University of Calgary Aortic Program

Type B Aortic Dissection Recommendations

Classification and Diagnostics

1.1 We recommend classification of all aortic dissections using the joint SVS/STS aortic dissection reporting guidelines[1].

1.2 We suggest CT angiogram of chest, abdomen, and pelvis as initial imaging study for suspected TBAD or TBIMH with follow-up imaging at 48-72 hours. We also suggest follow-up imaging at 7 days (this may be omitted if previous two imaging studies are stable and patient is asymptomatic), 1 month, 6 months, 12 months, and yearly thereafter[1].

Treatment

2.1 We recommend immediate TEVAR in acute/hyperacute phase regardless of age and/or suspicion of connective tissue disorder (CTD) in all patients who present with Type B Aortic Dissection (TBAD) or Type B Intramural Hematoma (TBIMH) with rupture or clinical signs of malperfusion (spinal, visceral, renal or extremity)[1].

2.2 We recommend TEVAR for patients >55 years old and with no known/suspected CTD with Type B_{3-x} aortic dissection in the acute to subacute phase[2] who have any of the following radiologic or clinical findings[3]:

i. Initial maximal aortic diameter >40 mm[4].

ii. False lumen diameter >22 mm[4].

iii. Intimal entry tear >10 mm[4].

iv. Refractory, uncontrollable pain after 48 hours of best medical therapy[1].

v. Hypertension refractory to IV antihypertensive medications or 4 or greater medications[1].

vi. Interval deterioration in aortic diameter (>5mm in short term follow-up, <30 days) or proximal or distal extension[1].

vii. Extensive involvement of mesenteric vessels (celiac axis or SMA) where false lumen of proximal visceral vessel is >80%.

2.3 We recommend TEVAR for patients >55 years old and with no known/suspected CTD with TBIMH originating in Zone 3 in the acute to subacute phase who have any of the following radiologic or clinical findings:

i. Initial maximal aortic diameter >40 mm[6].

ii. IMH greater than or equal to 10 mm in thickness[6,7].

iii. Expansion of IMH to greater than or equal to 10 mm thickness on short interval (<30 days) imaging[7].

iv. Expansion of maximal aortic diameter >5 mm or to a total diameter of >40 mm during short interval (<30 days) imaging[6].

v. The development of ulcer like projections (ULP) >3mm in diameter short interval (<30 days) imaging[8].

v. We recommend not landing proximal aspect of TEVAR within IMH to reduce risk of proximal extension of IMH or retrograde Type A dissection[9].

Adjuncts

3.1 We recommend perioperative spinal drainage during TEVAR in patients who are done urgently (not emergently) and who require or have[10,11]:

i. Long segment (>20 cm) descending thoracic aorta (DTA) coverage.

ii. Left subclavian artery coverage and 15 cm or greater DTA coverage.

iii. Previous EVAR, F/BEVAR, or open AAA repair.

iv. Coverage of intercostal arteries at the T8-T12 level.

v. Occlusion of their internal iliac arteries.

3.2 We recommend concomitant carotid-subclavian bypass in patients who have urgent (not emergent) TEVAR with coverage of the left subclavian artery (Zone 2) and the following[12]:

i. A dominant left vertebral artery

ii. A left vertebral artery originating off the aortic arch

iii. An incomplete circle of Willis

iv. A previous LIMA to LAD coronary artery bypass graft

v. A functioning left arm arteriovenous fistula or graft.

vi. Long segment (>20 cm) descending thoracic aorta (DTA) coverage.

vii. Previous EVAR, F/BEVAR, or open AAA repair.

viii. Coverage of intercostal arteries at the T8-T12 level.

ix. Occlusion of their internal iliac arteries.

3.3 We suggest TEVAR stent graft sizing to 10% oversizing and not more in all TBAD and TBIMH patients to reduce the risk of stent induced new entry tears (SINE)[13].

Multidisciplinary Aortic Care Model

4.1 We recommend discussion of individual cases with members of the Calgary Aortic Program when patients are <55 years of age or have a known/suspected CTD for consideration of open repair.

4.2 We recommend discussion with members of the Calgary Aortic Program in all cases where TBAD extends into Ishimaru Zones 1-2, or where IMH extends into Ishimaru Zones 0-2.

4.3 The members of the Calgary Aortic Program are willing and available at anytime to provide advice, discussion, and treatment of any individual cases that may not meet the criteria above but whom the current most responsible physician desires an opinion.

References

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