

1. Interventional radiology is a medical specialization that involves performing a range of imaging procedures to obtain images of the inside of the body. The interventional radiologist carefully interprets these images to diagnose injury and disease, and to perform a range of interventional medical procedures. Sy Interventional radiologist use imaging techniques such as X-rays, MRIs, fluoro, and CT scans and ultrasounds. Interventional radiologists perform a broad range of procedures such as treating tumours, taking organ biopsies or placing stents by inserting tiny instruments and thin catheters into the body via an artery or vein. The images are used to guide the catheters and instruments to the exact area where the procedure or treatment is to be performed. This reduces the need for traditional or laparoscopic surgery as treatment can be given via a small plastic tube about the size of a straw. Continuing advances in technology mean the range of conditions that can be treated by interventional radiology is continuing to expand. I asked Dr. Hansra to give us a good overview of what IR is and how it is utilized.
 - a. Back to basics to diagnostics--interpreting xray, US, etc. provide diagnoses off of images.
 - b. Diagnose off of CT, MRI, and then can treat diseases.
 - c. Minimally invasive procedures-not surgeons, everything is percu, sub cu, iv
 - d. Spleen shattered--use fluoro, use contrast, and find it to embolize bleeding.
 - e. Various materials for embolization
 - f. Interventional oncology--not systemic chemo...IR goes through arteries, direct into tumors
 - g. Percu ablation--microwave tumors
 - h. OP settings
 - i. For patients that are sickest, IR is last resort.
2. As you would expect, I asked about the educational path for Interventional Radiologists? What all does it take to perform IR procedures and how did he decide on this career path. I refer to the idea that many radiation therapists just seem to 'know' that therapy is for them. Is this how it works for doctors who specialize as well?
 - a. Med school, then diagnostic, then IR
 - b. After 5 years of diagnostic, then 1 yr fellowship in IR.
 - c. Now students can apply directly to IR
3. Why IR? Xray first and then this is cool?
 - a. Debating few specialties, met mentor, no clue what IR was.
 - b. Start getting involved with procedures.
 - c. Under wing of mentor. US guided biopsy on pregnant woman.
 - d. Had we not done biopsy, wouldn't have found renal cell carcinoma.
 - e. Realized importance of imaging and hands on. Minimally invasive procedures.
 - f. Likes fast pace of trauma.

cutting off their blood flow. This was, of course, exciting information for me and I trust for you as well.

- a. Bleeders--renal cell, gyn...intraarterial injection to help with bleeding. Stop blood flow to tumor itself and then surgeon can take patient to surgery, minimal bleeding.
 - b. Kidney tumor--catheter with balloon and then injected alcohol and kidney necrosed. So much tumor.
 - c. Is it ever appropriate to cut off blood supply to tumor and let it die on its own?
 - i. Very vascular--direct little particles go deep in tumor, kill tumor so that it doesn't collateralize to nearby vessels.
9. We talked about other cancer therapies including a treatment for liver cancers or tumours that delivers millions of tiny radioactive microspheres or beads directly to the liver tumours. The majority of the beads are lodged in the outside edge of the tumour/s and the radiation has a direct destructive effect on the tumour itself and the vessels feeding the tumour. Destroying the vessels feeding the tumour means that the tumour/s can no longer be supplied with the nutrients in the bloodstream. Dr. Hansra explained the process and need for ablations, cryoablation and radiofrequency ablation, in the treatment of tumors.
- a. Options, liver tumors---dont need systemic chemo, percutaneous ablation direct into liver itself. Microwave, cryoablation, radiofrequency ablation
 - b. People on transplant list for liver--cant have too many tumors.
 - c. If new tumor pops up, can be ablated and won't lose space on transplant list
 - d. Chemo direct to tumor through access through artery.
 - e. Use diagnostic imaging to guide to tumor, provide chemo
 - f. Do this in conjunction with ablation, one day after
 - g. Radiotherapy-- put seeds or beads into tumor.
 - h. Not a lot of systemic side effects, very little hair loss, blood loss.
10. Many cancer patients are presented with the standard 3 treatment options: surgery, chemo, and radiation. How and where would a patient find out about other options including the interventional ones that we just discussed? Are these procedures primarily performed in larger teaching hospitals and centers or is there a way for patients to request more information on this type of treatment? The goal of this podcast is to open up new and relevant things and to educate us all a little better in the things that we may not even know that we don't know.
- a. Awareness--goal of podcast
 - b. Word of mouth
 - c. Clinicians that want best for patients
 - d. Not even enough awareness in medicine
 - e. Great relationship with oncologist, surgeons, obgyn...for best of patient.
 - f. Academic centers have large IR depts. Some parts of country dont know anything about it.
 - g. Talking to people.
11. Anything else?

Dr. Amrit Hansra_Interventional Radiology

- a. I want to thank Dr. Amrit Hansra for talking with me about interventional radiology, it's practices and treatments. I learned a whole lot on this show and I hope that you do too!