

CSI NIC Mid Term Meet: NIC 2024

SKILLSET AND TOOL KIT OF CHIP PCI AND IMPACT OF INTRAVASCULAR IMAGING IN CHIP PCI

Dr DS Chadha, Bengaluru

- Aging population along with growth of comorbidities will lead to expansion of the CHIP population.
- The CHIP program focuses upon higher-risk patients put on guideline-directed medical therapy, who have the most to gain.
- Need to have a successful CHIP program involving a wide range of specialists, clinical support staff, and administrative personnel.
- The ingredients of a successful CHIP program are: Specialists trained with advanced technical and cognitive skills, availability of the tools on the shelf and well-trained support staff.
- A well-run CHIP program is a “high-risk, higher reward” paradigm that will benefit a traditionally underserved patient population.

ANTEGRADE WIRE ESCALATION AND PARALLEL WIRE TECHNIQUE

Dr Gerald S Werner, Germany

- The antegrade approach is the basis of a successful strategy even in high Japanese chronic total occlusion (J-CTO) score lesions.
- If you cannot manage to advance an antegrade wire, you can neither escalate to retrograde, because you fail to make the wire connection or antegrade dissection and re-entry, because you cannot reach the distal cap within the vessel structure.
- The 20 mm limit for lesion length is rather historic than factual.
- Step down, whenever you make a steep/extra curve e.g., in the GAIA, change to a new one.
- Remember, tip shape is lost rapidly. So, reshape, whenever you get stuck.
- Parallel wire is a logical continuation of antegrade wire escalation.
- Wire manipulation is a basic skill of an interventionist. To manipulate a second wire along a first wire is even easier.
- To take out the “wrong” wire to change for another deprives you of the information already gained.

The parallel wire step should not take more than 10 minutes of your wire time. If it fails, move on.

- Always start with an antegrade wire first even in long lesions. The wire left in place is the road map to success. The presence of a wire modifies the vessel architecture, straightens the course for the second wire.

- PWT is quick, efficient, and successful.
- The first wire...straightens the vessel segment, fixes the distal cap and serves as a permanent marker for modifying the course of the second wire.

THE POWER WITHIN: INCLISIRAN AND ACHIEVING OPTIMAL LDL-C IN ESTABLISHED ASCVD RISK

Dr KP Pramod Kumar, Chennai

In patients with established atherosclerotic cardiovascular disease (ASCVD) risk, the “lowest is best” approach for low-density lipoprotein cholesterol (LDL-C) control is crucial. This concept, supported by numerous studies over the years, has shown that significantly lowering LDL-C levels substantially reduces the risk of future cardiovascular events. Traditional statin therapy alone often fails to reach these stringent targets, necessitating the addition of more potent lipid-lowering agents.

Inclisiran, which targets PCSK9 mRNA, has emerged as a powerful adjunct to high-intensity statin therapy. The ORION-10 trial has demonstrated that Inclisiran significantly reduces LDL-C and achieves 52% reduction from baseline levels in patients with established ASCVD risk. Its biannual dosing not only ensures sustained LDL-C reduction but also improves adherence. Incorporating Inclisiran into treatment regimens offers a promising strategy to meet the rigorous lipid goals necessary for high-risk patients.

HOW TO SELECT TECHNIQUE FOR BIFURCATION: OVERVIEW OF EVIDENCE AND PRACTICE

Dr Ajay J Swamy, Secunderabad

- Bifurcation stenting is resource demanding. Results are often less robust than nonbifurcation stenting.
- Anatomical considerations: Is this a significant side branch (SB)? Is this branch easy to win? Is it likely to close if the main vessel is stented? What is the

length of the disease in the SB? Is there significant calcium/thrombus? What is the angle at which it comes off? What is the distribution of plaque in the bifurcation?

- Clinical considerations: What clinical situation are we dealing with (acute coronary syndrome/myocardial infarction [ACS/MI], CSA/silent ischemia)? Are there any other comorbidities (specifically renal function, bleeding risk)? Plan procedure, establish dye limit, procedure endpoint.
- Conceptual considerations: Do we need the SB to merely stay open (LAD-D2, LCx-OM) or do we need an optimal result in the SB (left main [LM] bifurcation, LAD – large D2, LV dysfunction)?
- A provisional one-stent approach remains the most common treatment strategy for bifurcation percutaneous coronary intervention (PCI). Patient selection and meticulous procedure execution are key for acute and long-term clinical success.
- For simple lesions, one stent is always better if feasible. Layered provisional strategy offers best option to implement this strategy. It offers the option to upgrade to second stent to protect/salvage the SB and also use drug-eluting balloon, if feasible.
- For complex lesions, up front two stent strategy.
- Choose the strategy keeping in mind the available resources, expertise, lesion, and patient complexity.
- Try to choose the hardware that has the best chance of crossing in the first attempt.
- In complex lesions, outcomes are worse if two stents not planned. In LM bifurcation, two stents are better.

RETROGRADE COMPLICATIONS

Dr N Prathap Kumar, Kollam

- Vessel perforation is common in retrograde approach and is related to guidewire manipulation, equipment advancement over-the-wire, and balloon inflation.
- Causes of distal vessel perforation: Inadvertent excessive advancement of a guidewire into the distal coronary bed; stiff, tapered or plastic jacket guidewires.
- Collateral perforation – septal is mostly a self-limited event, often ending with drainage in one of the cardiac chambers and negligible clinical consequences. Septal hematoma and dry tamponade may occur.

- Epicardial collateral perforation can rapidly lead to tamponade irrespective of a previous coronary artery bypass grafting. Donor vessel occlusion may occur due to catheter-related injury (during equipment withdrawal or pulling on the retrograde guidewire) or donor vessel thrombosis (long procedures with much intraluminal hardware).
- To prevent donor vessel closure, retrograde approach should be avoided through diseased donor vessels unless PCI is planned ahead. Adequate position of catheter (not too deep) is essential. Position of the retrograde catheter should be confirmed upon guidewire externalization and during procedural steps performed on the externalized wire. Use an additional safety guidewire in donor vessel.
- To prevent aortocoronary dissection, use anchor techniques for catheter support rather than proceeding with deep engagement. Avoid expansion of the dissection plane. Stop injecting contrast.

Key Points

- All these complications can happen.
- Anticipating complications and taking care of them is important.
- Techniques to avoid perforation are: Using Suoh 3 wire with microcatheter without surfing, avoid corkscrew or multiple tortuous channels for wire crossing, excessive manipulation of wire.
- Keeping a safety wire in donor vessel is important.
- Checking ACT every 30 minutes to avoid thrombosis.

GUIDE CATHETER-INDUCED LMCA AND AORTIC DISSECTION: BAILED OUT BY REVERSE CK CULOTTE

Dr Vijayan Ganesan, Kerala

- Avoid deep engagement of the guide catheter.
- If dissection occurs, disengage the catheter and take gentle sinus angiogram to assess the extension. If ostium is involved, use Judkins catheter.
- Limit the angiogram shots.
- If ostium is involved, immediate stenting to seal the entry point is ideal.
- Right coronary artery (RCA) >> left main coronary artery (LMCA) (LMCA has more circular and spiral smooth muscle cells and abundant elastic fibers).
- If progression with hemodynamic instability, acute AR, cardiac tamponade: urgent surgery.

INNOVATION IN PERICARDIOCENTESIS COMPLICATION

Dr Vinay Kumar Sajja

- Right ventricular (RV) punctures can occur as a complication of pericardiocentesis.
- Conventionally open surgical procedures will be needed for RV closure.
- In high-risk surgical patients, a vascular closure device (angioseal) may be helpful in closing the RV puncture site.

CHALLENGING CASE OF SUCCESSFUL PCI OF OSTIAL LAD PCI VIA RETROGRADE EPICARDIAL IPSILATERAL COLLATERALS: SCARY 3-HOUR ROLLER COASTER RIDE ENDING IN THE CLOUD NINE!!

Dr Gaurav Chaudhary, Lucknow

- J-CTO 4 CTO cases are often difficult with lesser success rates.
- In calcified CTO, exteriorization of retrograde micro can be very difficult thus knuckle CART (controlled antegrade and retrograde tracking) and reverse Carlino technique can be used to create subintimal space for antegrade wire.
- Ipsilateral epicardial should negotiated very gently with Sion wire or Suoh 3 wire, which can negotiate acute bends safely.
- Ping-Pong technique may not be successful in calcified long segment as calcium obstruct retrograde microcatheter entry into guide.
- Ostial CTO with good interventionist collaterals are indications of primary retrograde approach, even ILC can be used.
- Failed antegrade CTO are indications of primary retrograde approach.

APPROACH TO BIFURCATION

Dr JS Dugal, Pune

- Provisional stenting is currently recommended as a default strategy for approaching bifurcation PCI.

- It must be kept in mind that the long-term clinical outcomes are mainly dependent on success of main branch (MB) stenting. Therefore, optimization of the result of the MB should be taken priority over the pre-eminence of angiography results in the SB.
- Regardless of the stenting technique, the initial step for a successful bifurcation of PCI strategy begins with a good understanding of bifurcation anatomy.
- The main points when assessing bifurcation anatomy include: assessment of three diameters of bifurcations, assessment of lesion, length and plaque distribution, and assessment of bifurcation angle.
- Appropriate sizing of the MB stent is important for securing favorable long-term outcome and should mainly allow avoiding mala position in proximal SB and scaffolding of SB ostium. Use drug-eluting stents according to the distal MB size. Around 8-10 mm should be kept proximal to the carina.
- Be familiar with maximum stent expansion and stent cell size to avoid SB occlusion and distal dissection.
- Periprocedural occlusion of a large SB, i.e., >2.5 mm has been recognized as a contributor to impaired post-PCI prognosis. The jailed wire has been shown to improve the rate of SB reopening in case of closure.
- The SB wiring prior to MB stenting acts as a marker of rewiring the SB. SB wiring reduces the angle thus setting a more favorable anatomical position for rewiring and advancement of the balloon. Jailed SB wiring may improve its patency after MB stenting.
- Elective SB wiring is recommended in all cases where the operator deems that SB is clinically important and always when treating true bifurcation disease. In case of clinical urgency after failed multiple attempts at SB wiring, a small balloon may be advanced over jailed wire between stent struts and vessel wall to facilitate SB opening.
- Jailed wire may act as anchor for deeper intubation of guide wire and increase support in case of difficult SB crossing.

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