***OEIS Procedural Conduct Recommendations during the COVID-19 Crisis of 2020***

April 6, 2020

1. Peripheral Arterial Disease (PAD):
   1. Risk of not proceeding if appropriate: acute limb ischemia, worsening wound, pain, bone infection, more extensive amputation, or limb loss which can progress to become life threatening, or loss of independence).
   2. Procedures: angiography, angioplasty, atherectomy, stent placement.
   3. Indications and recommendations:

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| POSTPONE | PROCEED |
| Rutherford 1-3 (claudication) | Rutherford 4 (ischemic rest pain): moderate to severe |
| Rutherford 4 (ischemic rest pain): mild | Rutherford 5 (progressive ischemic wounds) |
|  | Rutherford 6 (wet gangrene) |
|  | Distal embolization: with wounds or tissue loss |
|  | Vascular Bypass and/or stent(s) with severe stenosis felt to be at risk of thrombosis |
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1. Abdominal aortic aneurysm (AAA) repair is performed in the hospital but is often preceded by planning or preparatory procedures such as embolization:
   1. Risk of not proceeding if appropriate: aneurysm rupture and death.
   2. Procedures: angiography, angioplasty, atherectomy, stent placement.
   3. Indications and recommendation (these recommendations concern the outpatient planning or preparatory procedures only):

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| POSTPONE | PROCEED |
| Asymptomatic AAA less than 5.4 cm | Asymptomatic AAA greater than 5.4cm |
|  | Iliac aneurysm 3.0 cm or greater |

1. Carotid/cerebral artery disease: Carotid stenting (CAS) and/or endarterectomy (CEA) are typically performed in a hospital but preoperative angiography may be performed in an OIS.
   1. Risk of not proceeding if appropriate: stroke.
   2. Procedures: angiography in preparation for CEA/CAS.
   3. Indications and recommendation (applies only to preoperative angiography):

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| POSTPONE | PROCEED |
| Asymptomatic | Symptomatic (ipsilateral TIA/stroke) |

1. Upper extremity artery disease:
   1. Risk of not proceeding if appropriate: arm pain,weakness, finger wounds, finger amputation.
   2. Procedures: angiography, angioplasty, stent placement.
   3. Indications and recommendation:

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| POSTPONE | PROCEED |
| Asymptomatic | Acute arm/hand/finger ischemia |
|  | Progressive tissue loss or wet gangrene |

1. Renal artery stenosis:
   1. Risk of not proceeding if appropriate: progressive renal failure, refractory hypertension, flash pulmonary edema and/or congestive heart failure due to fluid overload.
   2. Procedures: angiography, angioplasty, stent placement.
   3. Indications and recommendation:

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| POSTPONE | PROCEED |
| Asymptomatic | Symptomatic |

1. Acute/Subacute/Chronic worsening mesenteric ischemia:
   1. Risk of not proceeding if appropriate: weight loss, bowel perforation, and/or bowel gangrene, death.
   2. Procedures: angiography, angioplasty, stent placement.
   3. Indications and recommendation:

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| POSTPONE | PROCEED |
| Asymptomatic | Acute/subacute symptomatic mesenteric ischemia  Chronic worsening symptomatic mesenteric ischemia |

1. Superficial venous insufficiency:
   1. Risk of not proceeding if appropriate: non-healing and/or worsening venous ulcerations, cellulitis, intractable pain, variceal hemorrhage/bleeding.
   2. Procedures: endovenous saphenous ablation and/or suture ligation, necessary office visits and wound care/debridements.
   3. Indications and recommendation:

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| POSTPONE | PROCEED |
| CEAP Class 1-5 patients (no active ulcers)  Nonbleeding CVI patients | CEAP 6 (Active wounds  Venous ulcers- office visit and compression wrapping of leg  Variceal bleeding or hemorrhage |

1. Acute deep vein thrombosis (DVT):
   1. Risk of not proceeding if appropriate: massive and debilitating swelling, wound formation, acute “phlegmasia” leading to limb loss, pulmonary embolism.
   2. Procedures: endovenous thrombectomy/catheter extraction, catheter directed lysis, venous angioplasty and/or stent placement, intravascular ultrasound imaging.
   3. Indications and recommendation:

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| POSTPONE | PROCEED |
| Asymptomatic DVT  Symptomatic infrainguinal DVT except CFV as specified | Symptomatic iliocaval DVT  Symptomatic and occlusive common femoral vein (CFV) DVT |

1. Inferior Vena Caval (IVC) filters:
   1. Risk of not proceeding if appropriate:
      1. Placements: pulmonary embolism (particularly in patients unable to be treated with anticoagulation), death.
      2. Removal: inability to remove filter in the future, IVC filter fracture, migration, IVC perforation and/or occlusion.
   2. Procedures: IVC filter placement, IVC filter removal.
   3. Indications and recommendation:

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| POSTPONE | PROCEED |
|  | Placement if contraindication, complication, or failure of anticoagulation  Retrieval if delay would likely prevent future retrieval (FDA recommends retrieval between 29-54 days post implant) |

1. Vascular Access: venous ports or peripheral/central catheters (typically for immediate use of IV antibiotics or chemotherapy):
   1. Risk of not proceeding if appropriate: worsening infection, cancer growth, death.
   2. Procedures: angiography, central catheter placement with and without subcutaneous port.
   3. Indications and recommendation:

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| POSTPONE | PROCEED |
|  | Needed for immediate treatment of IV antibiotics, chemotherapy, and/or other necessary IV therapeutics |

1. Cancer therapy:
   1. Risk of not proceeding if appropriate: delay in diagnosis, delay in treatment and progression of cancer to more advanced stages, metastasis, death.
   2. Procedures: biopsies, tumor chemo and/or radioembolization.
   3. Indications and recommendation:

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| POSTPONE | PROCEED |
|  | Suspected or proven malignancies as clinically needed |

1. Dialysis procedures:
   1. Risk of not proceeding if appropriate: electrolyte imbalance, fluid overload with pulmonary edema, uremia, cardiac arrest, uremic bleeding complications. Continuation of dialysis is required for life.
   2. Procedures: angiography, angioplasty, stent placement, thrombectomy and/or lysis, tunneled or temporary central catheter placements and exchanges.
   3. Indications and recommendation:

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| POSTPONE | PROCEED |
| Preop AV access creation venography and arteriography unless documented extenuating circumstances | AV fistula/graft/catheter thrombosis, malfunction, or non-functional  Need for new access |
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1. Vascular (non-cancer) embolization:
   1. Risk of not proceeding if appropriate: bleeding, pain.
   2. Procedures: angiography, embolization.
   3. Indications and recommendation:

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| POSTPONE | PROCEED |
| Varicoceole embolization  Pelvic Congestion Syndrome embolization  Uterine fibroid embolization except as specified for bleeding | Uterine fibroids with ongoing bleeding requiring transfusion |

1. Compression fracture treatment:
   1. Risk of not proceeding if appropriate: severe loss of conditioning  and ability to perform independent activities of daily living requiring placement in nursing home or assisted living facility.  Pulmonary complications (atelectasis, pneumonia, hypoxia, deep vein thrombosis/pulmonary embolism), extended use of narcotics (with associated dependency issues, constipation, respiratory compromise, development of tolerance) and difficulty avoiding social distancing (multiple physical therapy sessions-if this is even available, increased dependency on others for assistance).
   2. Procedures: kyphoplasty, vertebroplasty.
   3. c) Indications and recommendation:

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| POSTPONE | PROCEED |
|  | Kyphoplasty/Vertebroplasty for acute treatment of severe acute pain or severe exacerbation of chronic underlying condition |

1. Interventional pain management:
   1. Risk of not proceeding if appropriate: extended use of narcotics (with associated dependency issues, constipation, respiratory compromise, development of tolerance) and difficulty avoiding social distancing (multiple physical therapy sessions-if this is even available, increased dependency on others for assistance.
   2. Procedures: image guided epidural steroid injections, regional nerve blocks, and facet injections.
   3. Procedures do not typically require utilization of PPE resources.
   4. Indications and recommendation:

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| POSTPONE | PROCEED |
|  | Severe acute pain or severe exacerbation of chronic underlying condition |

1. Heart Catheterization and coronary stenting:
   1. Risk of not proceeding if appropriate: myocardial infarction (MI), Congestive heart failure, death.
   2. Procedures: coronary angiography, angioplasty, stent placement.
   3. Indications and recommendation:

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| POSTPONE | PROCEED |
| Stable Angina  Low to moderate risk stress test  All other stable Valvular disease | STEMI, NSTEMI (heart attacks)  Unstable angina  High risk Stress test  Moderate risk Stress test with resting SOB or chest pain  New onset Congestive heart failure  Critical Aortic stenosis with symptoms |

1. Pacemaker Implantation:
   1. Risk of not proceeding if appropriate: syncope/near syncope (fainting), falls, hypotension, death.
   2. Procedures: pacemaker insertion, battery and/or lead placement/replacement.
   3. Indications and recommendation:

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| POSTPONE | PROCEED |
| Symptomatic Bradycardia: Mild to moderate symptoms  Existing pacemaker end of life replacement: Non-Pacemaker dependent | Symptomatic Bradycardia: severe symptoms Type 2 Mobitz heart block  Third Degree heart block  Existing pacemaker end of life replacement: Pacemaker dependent |

1. Defibrillator Implant:
   1. Risk of not proceeding if appropriate: sudden death, syncope/near syncope (fainting), falls, possible progressive heart failure exacerbation.
   2. Procedures: defibrillator implantation, battery and/or lead placement/replacement.
   3. Indications and recommendation:

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| POSTPONE | PROCEED |
| (Non BIV) ICD: if patient tolerating lifevest, may postpone until after May 8th | BIV-ICD indication: refractory symptomatic heart failure  (Non BIV) ICD: if patient not tolerating lifevest  Symptomatic or sustained ventricular tachycardia with EF<35%  Existing Defibrillator end of life replacement and/or malfunctions |