HOST-CHS assessment tool – Norwood operation (HLHS) – No RV-PA conduit

SickKids | Labatt Family Heart Centre

		Steps	YES/ NO		Weight of step (1-5)	Included in HOST-CHS Holistic Score
1	**Control of the Patent Ductus Arteriosus (PDA)**					
	1	Has the PDA been ligated?	Y	N	2	KNOWLEDGE
	2	Is the tie 2-3mm above the origin of the left pulmonary artery (LPA) [avoiding potential LPA stenosis]?	Y	N	3	RESPECT
2	**Atrial Septectomy**					
	3	Has the atrial septum been resected?	Y	N	2	KNOWLEDGE
	4	Has the delegate enlarged the ASD posteriorly [avoiding potential heart block]?	Y	N	3	RESPECT
3	**Isolation of the confluent branch pulmonary arteries**					
		Is the cut on the main pulmonary artery (MPA):				
	5	i) At the midpoint between the sinotubular junction (STJ) and base of the right pulmonary artery?	Y	N	4	RESPECT
	6	ii) Clean? (i.e. not jagged or having sharp protruding points)	Y	N	3	RESPECT
	7	iii)Avoids damaging the pulmonary artery orifices +/-pulmonary valve?	Y	N	5	KNOWLEDGE
4	**Resection of Ductal tissue**					
	8	Has the PDA been transected?	Y	N	2	FLUENCY
	9	Has all the ductal tissue been removed?	Y	N	4	KNOWLEDGE
	10	**If the interdigitating technique used:** Has the aortic arch been divided at the isthmus AND has the descending aorta been divided 1-2mm below the level of the ductal tissue? **- Score 'Y' if alternative technique used**	Y	N	3	KNOWLEDGE
	11	Are both cuts clean? (i.e. not jagged or having sharp protruding points)	Y	N	3	RESPECT
5	**Preparation for augmentation of the ascending aorta and aortic arch**					
	12	Has the delegate cut along the lesser curvature of the aortic arch until 2-3mm above the STJ?	Y	N	4	KNOWLEDGE
	13	Has the incision been extended to either of the coronary orifices? (i.e. compromising coronaries)	N	Y	5	RESPECT
	IF INTERDIGITATING TECHNIQUE USED: CONTINUE TO SECTION 6 IF ALTERNATIVE TECHNIQUE USED: SKIP TO SECTION 9					
6	**Cutback incision into Pulmonary Root (Cutback 1) for DKS anastomosis**					
	14	**Cutback 1 -** Has the pulmonary root been cut parallel to the incision made in the ascending aorta?	Y	N	4	KNOWLEDGE
	15	Is the cut 2-4mm in length?	Y	N	3	RESPECT
7	**Ascending aorta and Pulmonary root anastomosis (DKS)**					
	16	Has the anastomosis begun at the bottom/apex of the incision?	Y	N	3	FLUENCY
		Suture assessment:				
	17	i) Are **all** sutures evenly spaced from one another **with** a gap of 1-2mm between suture bites?	Y	N	3	FLUENCY
	18	ii) Are **all** sutures an adequate distance from the tissue edge (1-2mm)?	Y	N	3	FLUENCY
8	**Interdigitating anastomosis**					
	19	**Cutback 2 -** Has a cutback incision been made into the posterior wall of the descending aorta **and** is a length of 3-4mm?	Y	N	4	KNOWLEDGE
	20	Has an anastomosis been completed between the posterior wall of the descending aorta and the distal aortic arch?	Y	N	3	FLUENCY
	21	**Cutback 3 -** Has a cutback incision been made into the anterolateral wall of the descending aorta? (i.e. not completely opposite Cutback 2)	Y	N	4	KNOWLEDGE
9	**Arch Reconstruction**					
	22	Has the patch anastomosis commenced at the toe/apex of the anterior descending aorta?	Y	N	4	FLUENCY

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	23	Are both suture ends continued until the interdigitating sutures and tied? **- Score 'Y' if alternative technique used**	Y	N	3	FLUENCY
		Posterior edge suture of aortic arch (Inner curve):				
	24	i) Has excess patch, which corresponds to the posterior edge (inner curve), been trimmed to the curvature of the aortic arch and the ascending aorta if required? (i.e. to avoid kinking/potential compression of LPA) **- Score 'Y' if trimming not required – Score 'N' if patch too small**	Y	N	5	KNOWLEDGE
	25	ii) Has the suture continued along the aortic arch and down the ascending aorta to either the DKS or aortic root?	Y	N	2	FLUENCY
	26	iii) **If the interdigitating technique:** Has the suture been continued along the lateral wall of the DKS (before the anterior edge suture is commenced)? **If alternative technique used score 'Y'**	Y	N	3	FLUENCY
		Anterior edge suture of aortic arch (Outer curve):				
	27	i) Has excess patch, which corresponds to the anterior edge (outer curve), been trimmed to the curvature of the aortic arch and the ascending aorta if required? (i.e. to avoid kinking/potential compression) **– Score 'Yes' if trimming not required – Score 'N' if patch too small**	Y	N	5	KNOWLEDGE
	28	ii) Has the suture continued along the aortic arch and ascending aorta?	Y	N	2	FLUENCY
	29	**If the interdigitating technique used:** Has the excess patch been trimmed to accommodate the DKS? **If the alternative technique used:** Has the excess patch been trimmed to accommodate the ascending aorta?	Y	N	4	KNOWLEDGE
	30	**If the interdigitating technique used:** Has the suture along the anterior wall of the DKS been completed? **If the alternative technique used:** Has the patch anastomosis been completed?	Y	N	3	FLUENCY
		Suture assessment				
	31	i) Are **all** sutures evenly spaced from one another **with** a gap of 2-3mm between suture bites?	Y	N	3	FLUENCY
	32	ii) Are **all** sutures an adequate distance from the tissue edge (2-3mm)?	Y	N	3	FLUENCY
IF ALTERNATIVE TECHNIQUE USED:CONTINUE TO SECTION 10 IF INTERDIGITATING TECHNIQUE USED: SKIP TO SECTION 11						
10	33	Before the anterior edge suture line of the ascending aorta was completed was an incision made into the patch for the MPA anastomosis?	Y	N	4	KNOWLEDGE
	34	i) Is the proximal end of the incision at the same level of the cut MPA?	Y	N	3	KNOWLEDGE
	35	ii) Does the distal part of the incision end half way between the left common carotid and left subclavian artery?	Y	N	3	KNOWLEDGE
		Pulmonary root to reconstructed aorta anastomosis				
	36	i) Has the suture commenced along the posterior wall of the pulmonary root?	Y	N	3	FLUENCY
	37	ii)Has the anastomosis been completed? (i.e. completion of posterior and anterior walls)	Y	N	3	FLUENCY
	38	iii) Is the anastomosis kinked, twisted or stretched?	Y	N	5	RESPECT
		Suture assessment:				
	39	i) Are **all** sutures evenly spaced from one another **with** a gap of 2-3mm between suture bites?	Y	N	3	FLUENCY
	40	ii) Are **all** sutures an adequate distance from the tissue edge (2-3mm)?	Y	N	3	FLUENCY
SCORE THIS SECTION FOR BOTH TECHNIQUES TO COMPLETE ASSESSMENT						
11	**Patch assessment:**					
	41	Are there any visible holes within the patch?	N	Y	4	RESPECT
	42	Is the patch kinked at any point?	N	Y	5	RESPECT
	43	Is there any kinking of the ascending aorta that would compromise coronary flow?	N	Y	5	RESPECT
	44	Have any plication sutures been required to make the patch narrower or additional patch material used to fill a gap in the patch?	N	Y	4	RESPECT

	45	Is the arch reconstruction complete?	Y	N		3	FLUENCY
			TOTAL SCORE			**128**	