



INTERVENTIONAL RADIOLOGY MINIMALLY-INVASIVE TREATMENTS

REFERRAL GUIDE

Bronson Battle Creek Hospital
Bronson Methodist Hospital
(269) 341-6380

Ordering An Interventional Radiology Treatment

GROUP 1

Gonadal vein embolization	<p>Procedure: Referrals evaluated in clinic prior to treatment</p> <hr/> <p>Epic Office for Bronson Methodist Hospital: IR Ambulatory Referral</p> <hr/> <p>Epic Office for Bronson Battle Creek Hospital: IR Ambulatory Referral</p> <hr/> <p>Non-Epic for Bronson Methodist Hospital: Fax to (269) 341-6792: <ul style="list-style-type: none"> • order for procedure • most recent office note • medication list </p> <hr/> <p>Non-Epic Office for Bronson Battle Creek Hospital: Fax to (269) 341-6792: <ul style="list-style-type: none"> • order for procedure • most recent office note • medication list </p>
Liver directed therapy	
Minimally invasive treatment of central/peripheral arterial/venous conditions	
Pelvic congestion syndrome	
Percutaneous ablation	
Percutaneous feeding tube placement	
Percutaneous transhepatic cholangiogram (PTC) with intervention	
Portal vein embolization	
Pre-surgical and palliative embolization of vascular tumor	
Renal angiomyolipoma (AML) embolization	
Transjugular intrahepatic portosystemic shunt (TIPS)	
Uterine fibroid embolization/uterine artery embolization (UFE or UAE)	
Vertebral augmentation – vertebroplasty and kyphoplasty	

GROUP 2

Aspira catheter	<p>Procedure: Referrals scheduled without routine clinic visit</p> <hr/> <p>Epic Office for Bronson Methodist Hospital: IR Ambulatory Referral</p> <hr/> <p>Epic Office for Bronson Battle Creek Hospital: IR Ambulatory Referral</p> <hr/> <p>Non-Epic for Bronson Methodist Hospital: Fax to (269) 341-6792: <ul style="list-style-type: none"> • Order for procedure • Lab orders for PT/INR, CBC, BMP, Urine Preg • Most recent office note • Medication list </p> <hr/> <p>Non-Epic Office for Bronson Battle Creek Hospital: Fax to (269) 341-6792: <ul style="list-style-type: none"> • Order for procedure • Lab orders for PT/INR, CBC, BMP, Urine Preg • Most recent office note • Medication list </p>
Biopsies – organ and bone marrow	
Epidural steroid injections (ESI)	
Fistulogram/shuntogram with intervention	
Inferior vena cava (IVC) filter placements/removals	
Lumbar puncture	
Myelogram	
Percutaneous nephrostomy access	
Peripherally inserted central venous catheter (PICC) placement	
Port placement	
Tunneled (chronic, cuffed)/non-tunneled dialysis catheter	
Visceral plexus nerve blocks	

GROUP 3

Biopsy – thyroid
Procedure: Thyroid Biopsy Requests
Epic Office for Bronson Methodist Hospital: Place order for US fine needle aspiration. Patient calls (269) 341-8700 to schedule.
Epic Office for Bronson Battle Creek Hospital: IR Ambulatory Referral
Non-Epic for Bronson Methodist Hospital: Fax paper order to: (269) 343-4277. Patient calls (269) 341-8700 to schedule.
Non-Epic Office for Bronson Battle Creek Hospital: Fax to (269) 341-6792: <ul style="list-style-type: none"> • Order for procedure • Most recent office note • Medication list

GROUP 4

Paracentesis, Thoracentesis
Procedure: Paracentesis or Thoracentesis Requests
Epic Office for Bronson Methodist Hospital: Place order for US paracentesis or US thoracentesis. Order CBC & PT/INR. Patient calls (269) 341-8707 to schedule.
Epic Office for Bronson Battle Creek Hospital: Place order for US paracentesis or US thoracentesis. Order CBC & PT/INR. Patient calls (269) 245-8541 to schedule.
Non-Epic for Bronson Methodist Hospital: Fax to (269) 341-6792: <ul style="list-style-type: none"> • Order for para or thoa • Lab orders for CBC & PT/INR We will contact patient.
Non-Epic Office for Bronson Battle Creek Hospital: Fax to (269) 245-8061: <ul style="list-style-type: none"> • Order for para or thoa • Lab orders for CBC & PT/INR. Patient calls (269) 245-8541 to schedule.

Interventional Radiology Treatments

This is a list of some of the most common interventional radiology (IR) treatments.

ONCOLOGY TREATMENTS

Liver directed therapy

(See chart, group 1)

Chemoembolization – treatment of limited primary hepatocellular carcinoma and liver predominant metastatic disease by focused delivery of small beads imbedded with chemotherapeutic medicine into the feeding vessels

Radioembolization (Y-90) – treatment of diffuse hepatocellular carcinoma or diffuse hepatic metastases by delivery of small beads embedded with radioactive material into the hepatic artery

Percutaneous ablation

(See chart, group 1)

Treatment of lesions of the liver, kidney and lung, utilizing thermal energy to kill tumors with a small margin of normal parenchyma, sparing function of the majority of the organ

Symptomatic bone lesions can be treated for palliation of pain.

Pre-surgical and palliative embolization of vascular tumor

(See chart, group 1)

Bland embolization of highly vascular tumors anywhere in the body, to reduce risk of bleeding at time of surgery, or as palliative reduction in hemorrhage for non-operative patients

Biopsies – organ, bone marrow, thyroid (See chart, group 2 or 3, as appropriate)

Percutaneous sampling of a suspicious lesion by image guidance

The target is determined by assessing the feasibility and safety with the ability to accurately diagnose and stage a malignant process. Specific biopsy site requests should be discussed with an interventional radiologist.

Port placement (See chart, group 2)

Subcutaneous port placed for long-term central venous access

WOMEN'S HEALTH TREATMENTS

Pelvic congestion syndrome

(See chart, group 1)

Treatment of chronic pelvic pain due to enlarged pelvic varices by gonadal vein embolization

Uterine fibroid embolization/uterine artery embolization (UFE or UAE) (See chart, group 1)

Treatment of symptomatic uterine fibroids (bulk symptoms and menorrhagia) by bland embolization of the uterine arteries

PAIN MANAGEMENT TREATMENTS

Visceral plexus nerve blocks

(See chart, group 2)

Treatment of visceral nerve pain, typically in the setting of malignancy, by injection of anesthetic, steroids, or ethyl-alcohol into the nervous plexus

Epidural steroid injections (ESI)

(See chart, group 2)

Temporary symptomatic treatment of neck, arm, back, and leg pain caused by inflamed spinal nerves

NEUROLOGICAL TREATMENTS

Vertebral augmentation – vertebroplasty and kyphoplasty

(See chart, group 1)

Treatment of symptomatic acute and subacute vertebral compression fractures by injection of cement to stabilize the fractured vertebral body

Lumbar puncture (See chart, group 2)

Fluoroscopically guided placement of a needle into the thecal sac to remove a sample of cerebrospinal fluid for diagnostic testing or therapeutic relief

Myelogram (See chart, group 2)

Fluoroscopically guided injection of contrast material performed in conjunction with a subsequent CT for detailed evaluation of the spinal cord, nerve roots and spinal lining in patients that cannot undergo MRI

VASCULAR TREATMENTS

Inferior vena cava (IVC) filter placements/removals

(See chart, group 2)

Temporary or permanent metallic filter to prevent migration of lower extremity deep venous thrombosis from causing significant pulmonary embolus in the setting of confirmed DVT or as surgical prophylaxis

Follow-up after placement of temporary filters will be managed by the radiologist's office and removal will be coordinated with the primary provider.

Minimally invasive treatment of central/peripheral arterial/venous conditions (See chart, group 1)

Examples of conditions treatable within our IR service include, but are not limited to:

- Celiac/mesenteric artery stenosis
- Peripheral arterial disease
- Deep vein thrombosis
- Post thrombotic syndrome
- Renal artery stenosis
- Vascular malformation
- Endoleak (s/p EVAR)

VENOUS ACCESS TREATMENTS

Tunneled (chronic, cuffed)/non-tunneled dialysis catheter

(See chart, group 2)

We can assist with initial placement and subsequent exchanges or revision, when full exchange is not needed. We offer access in traditional locations, as well as more complex access sites such as external jugular, translumbar inferior venacaval, and transhepatic, for patient with limited access.

Fistulogram/shuntogram with intervention (See chart, group 2)

Diagnosis and treatment of dialysis access dysfunction

Peripherally inserted central venous catheter (PICC) placement (See chart, group 2)

Insertion of a central venous catheter via a peripheral vein

Tunneled jugular access is used for patients with renal failure or inadequate upper arm veins.

Continued on back

GASTROINTESTINAL TREATMENTS

Percutaneous feeding tube placement (See chart, group 1)

Insertion and management of a feeding tube directly into the stomach through the abdomen

Percutaneous transhepatic cholangiogram (PTC) with intervention (See chart, group 1)

Treatment of malignant and benign central biliary strictures not amenable to ERCP by use of a percutaneous drainage catheter

Conversion to an internal metallic stent can be performed after initial decompression in certain circumstances.

Portal vein embolization (See chart, group 1)

A technique used before hepatic resection to increase the size of liver segments that will remain after surgery

This therapy redirects portal blood to segments of the future liver remnant, resulting in hypertrophy.

Transjugular intrahepatic portosystemic shunt (TIPS) (See chart, group 1)

Treatment of portal hypertension to decrease variceal bleeding and medically refractory ascites in the setting of cirrhosis

Once established, embolization of gastric and esophageal varices can be performed. The shunt can be titrated or occluded to compensate for changes in patient condition after placement.

GENITOURINARY TREATMENTS

Gonadal vein embolization (See chart, group 1)

Treatment of symptomatic testicular varices

Renal angiomyolipoma (AML) embolization (See chart, group 1)

Treatment of large (>4cm) renal angiomyolipoma to prevent future hemorrhage while sparing the normal renal parenchyma

Percutaneous Nephrostomy Access (See chart, group 2)

Placement and management of drains for various purposes.

- *Percutaneous nephroureteral catheter – tube is placed directly into the kidney and connected to an external drainage bag*
- *Occlusive nephroureteral catheter & ureteral embolization – temporary and permanent, respectively, complete urinary diversion not accomplished with simple nephrostomy drains alone*
- *Antegrade nephroureteral stenting – ureteral stenting and nephrostomy help restore urine flow through occluded ureters and return the kidney to normal function*
- *Conversion to trans-stomal nephroureteral drain – retrograde nephroureteral drain placed through a urostomy for treatment of urinary obstruction with a locking loop catheter to prevent migration*

THERAPEUTIC ASPIRATION TREATMENTS

Paracentesis (See chart, group 4)

Therapeutic or diagnostic removal of ascitic fluid from the abdomen

Standing orders can be placed by the managing provider to allow for easier and fast scheduling for patient comfort.

Thoracentesis (See chart, group 4)

Therapeutic or diagnostic removal of fluid from the pleural cavity

Standing orders can be placed by the managing provider to allow for easier and fast scheduling for patient comfort.

Aspira catheter (See chart, group 2)

Insertion of a tunneled, long-term catheter used to drain accumulated fluid from the pleural or thoracic cavity to relieve symptoms associated with effusion for patients under palliative care

The catheter enables the patient to perform intermittent drainage at home.

For additional information on our interventional radiology treatments and other imaging and testing services, call Bronson imaging services call center at (269) 341-6380.