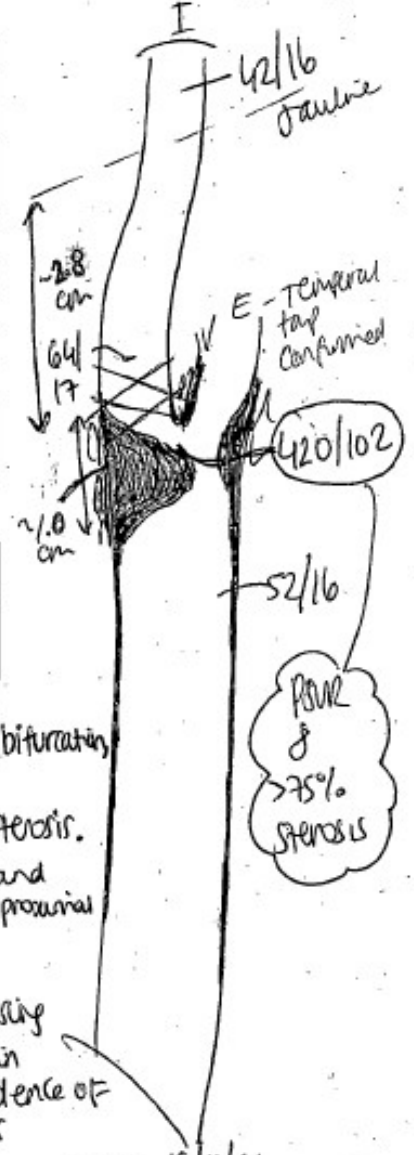
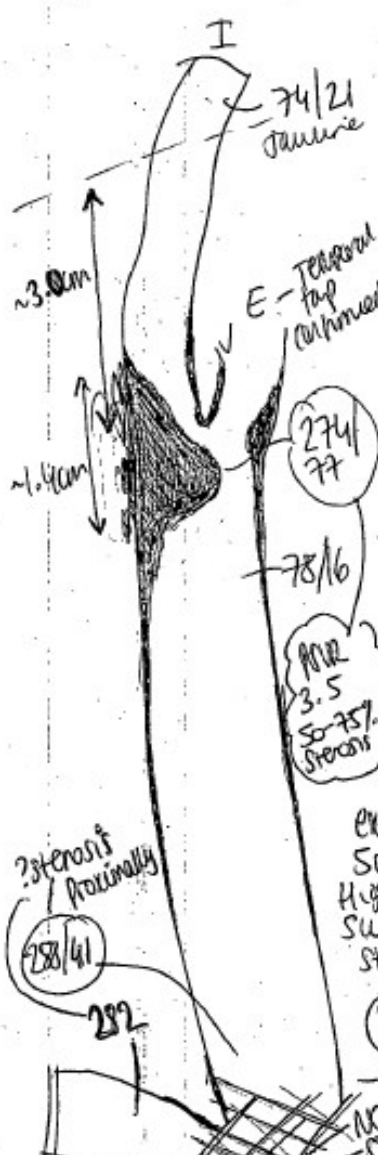
Right	Left
cm/s	cm/s
No flow detected	Antegrade

Summary:

① Large plaque in the very distal CCA/bifurcation extending into the ICA/ECA origins. Distal CCA 50-74% stenosis. Proximal ICA 80-89% stenosis. High velocities measured in the proximal CCA and subclavian artery but no waves at the origins? proximal stenosis

② Large plaque in the very distal CCA causing a >75% stenosis. Turbulent flow in the proximal ICA but no evidence of significant stenosis

L



Clinical Vascular Scientist (CVS):

Alloe R.

AVS: Yes / No

Date: 18/11/21

Stannolly (CVS)

AVS: Yes / No

Date: 18/11/21

Indications:

known carotid disease

Dominant hand: right / left

Duplex Ultrasound: Carotid and Vertebral Arteries

Consultant: DAVIES

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)	85/25	278/78	132/21	106/16	—	148/30
Peak systolic velocity ratio (ICA _{PSV} /CCA _{PSV})		3.3			—	
St Mary's ratio (ICA _{PSV} /CCA _{EDV})		11			—	

R

L

Carotids

Approximate Percentage Stenosis (%)			
Right		Left	
CCA	ICA	CCA	ICA
40-45 where seen	60-69 see comments	40-45	occluded

Significant ICA stenoses are graded using NASCET criteria

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

Right ICA	Left ICA
Calcified m	occluded ICA CCA - calcified

Vertebrals

Right	Left
— cm/s	79/28 cm/s
No flow detected	Antegrade

Summary:

- ② Heavy calcification causing dense shadowing over the very distal CCA / bifurcation / proximal branches.
- No significant CCA stenosis where seen. Cannot rule out very distal CCA stenosis.
 - ICA velocities indicative of a 60-69% stenosis, however, ICA origin not seen, therefore true PSV may be higher + degree of stenosis greater

④ No significant CCA stenosis. ICA occluded

Clinical Vascular Scientist (CVS):

Alvise De

AVS: Yes (No)

Date: 25/11/21

Department of Vascular Ultrasound

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

Imperial College Healthcare
NHS Trust



Indications:

R sided weakness

Dominant hand: right / left

Duplex Ultrasound: Carotid and Vertebral Arteries

Consultant: ELMA MOUN

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)	118/9	103/13	85/0	173/16	122/21	113/12
Peak systolic velocity ratio (ICA _{PSV} /CCA _{PSV})		X			X	
St Mary's ratio (ICA _{PSV} /CCA _{EDV})		X			X	

R

L

Carotids

Approximate Percentage Stenosis (%)			
Right		Left	
CCA	ICA	CCA	ICA
35-40	35-40	<50	40-45

Significant ICA stenoses are graded using NASCET criteria

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

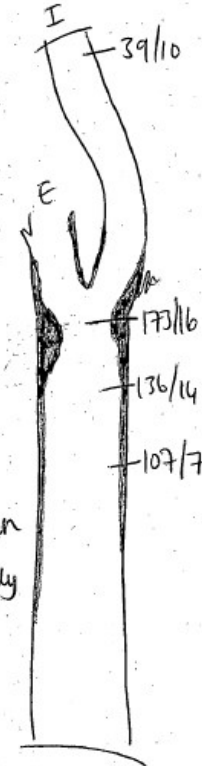
Right ICA	Left ICA
Mixed / Dense / Calcified	Mixed / Dense / Irregular

Vertebrals

Right	Left
63/17 cm/s	46/11 cm/s
Antegrade	Antegrade

Summary:

- Cardiac arrhythmia noted throughout the scan
- Bilaterally, no evidence of haemodynamically significant carotid stenosis



Clinical Vascular Scientist (CVS):

Chua

AVS: Yes / No

Date:

17/11/21

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

CVS second opinion:

AVS: Yes / No

Date:

Consultant Bicknell

Indications:
Extensive neurological history
R ICA stenosis on CTA

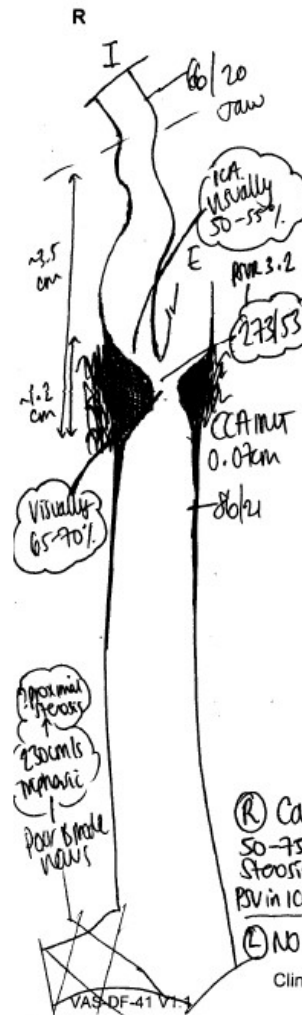
Dominant hand: right / left

Duplex Ultrasound: Carotid and Vertebral Arteries

Spectral Doppler Analysis

Peak Systolic Velocity / End Diastolic Velocity (cm/s)

Right			Left		
Common	Internal	External	Common	Internal	External
273/53	241/43	210/27	122/23	108/22	114/16



Vertebrals

Right	cm/s	Left	cm/s
33/11		46/14	
Antegrade		Antegrade	

Carotids

Approximate Percentage Stenosis					
Right			Left		
CCA	ICA	ECA	CCA	ICA	ECA
<50		>50	30-35	75-80	20-25
50-69	50-75%				
70-89	75-79%				
90-99					
100					

Percentage ICA stenoses graded based on haemodynamic criteria (NASCET). For <50% stenoses, all grading is approximated visually as a diameter reduction at the site of stenosis (ESCT grading).

Right			Left	
CCA	ICA		CCA	ICA
P1	P1	Normal, intimal thickening, plaque	M1	M1
D1a	D1a	Plaque type: soft, mixed, dense, calcified	M	M
I	S	Irregular / Smooth	S	S
		Ulceration, dissection, tortuosity, dilation		

Comments:

① Calcified plaque at the bifurcation level. 50-75% distal CCA/bifurcation haemodynamic stenosis. Visually 65-70% stenosis. PSV in ICA origin indicative of 70-79% haemodynamic stenosis.

② No evidence of significant stenosis. Visually 50-55% ICA



Irvine Vascular Studies

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



Indications:

Previous TIA's. Rhand numbness

Dominant hand: right / left

Duplex Ultrasound: Carotid and Vertebral Arteries

Consultant: Gibbs

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)	72/21	66/21	82/16	93/33	64/23	66/10
Peak systolic velocity ratio (ICA _{PSV} /CCA _{PSV})		✓			✓	
St Mary's ratio (ICA _{PSV} /CCA _{EDV})		✓			✓	

R

L

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
poor B mode view	poor B mode view

Vertebrals

Right	Left
48/19 cm/s	48/22 cm/s
Antegrade	Antegrade

Summary:

Bilaterally - poor B mode views of the bifurcations and proximal branches due to high bifurcations and vessel depth.
- cannot comment on the presence of plaque.
- No raised velocities measured bilaterally
- No evidence of haemodynamically significant stenosis

7/10/21

Clinical Vascular Scientist (CVS): C. M. H. Date: 24/10/21

VAS-DF-41 V1.2 Page 1 of 1 CVS second opinion: Date: AVS: Yes / No

Department of Vascular Ultrasound **NHS**

Imperial College Healthcare
4 North, Charing Cross Hospital
Ext 17360 / 17322 Email: imperial.cxhvascularstudies@nhs.net NHS Trust

Indications:

Unilateral weakness, speech disturbance
Seen on CTA

Dominant hand: right / left

Consultant: George

Duplex Ultrasound: Carotid and Vertebral Arteries

Spectral Doppler Analysis

Peak Systolic Velocity / End Diastolic Velocity (cm/s)

Right			Left		
Common	Internal	External	Common	Internal	External
62/14	200/72	82/12	75/19	67/22	72/15

R

Vertebrals

Right	cm/s	Left	cm/s
45/15		62/17	
Antegrade		Antegrade	

Carotids

Approximate Percentage Stenosis						
Right			Left			
CCA	ICA	ECA	CCA	ICA	ECA	
<50	30-35	15-20	25-30	25-30	15-20	
50-69	60-69					
70-89						
90-99						
100						

Percentage ICA stenoses graded based on hemodynamic criteria (NASCET). For <50% stenoses, all grading is approximated visually as a diameter reduction at the site of stenosis (ESCT grading).

Right			Left	
CCA	ICA		CCA	ICA
PL	PL	Normal, intimal thickening, plaque	MM	MM
D/CS	D/CS	Plaque type: soft, mixed, dense, calcified	M	M
S	S	Irregular / Smooth	S	S
		Ulceration, dissection, tortuosity, dilation		

Comments:

① ICA hemodynamic 60-69% stenosis.
Visually 70-75% stenosis

② No evidence of significant stenosis

Clinical Vascular Scientist: Chloel
AVS: Yes / No Date: 11/1/11
Page 1 of 1



Indications: L ICA stenosis surveillance
no symptoms reported

Consultant *Bicknell*

Dominant hand: right / left

Duplex Ultrasound: Carotid and Vertebral Arteries

Spectral Doppler Analysis	Right			Left		
	Common	Internal	External	Common	Internal	External
Peak Systolic Velocity / End Diastolic Velocity (cm/s)	82/18	75/22	102/13	77/16	272/67	80/11

R

Vertebrals

Right	cm/s	Left	cm/s
49/12		40/11	
Antegrade		Antegrade	

Carotids

	Approximate Percentage Stenosis					
	Right			Left		
	CCA	ICA	ECA	CCA	ICA	ECA
<50	35-40	25-30	≤50	30-35	↓	≤50
50-69					80-89	
70-89						
90-99						
100						

Percentage ICA stenoses graded based on haemodynamic criteria (NASCET). For <50% stenoses, all grading is approximated visually as a diameter reduction at the site of stenosis (ESCT grading).

Right			Left	
CCA	ICA		CCA	ICA
W/P	W/P	Normal, intimal thickening, plaque	W/P	P
M/K	M	Plaque type: soft, mixed, dense, calcified	M	B
S/I	S	Irregular / Smooth	I	I
		Ulceration, dissection, tortuosity, dilation		

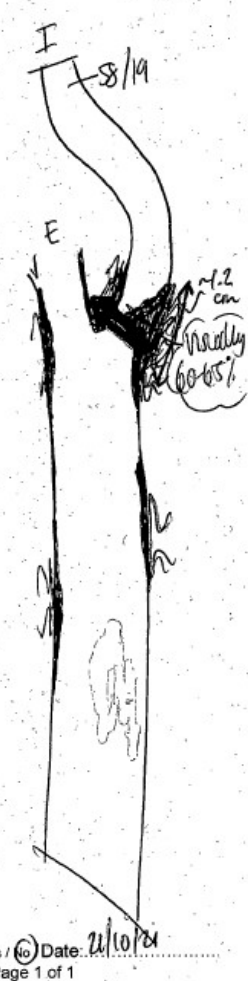
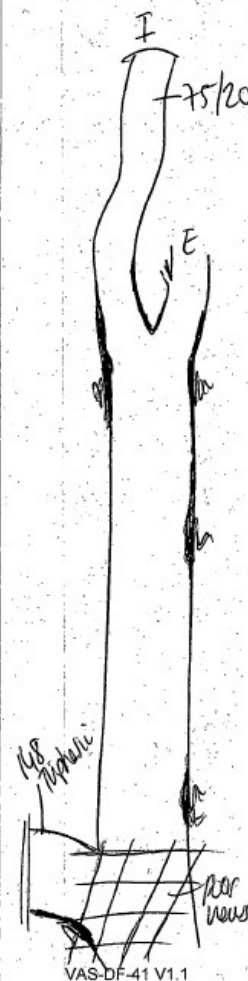
Comments:

- ① No evidence of significant stenosis
- ② ICA haemodynamic 80-89% stenosis, visually 60-65% stenosis

Clinical Vascular Scientist: *Chen*

AVS: Yes / No Date: 21/10/21
Page 1 of 1

L



Irvine Vascular Studies

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



Indications:

Post bilateral CEA. No symptoms reported

Dominant hand: right / left

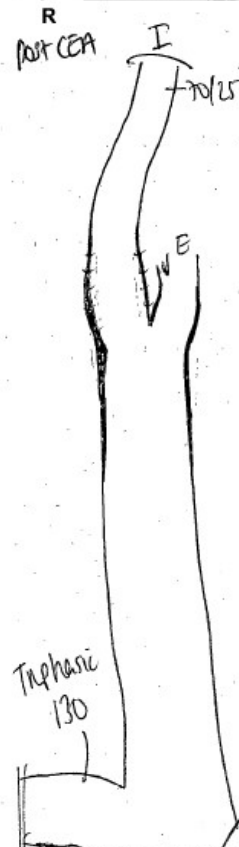
Duplex Ultrasound: Carotid and Vertebral Arteries

Consultant: Shaltroub

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)	102/28	70/18	126/25	82/23	64/22	87/16
Peak systolic velocity ratio (ICA _{PSV} /CCA _{PSV})		/			/	
St Mary's ratio (ICA _{PSV} /CCA _{EDV})		/			/	



Carotids

Approximate Percentage Stenosis (%)

Right		Left	
CCA	ICA	CCA	ICA
20-25	20-25	20-25	20-25

Significant ICA stenoses are graded using NASCET criteria

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

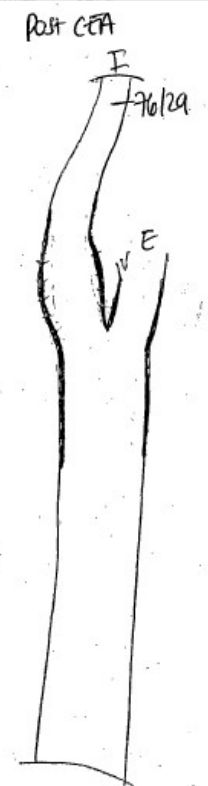
Right ICA	Left ICA
Post CEA Mild neo-intimal hyperplasia	Post CEA Mild neo-intimal hyperplasia

Vertebrals

Right	Left
39/11 cm/s	56/17 cm/s
Antegrade	Antegrade

Summary:

Bilaterally - no evidence of significant carotid stenosis



Clinical Vascular Scientist (CVS):

Shaltroub

AVS: Yes / No Date: 24/11/21

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CVS second opinion:

AVS: Yes / No Date:

Indications:

Consultant: RIGA

Carotid Stenosis Surveillance

Dominant hand: right / left

Duplex Ultrasound: Carotid and Vertebral Arteries

Spectral Doppler Analysis

	Right			Left		
	Common	Internal	External	Common	Internal	External
Peak Systolic Velocity / End Diastolic Velocity (cm/s)	68/13	474/137	247/23	85/21	101/31	128/17

R



Vertebrals

Right	46/14 cm/s	Left	62/24 cm/s
	Antegrade		Antegrade

Carotids

	Approximate Percentage Stenosis					
	Right			Left		
	CCA	ICA	ECA	CCA	ICA	ECA
<50	40-65		>85	35-40	30-35	30-35
50-69						
70-89						
90-99		>90%				
100						

Percentage ICA stenoses graded based on haemodynamic criteria (NASCET). For <50% stenoses, all grading is approximated visually as a diameter reduction at the site of stenosis (ESCT grading).

Right			Left	
CCA	ICA		CCA	ICA
PL	PL	Normal, intimal thickening, plaque	R	PL
M/D	M/D	Plaque type: soft, mixed, dense, calcified	M/D	M/D
I	I	Irregular / Smooth	S	S
		Ulceration, dissection, tortuosity, dilation		

Comments:

- ① ICA >90% haemodynamic stenosis. Poor Brachiocephalic to grade usually
- ② No evidence of significant stenosis

Clinical Vascular Scientist: Chuan AVS: Yes / No Date: 10/11/21
Page 1 of 1

Indications:

Consultant Ward

Bilateral leg weakness

Dominant hand: right / left

Duplex Ultrasound: Carotid and Vertebral Arteries

Spectral Doppler Analysis

Peak Systolic Velocity / End Diastolic Velocity (cm/s)

Right			Left		
Common	Internal	External	Common	Internal	External
104/18	83/8	81/15	87/19	50/19	79/8

R

Vertebrals

Right	106/22 cm/s	Left	75/18 cm/s
Antegrade		Antegrade	

Carotids

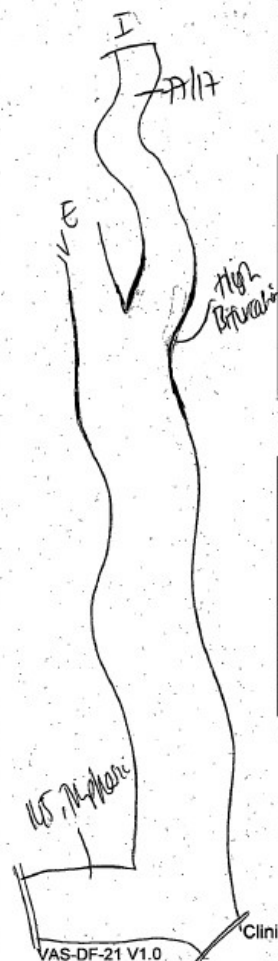
Approximate Percentage Stenosis						
Right			Left			
CCA	ICA	ECA	CCA	ICA	ECA	
<50	10-15	10-15	10-15	10-15	10-15	
50-69						
70-89						
90-99						
100						

Percentage ICA stenoses graded based on haemodynamic criteria (NASCET). For <50% stenoses, all grading is approximated visually as a diameter reduction at the site of stenosis (ESCT grading).

Right			Left	
CCA	ICA		CCA	ICA
N/11	N/11	Normal, intimal thickening, plaque	N/11	N/11
		Plaque type: soft, mixed, dense, calcified		
		Irregular / Smooth		
		Ulceration, dissection, tortuosity, dilation		

Comments:

No evidence of significant carotid stenosis bilaterally



Indications:

Previous CEA (left)
 No new symptoms reported

Dominant hand: right / left

Duplex Ultrasound: Carotid and Vertebral Arteries

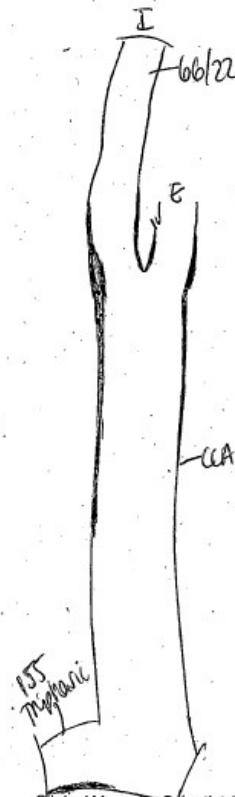
Consultant: RGA

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)	73/23	94/35	108/18	98/34	81/22	154/33
Peak systolic velocity ratio (ICA _{PSV} /CCA _{PSV})		/			/	
St Mary's ratio (ICA _{PSV} /CCA _{EDV})		/			/	

R



Carotids

Approximate Percentage Stenosis (%)			
Right		Left	
CCA	ICA	CCA	ICA
20-29	30-39	20-29	20-29

Significant ICA stenoses are graded using NASCET criteria

Plaque type: soft / mixed / dense / calcified; irregular / smooth / ulcerated	
Right ICA	Left ICA
Mixed, smooth	Post CEA Hyperplasia/mixed, smooth

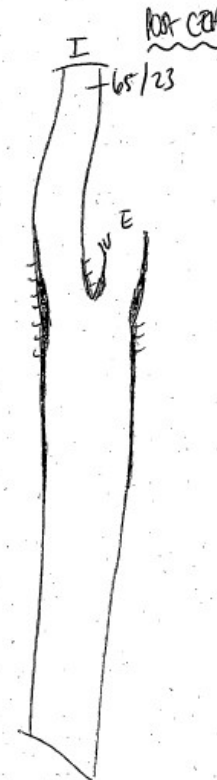
Vertebrals

Right	Left
48/14 cm/s	55/14 cm/s
Antegrade	Antegrade

Summary:

No evidence of significant carotid stenosis bilaterally

L



Clinical Vascular Scientist (CVS): Chloé Rai AVS: Yes / No Date: 15/12/21

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

Indications:

Dysphagia in March

Consultant *Jennings*

Dominant hand: ☒ right / left

Duplex Ultrasound: Carotid and Vertebral Arteries

Spectral Doppler Analysis

	Right			Left		
	Common	Internal	External	Common	Internal	External
Peak Systolic Velocity / End Diastolic Velocity (cm/s)	78/24	57/19	75/21	88/30	57/16	74/19

R



VAS-DF-41 V4.1

Vertebrals

Right	50/16 cm/s	Left	31/12 cm/s
<i>Antegrade</i>		<i>Antegrade</i>	

Carotids

	Approximate Percentage Stenosis					
	Right			Left		
	CCA	ICA	ECA	CCA	ICA	ECA
<50	15-20	10-15	10-15	15-20	10-15	10-15
50-69						
70-89						
90-99						
100						

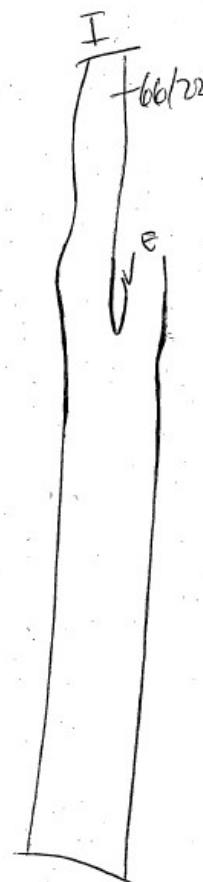
Percentage ICA stenoses graded based on haemodynamic criteria (NASCET). For <50% stenoses, all grading is approximated visually as a diameter reduction at the site of stenosis (ESCT grading).

Right			Left	
CCA	ICA		CCA	ICA
IT	IT	Normal, intimal thickening, plaque	IT	IT
		Plaque type: soft, mixed, dense, calcified		
		Irregular / Smooth		
		Ulceration, dissection, tortuosity, dilation		

Comments:

No evidence of significant carotid stenosis bilaterally

L



Clinical Vascular Scientist: *Chad*

AVS: Yes / No Date: 21/10/24