25 scans for this modality (from the last 3 months)

Bilateral Carotid Duplex (ex. f/up scan)
Follow-up carotid
TCD

1. Carotid

REPORT E-75445280 VERIFIED Attended-09-Nov-2022 WALCT/WALCT-09-Nov-2022

Clinical History :
Clinical details: Preop redo AVR
Specific question to be answered: Is there any evidence of stenosis?

US Doppler carotid artery Both VERIFIED Attended-09-Nov-2022 WALCT/WALCT-09-Nov-2022

Carotid duplex

RIGHT

				Waveform		Plaque Morphology		% Stenosis
CCA	PSV	0.57	m/s	NO	Normal	H	Heterogeneous	10
	EDV	0	m/s					
Bulb						H	Heterogeneous	10-19
ICA	PSV	0.65	m/s	NO	Normal	H	Heterogeneous	10
	EDV	0.08	m/s					
ECA				NO	Normal	H	Heterogeneous	20
Vert				S	See comments			

LEFT

				Waveform		Plaque Morphology		% Stenosis
CCA	PSV	0.92	m/s	NO	Normal	H	Heterogeneous	10-19
	EDV	0	m/s					
Bulb						H	Heterogeneous	10-19
ICA	PSV	0.49	m/s	NO	Normal	H	Heterogeneous	10
	EDV	0.09	m/s					
ECA				NO	Normal	H	Heterogeneous	10
Vert				AN	Antegrade flow			

Comments:

Comments:

BILATERALLY:
Carotid arteries are patent with normal waveforms and velocities. No evidence of stenosis.

The right vertebral artery is small in calibre with negligible flow, ?chronic thrombus in keeping with previous posterior stroke.
The left vertebral artery is patent with antegrade flow.

2. Carotid

REPORT E-75445585 VERIFIED Attended-09-Nov-2022 WALCT/WALCT-09-Nov-2022

Clinical details: for CTS work up for MVR
Specific question to be answered: ?stensois

US Doppler carotid artery Both VERIFIED Attended-09-Nov-2022 WALCT/WALCT-09-Nov-2022

Carotid duplex

RIGHT

				Waveform		Plaque Morphology		% Stenosis
CCA	PSV	0.62	m/s	NO	Normal	IT	Intimal thickening	<10
	EDV	0.07	m/s					
Bulb						H	Heterogeneous	10
ICA	PSV	0.73	m/s	NO	Normal	-	----------	-
	EDV	0.22	m/s					
ECA				NO	Normal	-	----------	-
Vert				AN	Antegrade flow			

LEFT

				Waveform		Plaque Morphology		% Stenosis
CCA	PSV	1.10	m/s	NO	Normal	H	Heterogeneous	10-19
	EDV	0.21	m/s					
Bulb						H	Heterogeneous	10-19
ICA	PSV	1.02	m/s	NO	Normal	-	----------	0
	EDV	0.38	m/s					
ECA				NO	Normal	-	----------	0
Vert				AN	Antegrade flow			

Comments:

Comments:
BILATERALLY:
Carotid arteries patent with normal waveforms and velocities. No evidence of stenosis.
Vertebral arteries patent with normal antegrade flow.

3. Follow-up Carotid

REPORT E-75083332 VERIFIED Attended-16-Nov-2022 WALCT/WALCT-16-Nov-2022

Clinical History :
Clinical details: right CEA in April2022 for Sympt 90% stenosis. Had 10-19% stenosis on the left.
Specific question to be answered: standard post op scan please (6 months) thanks

US Doppler carotid artery Both VERIFIED Attended-16-Nov-2022 WALCT/WALCT-16-Nov-2022

Carotid duplex

RIGHT

				Waveform		Plaque Morphology		% Stenosis
CCA	PSV	0.73	m/s	NO	Normal	-	----------	
	EDV	0.24	m/s					
Bulb						H	Heterogeneous	<10
ICA	PSV	0.81	m/s	NO	Normal	H	Heterogeneous	<10
	EDV	0.20	m/s					
ECA				I	Increased velocities	H	Heterogeneous	50
Vert				AN	Antegrade flow			

LEFT

				Waveform		Plaque Morphology		% Stenosis
CCA	PSV	0.67	m/s	NO	Normal	-	----------	0
	EDV	0.20	m/s					
Bulb						H	Heterogeneous	10-19
ICA	PSV	0.57	m/s	NO	Normal	-	----------	0
	EDV	0.18	m/s					
ECA				NO	Normal	-	----------	0
Vert				AN	Antegrade flow			

Comments:

RIGHT;
Carotid arteries patent with normal waveforms.
CEA-site is widely patent.
Raised velocities seen in ECA proximally with moderate heterogenous plaque.
Vertebral artery patent with normal antegrade flow.

LEFT;
Carotid arteries patent with normal waveforms and velocities.
Vertebral artery patent with normal antegrade flow.

4. Carotid

REPORT E-75425044 VERIFIED Attended-16-Nov-2022 WALCT/WALCT-16-Nov-2022

Clinical History :
Clinical details: work up for coronary bypass Pt not local is it poss to liaise with chest unit to have on same day. Thanks
Specific question to be answered: Carotid stenosis

US Doppler carotid artery Both VERIFIED Attended-16-Nov-2022 WALCT/WALCT-16-Nov-2022

Carotid duplex

RIGHT				Waveform		Plaque Morphology		% Stenosis
CCA	PSV	0.62	m/s	NO	Normal	-	----------	0
	EDV	0.17	m/s					
Bulb						H	Heterogeneous	10-19
ICA	PSV	0.56	m/s	NO	Normal	-	----------	0
	EDV	0.22	m/s					
ECA				NO	Normal	-	----------	0
Vert				AN	Antegrade flow			

LEFT				Waveform		Plaque Morphology		% Stenosis
CCA	PSV	0.61	m/s	NO	Normal	H	Heterogeneous	10
	EDV	0.18	m/s					
Bulb						H	Heterogeneous	20-29
ICA	PSV	0.52	m/s	NO	Normal	H	Heterogeneous	30-39
	EDV	0.23	m/s					
ECA				NO	Normal	-	----------	0
Vert				AN	Antegrade flow			

Comments:

Comments:

BILATERALLY:
Carotid arteries patent with normal waveforms and velocities. Moderate plaque within the proximal left ICA (30-39% stenosis).
Vertebral arteries patent with normal antegrade flow.

5. TCD

REPORT E-75387375 VERIFIED Attended-15-Nov-2022 WALCT/WALCT-15-Nov-2022

Clinical details: hBsc
Specific question to be answered: tcd PLEASE

US Paediatric TCDI (STOP) VERIFIED Attended-15-Nov-2022 WALCT/WALCT-15-Nov-2022

Paed TCD STOP screeening

STOP: STROKE RISK SCREENING

	RIGHT		LEFT	
MCA (TAMX) :	83	cm/s	80	cm/s
Bifur (TAMX) :	73	cm/s	51	cm/s
Dist ICA (TAMX)	62	cm/s	53	cm/s
ACA (TAMX):	55	cm/s	47	cm/s
PCA (TAMX):	47	cm/s	55	cm/s
ICA (PSV):	90	cm/s	97	cm/s
ICA Waveform:	NO	Normal	NO	Normal
Vert Waveform:	NO	Normal	NO	Normal

STOP Stroke Risk Category: N NORMAL

Inadequate study:	Bilaterally, MCA, dist ICA, and bifur must be ID'ed
Normal:	TAMX of <170cm/s (all segments)
Conditional:	>=170cm/s and <200cm/s in MCA / Distal ICA or >170cm/s in ACA or PCA.
Abnormal:	>=200cm/s(in one or more of the following segments: MCA, Bifurcation or Distal ICA).

Comments:

Comments:

Normal STOP category.
Tortuous extracranial ICAs, no stenosis seen.

6. Carotid

REPORT E-75454824 VERIFIED Attended-15-Nov-2022 WALCT/WALCT-15-Nov-2022

Clinical History :
Clinical details: Liver transplant assessment- calcium burden on CT BK ArLD and HCC
Specific question to be answered: ?stenosis

US Doppler carotid artery Both VERIFIED Attended-15-Nov-2022 WALCT/WALCT-15-Nov-2022

Carotid duplex

RIGHT

				Waveform		Plaque Morphology		% Stenosis
CCA	PSV	0.76	m/s	NO	Normal	H	Heterogeneous	10
	EDV	0.14	m/s					
Bulb						H	Heterogeneous	10-19
ICA	PSV	1.32	m/s	S	See comments	H	Heterogeneous	10-19
	EDV	0.36	m/s					
ECA				NO	Normal	-	----------	0
Vert				AN	Antegrade flow			

LEFT

				Waveform		Plaque Morphology		% Stenosis
CCA	PSV	0.95	m/s	NO	Normal	-	----------	0
	EDV	0.19	m/s					
Bulb						-	----------	0
ICA	PSV	0.97	m/s	NO	Normal	-	----------	0
	EDV	0.23	m/s					
ECA				NO	Normal	-	----------	0
Vert				AN	Antegrade flow			

Comments:

Comments:

BILATERALLY:
Carotid arteries patent with normal waveforms and velocities and no significant stenosis.
Slightly raised velocities in the right proximal ICA due to a minor kink in the artery.
Vertebral arteries patent with normal antegrade flow.

7. Carotid

REPORT E-75454809 VERIFIED Attended-15-Nov-2022 WALCT/WALCT-15-Nov-2022

Clinical History :
Clinical details: Liver transplant assessment- calcium burden on CT BK PSC
Specific question to be answered: ?stenosis

US Doppler carotid artery Both VERIFIED Attended-15-Nov-2022 WALCT/WALCT-15-Nov-2022

Carotid duplex

RIGHT

				Waveform		Plaque Morphology		% Stenosis
CCA	PSV	0.70	m/s	NO	Normal	-	----------	0
	EDV	0.13	m/s					
Bulb						H	Heterogeneous	10
ICA	PSV	0.76	m/s	NO	Normal	-	----------	0
	EDV	0.21	m/s					
ECA				NO	Normal	-	----------	0
Vert				AN	Antegrade flow			

LEFT

				Waveform		Plaque Morphology		% Stenosis
CCA	PSV	1.06	m/s	NO	Normal	-	----------	0
	EDV	0.19	m/s					
Bulb						H	Heterogeneous	10-19
ICA	PSV	0.69	m/s	NO	Normal	H	Heterogeneous	10
	EDV	0.19	m/s					
ECA				NO	Normal	-	----------	0
Vert				AN	Antegrade flow			

Comments:

Comments:

BILATERALLY:
Carotid arteries patent with normal waveforms and velocities and no significant stenosis.
Vertebral arteries patent with normal antegrade flow.

8. Carotid

REPORT E-75453747 VERIFIED Attended-14-Nov-2022 WALCT/WALCT-14-Nov-2022

Clinical History :
Clinical details: 50M T2DM, raised BMI and pancreatic insufficiency. For carotid dopplers and ABPI to r/o occlusive disease and contraindications to transplant
Specific question to be answered: ?vaso-occlusive disease

US Doppler carotid artery Both VERIFIED Attended-14-Nov-2022 WALCT/WALCT-14-Nov-2022

Carotid duplex

RIGHT

				Waveform		Plaque Morphology		% Stenosis
CCA	PSV	0.87	m/s	NO	Normal	-	----------	0
	EDV	0.11	m/s					
Bulb						H	Heterogeneous	10
ICA	PSV	1.04	m/s	NO	Normal	-	----------	0
	EDV	0.25	m/s					
ECA				NO	Normal	-	----------	0
Vert				AN	Antegrade flow			

LEFT

				Waveform		Plaque Morphology		% Stenosis
CCA	PSV	1.46	m/s	NO	Normal	-	----------	0
	EDV	0.17	m/s					
Bulb						-	----------	0
ICA	PSV	0.95	m/s	NO	Normal	-	----------	0
	EDV	0.32	m/s					
ECA				NO	Normal	-	----------	0
Vert				AN	Antegrade flow			

Comments:

Comments:

BILATERALLY:
Carotid arteries are patent with normal waveforms and velocities. No evidence of stenosis.
Vertebral arteries patent with normal antegrade flow.

9. Carotid

REPORT E-75425688 VERIFIED Attended-08-Nov-2022 WALCT/WALCT-08-Nov-2022

Clinical History :
Clinical details: work up for urgent cardiac surgery> Pt has lung function on 08/11/2022 please can this test be on the same day.
Specific question to be answered: Carotid stenosis

US Doppler carotid artery Both VERIFIED Attended-08-Nov-2022 WALCT/WALCT-08-Nov-2022

Carotid duplex

RIGHT

				Waveform		Plaque Morphology		% Stenosis
CCA	PSV	0.67	m/s	NO	Normal	IT	Intimal thickening	<10
	EDV	0.14	m/s					
Bulb						H	Heterogeneous	10-19
ICA	PSV	0.67	m/s	NO	Normal	-	----------	0
	EDV	0.17	m/s					
ECA				NO	Normal	-	----------	0
Vert				AN	Antegrade flow			

LEFT

				Waveform		Plaque Morphology		% Stenosis
CCA	PSV	0.74	m/s	NO	Normal	IT	Intimal thickening	<10
	EDV	0.15	m/s					
Bulb						H	Heterogeneous	10-19
ICA	PSV	0.60	m/s	NO	Normal	-	----------	30-39
	EDV	0.15	m/s					
ECA				NO	Normal	-	----------	0
Vert				AN	Antegrade flow			

Comments:

Comments:

BILATERALLY:
Carotid arteries patent with normal waveforms and velocities seen. Minor heterogenous plaque in the left ICA origin (30-39% stenosis).
Vertebral arteries patent with normal antegrade flow.

10. Carotid

REPORT E-75035077 VERIFIED Attended-08-Nov-2022 WALCT/WALCT-08-Nov-2022

Clinical History :
Clinical details: pre AFTs
Specific question to be answered: OK to do AFTs?

US Doppler carotid artery Both VERIFIED Attended-08-Nov-2022 WALCT/WALCT-08-Nov-2022

Carotid duplex

RIGHT

				Waveform		Plaque Morphology		% Stenosis
CCA	PSV	0.87	m/s	NO	Normal	-	----------	0
	EDV	0.30	m/s					
Bulb						-	----------	0
ICA	PSV	1.01	m/s	NO	Normal	-	----------	0
	EDV	0.47	m/s					
ECA				NO	Normal	-	----------	00
Vert				NO	Normal			

LEFT

				Waveform		Plaque Morphology		% Stenosis
CCA	PSV	1.10	m/s	NO	Normal	-	----------	0
	EDV	0.30	m/s					
Bulb						-	----------	0
ICA	PSV	1.05	m/s	NO	Normal	-	----------	0
	EDV	0.43	m/s					
ECA				NO	Normal	-	----------	0
Vert				NO	Normal			

Comments:

Comments:

BILATERALLY:
Carotid arteries patent with normal waveforms and velocities seen. No evidence of stenosis.
Vertebral arteries patent with normal antegrade flow.

11. Carotid

REPORT E-75428626 VERIFIED Attended-07-Nov-2022 WALCT/WALCT-07-Nov-2022

Clinical History :
Clinical details: ischaemic chronic vessel changes noted on MRI - Discussed with stroke team - carotid and vertibral USS doppler as part of stroke work up
Specific question to be answered: ? cause of stroke

US Doppler carotid artery Both VERIFIED Attended-07-Nov-2022 WALCT/WALCT-07-Nov-2022

Carotid duplex

RIGHT				Waveform		Plaque Morphology		% Stenosis
CCA	PSV	0.96	m/s	NO	Normal	-	----------	0
	EDV	0.22	m/s					
Bulb						-	----------	0
ICA	PSV	0.52	m/s	NO	Normal	-	----------	0
	EDV	0.15	m/s					
ECA				NO	Normal	-	----------	0
Vert				AN	Antegrade flow			

LEFT				Waveform		Plaque Morphology		% Stenosis
CCA	PSV	0.89	m/s	NO	Normal	-	----------	0
	EDV	0.29	m/s					
Bulb						-	----------	0
ICA	PSV	0.65	m/s	NO	Normal	-	----------	0
	EDV	0.22	m/s					
ECA				NO	Normal	-	----------	0
Vert				AN	Antegrade flow			

Comments:

Comments:

BILATERALLY:
Carotid arteries patent with normal waveforms and velocities. No evidence of stenosis.
Vertebral arteries patent with normal antegrade flow.

12. Carotid

REPORT E-75426448 VERIFIED Attended-03-Nov-2022 WALCT/WALCT-03-Nov-2022

Clinical History :
Clinical details: 61M - work up for CABG
Specific question to be answered: Is there any evidence of carotid artery stenosis?

US Doppler carotid artery Both VERIFIED Attended-03-Nov-2022 WALCT/WALCT-03-Nov-2022

Carotid duplex

RIGHT				Waveform		Plaque Morphology		% Stenosis
CCA	PSV	0.86	m/s	NO	Normal	-	----------	0
	EDV	0.23	m/s					
Bulb						H	Heterogeneous	20-29
ICA	PSV	0.92	m/s	NO	Normal	H	Heterogeneous	20-29
	EDV	0.35	m/s					
ECA				NO	Normal	H	Heterogeneous	20
Vert				AN	Antegrade flow			

LEFT				Waveform		Plaque Morphology		% Stenosis
CCA	PSV	0.95	m/s	NO	Normal	H	Heterogeneous	10-19
	EDV	0.30	m/s					
Bulb						H	Heterogeneous	20-29
ICA	PSV	0.74	m/s	NO	Normal	H	Heterogeneous	10
	EDV	0.29	m/s					
ECA				NO	Normal	-	----------	0
Vert				AN	Antegrade flow			

Comments:

Comments:

BILATERALLY:
Carotid arteries patent with normal waveforms and velocities. Minor plaque within the carotid bulbs and ICA origins (max 20-29% stenosis).
Vertebral arteries patent with normal antegrade flow.

13. Carotid

REPORT E-75429592 VERIFIED Attended-03-Nov-2022 WALCT/WALCT-03-Nov-2022

Clinical History :
Clinical details: Presented with Right LL weakness, and R UL tremor and weakness, CT showed cortical low attenuation and swelling within the left paracentral lobule, precentral gyrus and superior frontal gyrus, consistent with recent infarcts
Specific question to be answered: Stroke pt - Evaluation of carotid arteries ? stenosis / cause for stroke

US Doppler carotid artery Both VERIFIED Attended-03-Nov-2022 WALCT/WALCT-03-Nov-2022

Carotid duplex

RIGHT

				Waveform		Plaque Morphology		% Stenosis
CCA	PSV	0.53	m/s	NO	Normal	IT	Intimal thickening	<10
	EDV	0.17	m/s					
Bulb						H	Heterogeneous	10-19
ICA	PSV	0.61	m/s	NO	Normal	H	Heterogeneous	10-19
	EDV	0.21	m/s					
ECA				NO	Normal	-	----------	0
Vert				AN	Antegrade flow			

LEFT

				Waveform		Plaque Morphology		% Stenosis
CCA	PSV	0.81	m/s	NO	Normal	IT	Intimal thickening	<10
	EDV	0.24	m/s					
Bulb						-	----------	0
ICA	PSV	0.40	m/s	NO	Normal	-	----------	0
	EDV	0.14	m/s					
ECA				NO	Normal	-	----------	0
Vert				AN	Antegrade flow			

Comments:

Comments:

BILATERALLY:
Carotid arteries patent with normal waveforms and velocities. No evidence of significant stenosis.
Vertebral arteries patent with normal antegrade flow.

14. Carotid

REPORT E-75380072 VERIFIED Attended-31-Oct-2022 WALCT/WALCT-31-Oct-2022

Clinical History :
Clinical details: work up for mitral valve surgery
Specific question to be answered: Carotid stenosis

US Doppler carotid artery Both VERIFIED Attended-31-Oct-2022 WALCT/WALCT-31-Oct-2022

Carotid duplex

RIGHT

				Waveform		Plaque Morphology		% Stenosis
CCA	PSV	0.94	m/s	NO	Normal	-	----------	0
	EDV	0.14	m/s					
Bulb						-	----------	0
ICA	PSV	0.92	m/s	NO	Normal	-	----------	0
	EDV	0.24	m/s					
ECA				NO	Normal	-	----------	0
Vert				AN	Antegrade flow			

LEFT

				Waveform		Plaque Morphology		% Stenosis
CCA	PSV	0.92	m/s	NO	Normal	-	----------	0
	EDV	0.21	m/s					
Bulb						H	Heterogeneous	<10
ICA	PSV	0.74	m/s	NO	Normal	-	----------	0
	EDV	0.21	m/s					
ECA				NO	Normal	-	----------	0
Vert				AN	Antegrade flow			

Comments:

BILATERALLY:
Carotid arteries patent with normal waveforms and velocities. No evidence of significant stenosis.
Vertebral arteries patent with normal antegrade flow.

Comments:
Patient described feeling like her carotid arteries were very prominent. Upon inspection there appears a hypoechoic region between the left ICA and ECA at the bifurcation. This is not vascularised and does not appear to be a carotid body tumor. Alternative imaging would be required for diagnosis as this is outside of the scope of vascular.

15. Carotid

REPORT E-75077629 VERIFIED Attended-31-Oct-2022 WALCT/WALCT-31-Oct-2022

Clinical History :
Clinical details: Previous type a repair. Known dissection inot brachiocephalic and left carotid. CT shows worsening stenosis of right CCA
Specific question to be answered: ?carotic stenosis in common/internal

US Doppler carotid artery Both VERIFIED Attended-31-Oct-2022 WALCT/WALCT-31-Oct-2022

Carotid duplex

RIGHT				Waveform		Plaque Morphology		% Stenosis
CCA	PSV	1.92	m/s	S	See comments	S	See comments	50-75
	EDV	0.32	m/s					
Bulb						S	See comments	
ICA	PSV	1.14	m/s	S	See comments	S	See comments	
	EDV	0.32	m/s					
ECA				S	See comments	S	See comments	
Vert				S	See comments			

LEFT				Waveform		Plaque Morphology		% Stenosis
CCA	PSV	1.38	m/s	S	See comments	S	See comments	
	EDV	0.17	m/s					
Bulb						S	See comments	
ICA	PSV	1.38	m/s	S	See comments	S	See comments	
	EDV	0.23	m/s					
ECA				S	See comments	S	See comments	
Vert				S	See comments			

Comments:

Comments:

RIGHT:
The brachiocephalic, subclavian and carotid arteries are patent.
Known dissection in the brachiocephalic and subclavian arteries with raised velocities seen (PSV 2m/s and 3.3m/s respectively).
Known dissection in the proximal CCA, causing 2.5x velocity increase. This is suggestive of 50-75% stenosis. Flow is turbulent in the distal CCA.
Known dissection in the bulb extending into the origin of ICA and ECA. This does not appear to be causing any significant stenoses.
Turbulent flow in the proximal ECA.
The vertebral artery is patent with waveforms suggestive of partial steal.

LEFT:
Known dissection today seen throughout the length of the CCA (previously reported proximal to mid). Does not appear to extend into the ECA or ICA.
This is causing systemically raised velocities but no evidence of focal significant stenosis.
Turbulent flow in the proximal ICA.
Vertebral artery is patent with normal antegrade flow.

16. Carotid

REPORT E-75351627 VERIFIED Attended-27-Oct-2022 WALCT/WALCT-27-Oct-2022

Clinical details: severe ischaemic disease and subacute stroke
Specific question to be answered: embolic source

US Doppler carotid artery Both VERIFIED Attended-27-Oct-2022 WALCT/WALCT-27-Oct-2022

Carotid duplex

RIGHT

				Waveform		Plaque Morphology		% Stenosis
CCA	PSV	0.77	m/s	NO	Normal	H	Heterogeneous	<10
	EDV	0.14	m/s					
Bulb						H	Heterogeneous	10
ICA	PSV	0.36	m/s	NO	Normal	H	Heterogeneous	10
	EDV	0.10	m/s					
ECA				NO	Normal	-	----------	0
Vert				AN	Antegrade flow			

LEFT

				Waveform		Plaque Morphology		% Stenosis
CCA	PSV	0.69	m/s	NO	Normal	IT	Intimal thickening	<10
	EDV	0.19	m/s					
Bulb						H	Heterogeneous	10
ICA	PSV	0.45	m/s	NO	Normal	H	Heterogeneous	10
	EDV	0.19	m/s					
ECA				NO	Normal	H	Heterogeneous	10
Vert				AN	Antegrade flow			

Comments:

Comments:

BILATERALLY:
Carotid arteries patent with normal waveforms and velocities.
Left ICA is kinked proximally.
Vertebral arteries patent with normal antegrade flow.

17. Carotid

REPORT E-75107597 VERIFIED Attended-19-Oct-2022 WALCT/WALCT-19-Oct-2022

Clinical History :
Clinical details: ? FH
Specific question to be answered: Please masure CIMT additionally

US Doppler carotid artery Both VERIFIED Attended-19-Oct-2022 WALCT/WALCT-19-Oct-2022

Carotid duplex

RIGHT

				Waveform		Plaque Morphology		% Stenosis
CCA	PSV	1.08	m/s	NO	Normal	-	----------	0
	EDV	0.26	m/s					
Bulb						-	----------	10-19
ICA	PSV	1.00	m/s	NO	Normal	-	----------	0
	EDV	0.34	m/s					
ECA				NO	Normal	-	----------	0
Vert				AN	Antegrade flow			

LEFT

				Waveform		Plaque Morphology		% Stenosis
CCA	PSV	1.27	m/s	NO	Normal	-	----------	0
	EDV	0.41	m/s					
Bulb						-	----------	10-19
ICA	PSV	1.23	m/s	NO	Normal	-	----------	0
	EDV	0.45	m/s					
ECA				NO	Normal	-	----------	0
Vert				AN	Antegrade flow			

Comments:

Comments:

BILATERALLY:
Carotid arteries patent with normal waveforms and velocities. No evidence of stenosis.
Vertebral arteries patent with normal antegrade flow.
RCIMT 0.6mm
LCIMT 0.7mm

18. Carotid

REPORT E-75387314 VERIFIED Attended-14-Oct-2022 WALCT/WALCT-14-Oct-2022

Clinical History :
Clinical details: Pre-op CABG - CAD
Specific question to be answered: Dopplers ?carotid stenosis

US Doppler carotid artery Both VERIFIED Attended-14-Oct-2022 WALCT/WALCT-14-Oct-2022

Carotid duplex

RIGHT

				Waveform		Plaque Morphology		% Stenosis
CCA	PSV	0.94	m/s	NO	Normal	-	----------	0
	EDV	0.14	m/s					
Bulb						H	Heterogeneous	10-19
ICA	PSV	0.62	m/s	NO	Normal	H	Heterogeneous	10-19
	EDV	0.17	m/s					
ECA				NO	Normal	-	----------	0
Vert				AN	Antegrade flow			

LEFT

				Waveform		Plaque Morphology		% Stenosis
CCA	PSV	1.19	m/s	NO	Normal	H	Heterogeneous	<10
	EDV	0.19	m/s					
Bulb						H	Heterogeneous	10-19
ICA	PSV	0.79	m/s	NO	Normal	H	Heterogeneous	20-29
	EDV	0.20	m/s					
ECA				NO	Normal	H	Heterogeneous	10
Vert				AN	Antegrade flow			

Comments:

Comments:
BILATERALLY:
Carotid arteries patent with normal waveforms and velocities.
Vertebral arteries patent with normal antegrade flow.

19. Carotid

REPORT E-74879482 VERIFIED Attended-14-Oct-2022 WALCT/WALCT-14-Oct-2022

Clinical History :
Clinical details: Carotid dopplers prior to AFT
Specific question to be answered: carotid stensois

US Doppler carotid artery Both VERIFIED Attended-14-Oct-2022 WALCT/WALCT-14-Oct-2022

Carotid duplex

RIGHT

				Waveform		Plaque Morphology		% Stenosis
CCA	PSV	1.00	m/s	NO	Normal	-	----------	0
	EDV	0.26	m/s					
Bulb						-	----------	0
ICA	PSV	0.58	m/s	NO	Normal	-	----------	0
	EDV	0.16	m/s					
ECA				NO	Normal	-	----------	0
Vert				AN	Antegrade flow			

LEFT

				Waveform		Plaque Morphology		% Stenosis
CCA	PSV	1.10	m/s	NO	Normal	-	----------	0
	EDV	0.40	m/s					
Bulb						-	----------	0
ICA	PSV	0.87	m/s	NO	Normal	-	----------	0
	EDV	0.13	m/s					
ECA				NO	Normal	-	----------	0
Vert				AN	Antegrade flow			

Comments:

Comments:
BILATERALLY:
Carotid arteries patent with normal waveforms and velocities.
Vertebral arteries patent with normal antegrade flow.

20. Carotid

REPORT E-75464881 VERIFIED Attended-18-Nov-2022 WALCT+ANTOJ/WALCT-18-Nov-2022

Clinical History :
Clinical details: CTA shows ?carotid t - for further rerview with doppler please
Specific question to be answered: stenosis

US Doppler carotid artery Both VERIFIED Attended-18-Nov-2022 WALCT+ANTOJ/WALCT-18-Nov-2022

Carotid duplex

RIGHT				Waveform		Plaque Morphology		% Stenosis
CCA	PSV	0.58	m/s	NO	Normal	-	----------	0
	EDV	0.16	m/s					
Bulb						H	Heterogeneous	10-19
ICA	PSV	0.49	m/s	NO	Normal	H	Heterogeneous	20-29
	EDV	0.18	m/s					
ECA				NO	Normal	H	Heterogeneous	20
Vert				AN	Antegrade flow			

LEFT				Waveform		Plaque Morphology		% Stenosis
CCA	PSV	0.75	m/s	NO	Normal	-	----------	0
	EDV	0.21	m/s					
Bulb						H	Heterogeneous	<10
ICA	PSV	0.66	m/s	NO	Normal	-	----------	0
	EDV	0.27	m/s					
ECA				NO	Normal	-	----------	0
Vert				AN	Antegrade flow			

Comments:

Comments:

LEFT:
The carotid arteries are patent with normal waveforms and velocities.
The extracranial ICA is patent throughout; (note is taken of the CT findings of the intracranial ICA).
There is a vascularised collection between the origins of the ICA and the ECA, measuring ~2.5x1.8mm (image 25). This is consistent with ?Carotid body tumor.
Vertebral artery patent with low velocity antegrade flow.

RIGHT:
Carotid arteries patent with normal waveforms and velocities.
Vertebral artery patent with low velocity antegrade flow.

21. Carotid

REPORT E-75464723 VERIFIED Attended-19-Nov-2022 WALCT/WALCT-19-Nov-2022

Clinical History :
Clinical details: acute onset vertigo ?TIA. ?lacunar. ?carotid artery disease
Specific question to be answered: ?stroke

US Doppler carotid artery Both VERIFIED Attended-19-Nov-2022 WALCT/WALCT-19-Nov-2022

Carotid duplex

RIGHT

				Waveform		Plaque Morphology		% Stenosis
CCA	PSV	0.60	m/s	NO	Normal	H	Heterogeneous	20-29
	EDV	0.14	m/s					
Bulb						H	Heterogeneous	30-39
ICA	PSV	0.85	m/s	NO	Normal	H	Heterogeneous	30-39
	EDV	0.26	m/s					
ECA				NO	Normal	H	Heterogeneous	10
Vert				AN	Antegrade flow			

LEFT

				Waveform		Plaque Morphology		% Stenosis
CCA	PSV	0.78	m/s	NO	Normal	H	Heterogeneous	20-29
	EDV	0.17	m/s					
Bulb						H	Heterogeneous	20-29
ICA	PSV	0.71	m/s	NO	Normal	H	Heterogeneous	20-29
	EDV	0.26	m/s					
ECA				NO	Normal	-	----------	0
Vert				AN	Antegrade flow			

Comments:

Comments:

BILATERALLY:
Carotid arteries patent with normal waveforms and velocities. Moderate heterogenous plaque in the carotid bulbs and ICA origins (max. 30-39% stenosis).
Vertebral arteries patent with normal antegrade flow.

22. Carotid

REPORT E-75464863 VERIFIED Attended-21-Nov-2022 WALCT/WALCT-21-Nov-2022

Clinical History :
Clinical details: Asymmetrical diabetic retinopathy
Specific question to be answered: ? R Carotid A. Insuffeciency

US Doppler carotid artery Both VERIFIED Attended-21-Nov-2022 WALCT/WALCT-21-Nov-2022

Carotid duplex

RIGHT

				Waveform		Plaque Morphology		% Stenosis
CCA	PSV	0.65	m/s	NO	Normal	-	----------	0
	EDV	0.15	m/s					
Bulb						H	Heterogeneous	20-29
ICA	PSV	0.79	m/s	NO	Normal	H	Heterogeneous	10-19
	EDV	0.26	m/s					
ECA				NO	Normal	H	Heterogeneous	10
Vert				AN	Antegrade flow			

LEFT

				Waveform		Plaque Morphology		% Stenosis
CCA	PSV	0.84	m/s	NO	Normal	-	----------	0
	EDV	0.18	m/s					
Bulb						H	Heterogeneous	10-19
ICA	PSV	0.60	m/s	NO	Normal	-	----------	0
	EDV	0.18	m/s					
ECA				NO	Normal	-	----------	0
Vert				AN	Antegrade flow			

Comments:

Comments:

BILATERALLY:
Carotid arteries are patent with normal waveforms and velocities. Minor heterogenous plaque in the carotid bulbs and ICA origins (20-29% stenosis right bulb).
Vertebral arteries patent with normal antegrade flow.

23. Carotid

REPORT E-75482328 VERIFIED Attended-26-Nov-2022 WALCT/WALCT-26-Nov-2022

Clinical History :
Clinical details: TIA CLINIC: Sudden onset 24/11 of R arm & leg weakness & numbness, ? L facial droop, dysarthria and dysphasia. Last 2 hours, but ongoing R hand numbness. PMH: NSTEMI - cardiac stents, T2DM, IHD, prev stroke, CKD, HTN, ureteric stent, hyperlipidemia.
Specific question to be answered: ? stenosis

US Doppler carotid artery Both VERIFIED Attended-26-Nov-2022 WALCT/WALCT-26-Nov-2022

Carotid duplex

RIGHT

				Waveform		Plaque Morphology		% Stenosis
CCA	PSV	0.49	m/s	NO	Normal	-	----------	0
	EDV	0.12	m/s					
Bulb						-	----------	0
ICA	PSV	0.40	m/s	NO	Normal	-	----------	0
	EDV	0.15	m/s					
ECA				NO	Normal	-	----------	0
Vert				AN	Antegrade flow			

LEFT

				Waveform		Plaque Morphology		% Stenosis
CCA	PSV	0.41	m/s	NO	Normal	-	----------	0
	EDV	0.12	m/s					
Bulb						H	Heterogeneous	10-19
ICA	PSV	0.38	m/s	NO	Normal	-	----------	0
	EDV	0.18	m/s					
ECA				NO	Normal	-	----------	0
Vert				AN	Antegrade flow			

Comments:

Comments:

BILATERALLY:
Carotid arteries patent with normal waveforms and velocities.
Vertebral arteries patent with normal antegrade flow.

24. Carotid

REPORT E-75483302 VERIFIED Attended-26-Nov-2022 WALCT/WALCT-26-Nov-2022

Clinical History :
Clinical details: preop CABG
Specific question to be answered: preop workup, ?carotid stenosis

US Doppler carotid artery Both VERIFIED Attended-26-Nov-2022 WALCT/WALCT-26-Nov-2022

Carotid duplex

RIGHT

				Waveform		Plaque Morphology		% Stenosis
CCA	PSV	1.13	m/s	NO	Normal	H	Heterogeneous	40-49
	EDV	0.23	m/s					
Bulb						H	Heterogeneous	50-59
ICA	PSV	1.15	m/s	NO	Normal	H	Heterogeneous	20-29
	EDV	0.21	m/s					
ECA				I	Increased velocities	H	Heterogeneous	50
Vert				AN	Antegrade flow			

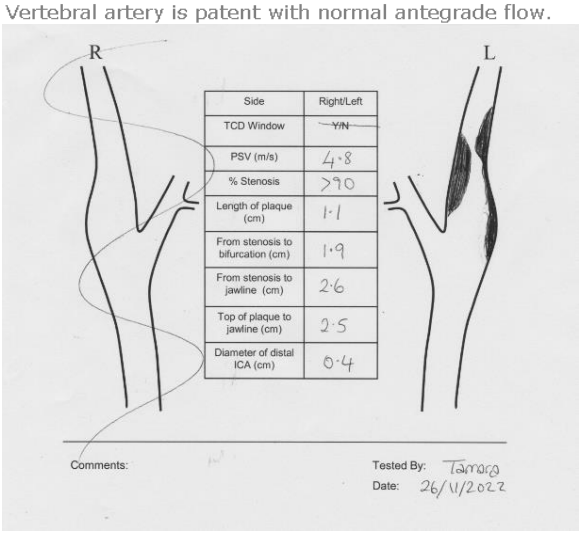
LEFT

				Waveform		Plaque Morphology		% Stenosis
CCA	PSV	0.70	m/s	NO	Normal	H	Heterogeneous	20-29
	EDV	0.18	m/s					
Bulb						H	Heterogeneous	30-39
ICA	PSV	4.84	m/s	I	Increased velocities	H	Heterogeneous	>90
	EDV	1.66	m/s					
ECA				I	Increased velocities	H	Heterogeneous	>75
Vert				R	Retrograde flow			

Comments:

LEFT:
Heterogenous plaque in the proximal ICA causing >90% stenosis (PSV 4.8m/s), and proximal ECA causing >75% stenosis (PSV 4m/s). See additional pre-op carotid duplex report.
Moderate heterogeneous plaque in the bulb (30-39% stenosis).
The vertebral artery flow appears absent in the proximal V2 segment and retrograde in the distal V2 segment.

RIGHT:
There is moderate heterogenous plaque throughout the mid and distal CCA which is non-haemodynamic (40-49% stenosis).
Mixed heterogenous and calcified plaque in the carotid bulb (50-59% stenosis, PSV 1.7m/s) and proximal ECA (50% stenosis) with raised velocities; ?artefactually raised due to contralateral stenosis.
Only minor plaque in the proximal ICA.
Vertebral artery is patent with normal antegrade flow.



25. Carotid

REPORT E-75466914 VERIFIED Attended-22-Nov-2022 WALCT/WALCT-22-Nov-2022

Clinical History :
Clinical details: 60M. Stroke call.
Specific question to be answered: ?Stenosis

US Doppler carotid artery Both VERIFIED Attended-22-Nov-2022 WALCT/WALCT-22-Nov-2022

Carotid duplex

RIGHT

				Waveform		Plaque Morphology		% Stenosis
CCA	PSV	0.63	m/s	NO	Normal	H	Heterogeneous	10-19
	EDV	016	m/s					
Bulb						C	Calcified	20-29
ICA	PSV	0	m/s	A	Absent/not detected	H	Heterogeneous	100
	EDV	0	m/s					
ECA				NO	Normal	C	Calcified	20
Vert				AN	Antegrade flow			

LEFT

				Waveform		Plaque Morphology		% Stenosis
CCA	PSV	0.84	m/s	NO	Normal	IR	Irregular plaque	30-39
	EDV	0.18	m/s					
Bulb						H	Heterogeneous	10-19
ICA	PSV	1.50	m/s	I	Increased velocities	H	Heterogeneous	60-69
	EDV	0.65	m/s					
ECA				I	Increased velocities	H	Heterogeneous	>50
Vert				AN	Antegrade flow			

Comments:

RIGHT:
The ICA is fully occluded from its origin to the distal extracranial ICA.
CCA and ECA patent with normal velocities and waveforms.
Vertebral artery is patent with normal antegrade flow.

LEFT:
Ulcerated plaque in the prox-mid CCA.
There are raised velocities seen in the mid-distal ICA which would suggest 60-69% stenosis, however, this is not focal as visually the lumen appears diffusely reduced in calibre ?thrombus/recanalised thrombus.
Also raised velocities in the proximal ECA just below the origin, >50% stenosis also due to ?thrombus.
Vertebral artery is patent with normal antegrade flow.

Medical Engineering & Physics
PMS
Carotid Doppler

Introduction and scope:

The presence and severity of disease of the extracranial arteries is assessed in order to plan therapy. Referral criteria are for patients with symptoms of cerebrovascular disease (stroke, transient ischaemic attacks or amaurosis fugax), carotid bruits, known risk of vascular disease, pre CABG or Tx workup.

Responsibilities:

Test staff: scientific or technical staff trained in vascular duplex scanning.

Equipment:

Duplex scanner with broadband linear array transducer.

Method:
Initial scanning is performed in a transverse plane in B-mode from the origin of the CCA (looking at the proximal subclavian where possible) to the bifurcation and distally, as far as the ICA and ECA can be followed. This is then repeated with colour flow imaging in transverse. Note any disease. In a longitudinal plane, flow waveforms of the CCA (mid-distal CCA), ECA and ICA (2-6cm beyond the bulb) are recorded and peak systolic and end diastolic velocities are measured in the CCA and ICA. Locate the vertebral artery and obtain a flow waveform. Note any abnormality in the direction or shape.

If disease is located, measure velocities pre stenosis and within stenosis. For lesions <50% B-mode with or without colour flow is used to measure the diameter reduction in the plane of greatest stenosis. When measuring velocities the Doppler angle should be 60 degrees or less and parallel with the flow of blood. Identify plaque characteristics (smooth, irregular, homogeneous, heterogeneous, calcified). For lesions (>50%) in the ICA, use velocity measurements as a guide to the degree of stenosis where appropriate.

On patients with poor access, or who are moving excessively, it is acceptable to not record velocities if genuinely not possible, and describe any plaque on its colour and b-mode appearance.

When grading ICA stenosis use the Kings College Hospital velocity criteria, in table 1.. If suspicious that the velocity and ultrasound appearance of a stenosis do not match, also use the joint recommendation criteria, in table 2. If any of the ratios are used, the CCA measurements should be made within 2cm of the carotid bifurcation.

Table 1: Kings College Hospital Criteria

Diameter reduction % ECST	**Peak systolic velocity (m/s)**
>50%	**>1.25 m/s**

>60%	**>1.8 m/s**
>70%	**>2.3 m/s**
>80%	**>3.0 m/s**
>90%	**>3.8 m/s**

Table 2: Diameter reduction velocity criteria (Oates et al):

Percentage Stenosis (NASCET)	Internal carotid peak systolic velocity cm/sec	Peak systolic velocity ration ICA_{PSV} / CCA_{PSV}	St Mary's ratio[c] ICA_{PSV}/CCA_{EDV}
<50	<125[a]	<2[a]	<8
50-59	>125[a]	2-4[a]	8-10
60-69			11-13
70-79	>230[a]	>4[a]	14-21
80-89			22-29
>90 but less than near occlusion	>400[b]	>5[b]	>30
Near occlusion	High, Low – string flow	Variable	Variable
Occlusion	No flow	Not applicable	Not applicable

[a] Grant el al
[b] Filis et al
[c] Nicolaides et al

Reporting:

The findings should be reported on the CRIS system. The findings should cover velocities, plaque stenosis percentage and image description.

Inform vascular surgeons of significant findings.

Suggested images:

- Representative waveform and PSV and EDV measurements from CCA.
- Representative waveform and PSV and EDV measurements from ICA.
- Representative waveform from ECA.
- Representative waveforms from Vertebral artery.
- Images of other significant pathology reported on.
-

Inspection criteria:

Complete CRIS database patient tested/DNA/rebooked.

References:

Bluth EI et al.: Carotid duplex sonography; a multicenter recommendation for standardized imaging and Doppler criteria. Radoigraphics 6; 487-506 1988

Cole, S: Vascular Laboratory Practice: Part III. 1st edition. IPEM. York 2001.

Deane C: PgC Carotid vascular course notes. Kings College Hospital, 2001

Filis et al: Duplex ultrasound criteria for defining the severity of carotid stenosis. Ann Vasc Surg 2002 ; 16: 413-21

Grant et al: Carotid artery stenosis:grayscale and Doppler ultrasound diagnosis – society of radiologists in ultrasound consensus conference. Radiology 2003; 229:340-6

King=s College Hospital angiography and Duplex comparison studies.

Nicolaides et al: Angiographic and duplex grading of internal carotid stenosis: can we overcome confusion? J endovasc Surg 1996:3 :15/-65

Oates et al: Joint Recommendations for Reporting Carotid Ultrasound Investigations in the United Kingdom. European Society for Vascular Surgery 2009; 37, 251-261

Zwiebel WJ: Introduction to Vascular Ultrasonography. 4th edition WB Saunders Philadelphia 2000.

Medical Engineering & Physics
PMS
Paediatric Transcranial Doppler

Introduction and scope:

Sickle cell disease is an important health problem. Young children with sickle cell disease have a high risk of stroke and other complications. The risk of stroke is increased when the velocity of the blood in the major intracranial vessels is raised. Transcranial Doppler can be used to identify high velocities in the intracranial vessels and therefore identify the children most at risk of stroke (Adams et al, 1992).

At KCH, transcranial Doppler imaging (TCDI) is used for routine paediatric assessment.

Responsibilities:

Test Staff: Scientific or technical staff trained in vascular duplex imaging.

Equipment:

Duplex scanner with low frequency phased array transducer and 5-8MHz linear array transducer.

Method:

Intracranial assessment:

The child must be awake and calm for the assessment.

The TCD preset should be selected. The transducer is placed over the transtemporal window and subtle movements are made to adjust the transducer position so that the brainstem can be seen with B-mode imaging. Colour flow imaging is then used to visualise the major intracranial vessels. PRF, colour gain, focus and other settings may need to be adjusted to optimise the image.

Spectral Doppler is used to obtain waveforms from the MCA, terminal ICA, ACA, ICA bifurcation and PCA. The sample volume should be set at 6mm, or as close to 6mm as possible if the scanner does not have this option. The Doppler gain should be increased to a high level but not so high that saturation occurs.

Care should be taken to optimise the image so that vessels are insonated in line with the transducer beam as much as possible. The sample volume should be moved through the course of vessels where a long section is visible, e.g. the MCA. The waveform should be analysed to calculate the highest TAMX (Time Averaged Maximum Velocity), either by automatic trace (if there is a clear spectral Doppler waveform) or manual estimation. The highest TAMX measured in each vessel should be recorded. No angle correction should be made.

Extracranial assessment:

Assessment of the carotid and vertebral arteries should be performed if possible. However, if the child will not tolerate this, it is acceptable not to scan these vessels.

Scanning is initially performed in a transverse plane from the origin of the CCA to the bifurcation and distally in the ICA as far as can be seen. In a longitudinal plane, flow waveforms of the ICA are recorded and the peak systolic velocity (PSV) is measured. The ICA is examined for evidence of stenosis. The ICA should be examined as far as can be imaged extracranially. The vertebral artery is located, examined for stenosis and a flow waveform obtained. When measuring velocities the Doppler angle should be 60 degrees or less and the angle correction parallel with the flow of blood.

Extracranial ICA velocities may be generally higher in children with sickle cell disease than in adult

patients and therefore standard carotid artery stenosis criteria cannot be applied. The highest PSV measured should be recorded, and if this appears high the operator should attempt to analyse if this is due to tortuosity or stenosis by comparing velocity changes through the narrowing.

Reporting:

During the examination, appropriate images of intracranial and extracranial flow waveforms should be stored on PACS. At the end of the examination, the findings should then be reported onto CRIS. Attempts should be made to store an image for each vessel identified, from those described above. However due to poor windows or poor patient compliance, it is not unusual for image quality to be poor.

The study will be classed as Normal, Inadequate, Conditional or Abnormal based on the following criteria (Adams et al, 1998; Kwiatkowski et al, 2006)

STOP stroke risk category	Criteria
Normal	The MCA, terminal ICA and bifurcation can be identified bilaterally AND all intracranial TAMX velocities are less than 170cm/s.
Inadequate	One or more of the MCAs, terminal ICAs, or bifurcations cannot be identified.
Conditional	TAMX in an MCA, terminal ICA or bifurcation is 170-199cm/s, OR if TAMX in an ACA or PCA is ≥ 170cm/s
Abnormal	TAMX in an MCA, terminal ICA or bifurcation is ≥ 200 cm/s

Suggested Images:
INTRACRANIAL

- Bilaterally, the highest recorded TAMV from the;
- MCA
- MCA at the bifurcation
- ACA
- Distal intracranial ICA
- PCA

EXTRACRANIAL

- Highest PSV in the R and L ICA.
- A representative waveform from the R and L vertebral artery.

References:

Adams, R. et al (1992). The use of transcranial ultrasonography to predict stroke in sickle cell disease. *NEJM,* 326: 605-10

Adams, R. et al, (1998). Prevention of a first stroke by transfusion in children with sickle cell anaemia and abnormal results on transcranial Doppler ultrasound. *NEJM,* 339:5-11

Kwiatkowski, J.et al, (2006). Elevated blood flow velocity in the anterior cerebral artery and stroke risk in sickle cell disease: extended analysis from the STOP trial. *Br J Haematology,* 134: 333-339