DOWNLOAD PDF DIAGNOSTIC CATHETER-BASED VASCULAR ANGIOGRAPHY DEBABRATA MUKHERJEE

Chapter 1 : Diagnostic Catheter-Based Vascular Angiography | Thoracic Key

Diagnostic Catheter-Based Vascular Angiography Debabrata Mukherjee Angiography allows direct visualization of blood vessels in the body by the injection of iodinated contrast material via a catheter placed directly into the artery or vein.

Laura Davidson and Charles J. Davidson 5 Patient selection, preparation, risks, and informed consent J. Dawn Abbott and David O. Williams 6 Conscious sedation local anesthetics, sedatives, and reversing agents Steven P. Dunn 7 Vasopressors, vasodilators, and antithrombotics in the catheterization laboratory Tracy E. Macaulay and David J. Moliterno 8 Vascular access for percutaneous interventions and angiography Nay Htyte and Christopher J. Cardiac output, vascular resistance, shunt detection, and quantification Franz R. Eberli 10 Pulmonary hypertension: Hemodynamic assessment and response to vasodilators Myung H. Park and Vallerie V. McLaughlin 11 Valvular heart disease: Measurement of valve orifice area and quantification of regurgitation Blase A. Carabello 12 Hemodynamic assessment for restriction, constriction, hypertrophic cardiomyopathy, and cardiac tamponade Brinder Kanda, Mario Goessl, and Paul Sorajja 13 Endomyocardial biopsy: Indications and procedures Gregg F. Rosner and Garrick C. Normal, variants, and well-described collaterals John P. Hardegree, and Gregory J. Dehmer 17 Diagnostic angiographic catheters: Coronary and vascular Michael J. Lim 18 Coronary imaging: Angiography, computed tomography angiography, and magnetic resonance coronary angiography Joel A. Garcia Fernandez and John D. Rocchini 20 Cardiac catheterization for the adult with complex congenital heart disease Subrata Kar and Jorge R. Diez and James M. Use of pressure and flow measurements Morton J. Kern and Arnold H. Mintz, and Martin R. Bezerra, and Guilherme F. General principles Jack P. Chen and Spencer B. King 31 Guiding catheters and wires David W. Ricciardi 35 A clinical approach and comprehensive review of percutaneous revascularization of coronary chronic total occlusion Subrata Kar, Debabrata Mukherjee, and David E. Kandzari 36 Saphenous vein grafts Claudia P. Hochberg, Ion Botnaru, and Joseph P. Stent loss, coronary perforation, and aortic dissection Amir-Ali Fassa and Marco Roffi 39 Intra-aortic balloon pump counterpulsation and percutaneous left ventricular support Amirreza Solhpour and Richard W. Tops, Victoria Delgado, Dennis W. Murat Tuzcu, and Samir R. Naidu 46 Percutaneous closure of atrial septal defect and patent foramen ovale Fabian Nietlispach and Bernhard Meier 47 Pediatric and adult congenital cardiac interventions Sawsan M. Rizwan Sardar and J. Lookstein, and John H.

Chapter 2 : Download Cardiovascular Catheterization and Intervention PDF

2. Noninvasive Vascular Testing for the Diagnosis of Lower Extremity, Carotid, Renal Artery, and Abdominal Aortic Diseases Michael R. Jaff 3. Diagnostic Catheter-Based Vascular Angiography Debabrata Mukherjee 4. Magnetic Resonance Angiography in the Diagnosis of Vascular Disease Paaladinesh Thavendiranathan and Georgeta Mihai 5.

You should inform your physician of any medications being taken and if there are any allergies, especially to iodinated contrast materials. Also inform your doctor about recent illnesses or other medical conditions. You will be asked to remove some of your clothes and to wear a gown during the exam. You may also be asked to remove jewelry, removable dental appliances, eye-glasses and any metal objects or clothing that might interfere with the x-ray images. Women should always inform their physician and x-ray technologist if there is any possibility that they are pregnant. Many imaging tests are not performed during pregnancy so as not to expose the fetus to radiation. If an x-ray is necessary, precautions will be taken to minimize radiation exposure to the baby. See the Safety page for more information about pregnancy and x-rays. If you are breastfeeding at the time of the exam, you should ask your doctor how to proceed. It may help to pump breast milk ahead of time and keep it on hand for use after contrast material has cleared from your body, about 24 hours after the test. If you are going to be given a sedative during the procedure, you may be asked not to eat or drink anything for four to eight hours before your exam. Be sure that you have clear instructions from your health care facility. If you are sedated, you should not drive for 24 hours after your exam and you should arrange for someone to drive you home. Because an observation period is necessary following the exam, you may be admitted to the hospital for an overnight stay if you live more than an hour away. The equipment typically used for this examination consists of a radiographic table, one or two x-ray tubes and a television-like monitor that is located in the examining room. Fluoroscopy, which converts x-rays into video images, is used to watch and guide progress of the procedure. The video is produced by the x-ray machine and a detector that is suspended over a table on which the patient lies. The catheter used in angiography is a long plastic tube about as thick as a strand of spaghetti. How does the procedure work? Catheter angiography works much the same as a regular x-ray exam. X-rays are a form of radiation like light or radio waves. X-rays pass through most objects, including the body. Once it is carefully aimed at the part of the body being examined, an x-ray machine produces a small burst of radiation that passes through the body, recording an image on photographic film or a special detector. Different parts of the body absorb the x-rays in varying degrees. Dense bone absorbs much of the radiation while soft tissue, such as muscle, fat and organs, allow more of the x-rays to pass through them. As a result, bones appear white on the x-ray, soft tissue shows up in shades of gray and air appears black. When a contrast material is introduced to the bloodstream during the procedure, it clearly defines the blood vessels being examined by making them appear bright white. How is the procedure performed? This examination is usually done on an outpatient basis. A nurse or technologist will insert an intravenous IV line into a small vein in your hand or arm. A small amount of blood will be drawn before starting the procedure to make sure that your kidneys are working and that your blood will clot normally. A small dose of sedative may be given through the IV line to lessen your anxiety during the procedure. The area of the groin or arm where the catheter will be inserted is shaved, cleaned, and numbed with local anesthetic. The radiologist will make a small incision usually a few millimeters in the skin where the catheter can be inserted into an artery. The catheter is then guided through the arteries to the area to be examined. After the contrast material is injected through the catheter and reaches the blood vessels being studied, several sets of x-rays are taken. Then the catheter is removed and the incision site is closed by applying pressure on the area for approximately 10 to 20 minutes or by using a special closure device. When the examination is complete, you may be asked to wait until the radiologist determines that all the necessary images have been obtained. Your intravenous line will be removed. A catheter angiogram may be performed in less than an hour; however, it may last several hours. What will I experience during and after the procedure? Prior to beginning

the procedure, you will be asked to empty your bladder. You will feel a slight pin prick when the needle is inserted into your vein for the intravenous line IV. Injecting a local anesthetic at the site where the catheter is inserted may sting briefly, but it will make the rest of the procedure pain-free. You will not feel the catheter in your artery, but when the contrast material is injected, you may have a feeling of warmth or a slight burning sensation. The most difficult part of the procedure may be lying flat for several hours. During this time, you should inform the nurse if you notice any bleeding, swelling or pain at the site where the catheter entered the skin. You may resume your normal diet immediately after the exam. You will be able to resume all other normal activities 8 to 12 hours after the exam. A radiologist , a physician specifically trained to supervise and interpret radiology examinations, will analyze the images and send a signed report to your primary care or referring physician , who will discuss the results with you. What are the benefits vs. Benefits Angiography may eliminate the need for surgery. If surgery remains necessary, it can be performed more accurately. Catheter angiography presents a very detailed, clear and accurate picture of the blood vessels. This is especially helpful when a surgical procedure or some percutaneous intervention is being considered. By selecting the arteries through which the catheter passes, it is possible to assess vessels in several specific body sites. In fact, a smaller catheter may be passed through the larger one into a branch artery supplying a small area of tissue or a tumor; this is called superselective angiography. Unlike computed tomography CT or magnetic resonance MR angiography , use of a catheter makes it possible to combine diagnosis and treatment in a single procedure. An example is finding an area of severe arterial narrowing, followed by angioplasty and placement of a stent. The degree of detail displayed by catheter angiography may not be available with any other noninvasive procedures. X-rays usually have no side effects in the typical diagnostic range for this exam. Risks There is always a slight chance of cancer from excessive exposure to radiation. However, the benefit of an accurate diagnosis far outweighs the risk. If you have a history of allergy to x-ray contrast material, your radiologist may advise that you take special medication for 24 hours before catheter angiography to lessen the risk of allergic reaction. Another option is to undergo a different exam that does not call for contrast material injection. If a large amount of x-ray contrast material leaks out under the skin where the IV is placed, skin damage can result. If you feel any pain in this area during contrast material injection, you should immediately inform the technologist. Women should always inform their physician or x-ray technologist if there is any possibility that they are pregnant. Manufacturers of intravenous contrast indicate mothers should not breastfeed their babies for hours after contrast medium is given. However, both the American College of Radiology ACR and the European Society of Urogenital Radiology note that the available data suggest that it is safe to continue breastfeeding after receiving intravenous contrast. The risk of serious allergic reaction to contrast materials that contain iodine is extremely rare, and radiology departments are well-equipped to deal with them. There is a small risk that blood will form a clot around the tip of the catheter, blocking the artery and making it necessary to operate to reopen the vessel. If you have diabetes or kidney disease, the kidneys may be injured due to the contrast material. In most cases, the kidneys will regain their normal function within five to seven days. Rarely, the catheter punctures the artery, causing internal bleeding. It also is possible that the catheter tip will separate material from the inner lining of the artery, causing a block downstream in the blood vessel. Patients with impaired kidney function, especially those who also have diabetes, are not good candidates for this procedure. Patients who have previously had allergic reactions to x-ray contrast materials are at risk of having a reaction to contrast materials that contain iodine. If angiography is essential, a variety of methods is used to decrease risk of allergy: You may be given one or more doses of a steroid medication ahead of time. Contrast material without iodine may be used instead of standard x-ray contrast. Catheter angiography should be done very cautiouslyâ€”if at allâ€”in patients who have a tendency to bleed.

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Chapter 3 : Dr. Nay Htyte, MD â€“ New York, NY | Cardiology

Debabrata Mukherjee, MD, FACC Professional Bio: Debabrata Mukherjee, M.D., is the chair of the department of internal medicine and chief of cardiovascular medicine.

Laura Davidson and Charles J. Davidson 5 Patient selection, preparation, risks, and informed consent J. Dawn Abbott and David O. Williams 6 Conscious sedation local anesthetics, sedatives, and reversing agents Steven P. Dunn 7 Vasopressors, vasodilators, and antithrombotics in the catheterization laboratory Tracy E. Macaulay and David J. Moliterno 8 Vascular access for percutaneous interventions and angiography Nay Htyte and Christopher J. Cardiac output, vascular resistance, shunt detection, and quantification Franz R. Eberli 10 Pulmonary hypertension: Hemodynamic assessment and response to vasodilators Myung H. Park and Vallerie V. McLaughlin 11 Valvular heart disease: Measurement of valve orifice area and quantification of regurgitation Blase A. Indications and procedures Gregg F. Rosner and Garrick C. Normal, variants, and well-described collaterals John P. Hardegree, and Gregory J. Dehmer 17 Diagnostic angiographic catheters: Coronary and vascular Michael J. Lim 18 Coronary imaging: Angiography, computed tomography angiography, and magnetic resonance coronary angiography Joel A. Garcia Fernandez and John D. Rocchini 20 Cardiac catheterization for the adult with complex congenital heart disease Subrata Kar and Jorge R. Use of pressure and flow measurements Morton J. Kern and Arnold H. Mintz, and Martin R. Bezerra, and Guilherme F. General principles Jack P. Chen and Spencer B. King 31 Guiding catheters and wires David W. Ricciardi 35 A clinical approach and comprehensive review of percutaneous revascularization of coronary chronic total occlusion Subrata Kar, Debabrata Mukherjee, and David E. Kandzari 36 Saphenous vein grafts Claudia P. Hochberg, Ion Botnaru, and Joseph P. Stent loss, coronary perforation, and aortic dissection Amir-Ali Fassa and Marco Roffi 39 Intra-aortic balloon pump counterpulsation and percutaneous left ventricular support Amirreza Solhpour and Richard W. Tops, Victoria Delgado, Dennis W. Murat Tuzcu, and Samir R. Naidu 46 Percutaneous closure of atrial septal defect and patent foramen ovale Fabian Nietlispach and Bernhard Meier 47 Pediatric and adult congenital cardiac interventions Sawsan M. Rizwan Sardar and J. Lookstein, and John H.

Chapter 4 : Manual of Vascular Diseases

*Language: English ISBN: , LCCN: MeSH: Vascular Diseases/diagnosis*Vascular Diseases/therapy* Notes: Includes bibliographical references and index.*

Diagnostic Catheter-Based Vascular Angiography Debabrata Mukherjee Angiography allows direct visualization of blood vessels in the body by the injection of iodinated contrast material via a catheter placed directly into the artery or vein. It remains the gold standard to determine the severity and extent of peripheral arterial disease. Digital subtraction angiographic technology allows high-quality images using small amounts of contrast material. The field of angiography has grown tremendously in recent years, and today we have percutaneous methods for accessing virtually every artery in the human body. However, angiography is invasive and is typically indicated only in patients in whom revascularization is being considered. Typically for the purposes of endovascular intervention, the access site should be as close to the intended lesion as possible. The location of the lesion determines the access site in most cases, and approach to iliac occlusive disease is most commonly made from the ipsilateral femoral artery via retrograde common femoral artery CFA access. Lesions of the CFA, however, must be approached from a contralateral-puncture, axillary, or popliteal approach. For renal, mesenteric, and cerebral angiography, the typical access site is retrograde CFA. Retrograde Common Femoral Artery Access This is the commonest access site used for diagnostic angiography. The CFA is palpated below the inguinal ligament, which courses between the pubis and the anterior superior iliac spine. In individuals with severe peripheral arterial disease, the femoral pulse is often not palpable, and in those instances, ultrasoundguided approach should be used or an alternative access site should be used. In some individuals with severely angulated origin of the visceral vessels, that is, celiac, superior mesenteric, or renal arteries, brachial approach may make selective cannulation easier. Left brachial approach is preferable to minimize the potential risk of stroke, as entry from the right exposes both the carotid and vertebral arteries to risk of embolization. The risk of injury and thrombosis is significantly higher with brachial compared to femoral access. Popliteal Artery Access In individuals with occluded superficial femoral arteries, the popliteal artery may be cannulated for diagnostic angiography. Limitations to this access site include the requirement that the patient lies prone during the procedure and the difficulty in localizing the artery. Doppler-guided needle approach should ideally be used to access the popliteal artery. This access site is rarely used for diagnostic angiography and more commonly used for interventions. Many different contrast agents are available today for angiography. The two clinically important attributes of a contrast agent are its iodine dose and osmolality. To maintain good radiographic efficacy and safety, contrast agents must balance the somewhat paradoxical relationship between these two properties. Iodine dose refers to the amount of iodine delivered in an injected dose of contrast material. Visualization is typically improved by increasing the iodine load, a function of the percentage of iodine and the concentration of the compound present upon injection. Increasing the iodine load, however, results in increased osmolality. Osmolality refers to the number of dissolved particles in a solution or the concentration. Ideally, contrast agents injected into the vasculature should have an osmolality as close to that of body fluids as possible. Solutions with osmolality greater hypertonic or less hypotonic than that of body fluids can cause cells to shrink or swell, respectively, contributing to numerous hemodynamic, physiologic, and biologic adverse effects. The body also attempts to quickly dilute and excrete hypertonic solutions to maintain osmotic equilibrium. Therefore, the benefits gained from increasing the iodine load in contrast agents to improve radiographic efficacy may be offset by the adverse effects associated with higher osmolality solutions. The goal should be to use the lowest dose and volume of contrast necessary for adequate clinical angiography. Broadly, there are two types of agents, high-osmolality and low-osmolality agents. The major resistance to the use of low-osmolality agents used to be expense, but recent price reductions have made this a relative nonissue. High-osmolality agents are rarely used in practice now. Third-generation nonionic contrast agents reduce osmolality even further by creating a

dimer. Iodixanol is a dimeric contrast agent in this class and is iso-osmolal with plasma. Nonionic, low osmolal contrast agents are now routinely used for angiography. For diagnostic vascular angiography, we use an iso-osmolal agent iodixanol Visipaque, GE Healthcare, Little Chalfont, Buckinghamshire that has been shown to cause significantly less discomfort for patients and also significantly reduces the relative risk of developing contrast media-induced renal failure. Carbon dioxide has a limited role as a vascular contrast agent because of poor opacification of the vessels despite use of DSA. Lower Extremity Angiography Despite recent advances in the noninvasive evaluation of lower extremity vascular disease, contrast angiography remains the gold standard. This allows excellent visualization of the distal aorta and the origin of the common iliac arteries and the external iliac and the common femoral vessels. Angulated views are indicated to visualize the iliac and the femoral bifurcations without overlap. A left anterior oblique LAO 30 degrees view allows visualization of the left common iliac and right common femoral bifurcations without overlap. Following the pelvic aortogram, the pigtail catheter is withdrawn to the aortic bifurcation so that the injected contrast fills the runoff vessels bilaterally with minimal contrast diverted to the viscera. DSA with moving table and bolus chase technology to visualize the outflow Fig. The bolus chase technology combines the advantages of digital subtraction and step table technology. Mask images are obtained prior to acquisition of contrast images to further accentuate the arterial tree.

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Chapter 5 : Catheter Angiography Examination of the Body's Veins and Arteries

Note: Citations are based on reference standards. However, formatting rules can vary widely between applications and fields of interest or study. The specific requirements or preferences of your reviewing publisher, classroom teacher, institution or organization should be applied.

Bloggat om Cardiovascular Catheterization and Interv Lange and Steven R. Bailey 2 Setting up a catheterization laboratory: Organizational, architectural, and equipment considerations John W. Hirshfeld, Jr 3 Radiation safety Thomas M. Davidson 5 Patient selection, preparation, risks, and informed consent J. Dawn Abbott and David O. Williams 6 Conscious sedation local anesthetics, sedatives, and reversing agents Steven P. Dunn 7 Vasopressors, vasodilators, and antithrombotics in the catheterization laboratory Tracy E. Macaulay and David J. Moliterno 8 Vascular access for percutaneous interventions and angiography Nay Htyte and Christopher J. Cardiac output, vascular resistance, shunt detection, and quantification Franz R. Eberli 10 Pulmonary hypertension: Hemodynamic assessment and response to vasodilators Myung H. Park and Vallerie V. McLaughlin 11 Valvular heart disease: Measurement of valve orifice area and quantification of regurgitation Blase A. Carabello 12 Hemodynamic assessment for restriction, constriction, hypertrophic cardiomyopathy, and cardiac tamponade Brinder Kanda, Mario Goessl, and Paul Sorajja 13 Endomyocardial biopsy: Indications and procedures Gregg F. Rosner and Garrick C. Stewart 14 Pericardiocentesis Carl L. Normal, variants, and well-described collaterals John P. Hardegree, and Gregory J. Dehmer 17 Diagnostic angiographic catheters: Coronary and vascular Michael J. Lim 18 Coronary imaging: Angiography, computed tomography angiography, and magnetic resonance coronary angiography Joel A. Garcia Fernandez and John D. Rocchini 20 Cardiac catheterization for the adult with complex congenital heart disease Subrata Kar and Jorge R. Diez and James M. Saab 26 Carotid and cerebral angiography Robert D. Use of pressure and flow measurements Morton J. Kern and Arnold H. Mintz, and Martin R. Bezerra, and Guilherme F. General principles Jack P. Chen and Spencer B. King 31 Guiding catheters and wires David W. Ricciardi 35 A clinical approach and comprehensive review of percutaneous revascularization of coronary chronic total occlusion Subrata Kar, Debabrata Mukherjee, and David E. Kandzari 36 Saphenous vein grafts Claudia P. Hochberg, Ion Botnaru, and Joseph P. Carrozza 37 Emboli protection devices, atherectomy, and th.

Chapter 6 : - NLM Catalog Result

The primary editors, Drs Mukherjee and Rajagopalan, specialize in cardiology and radiology, respectively. The book is organized into two major sections dedicated to CT angiography and MR angiography. The CT section begins with fundamentals of CT scanning, followed by chapters on image reconstruction, radiation dosimetry, image postprocessing, and contrast agents.