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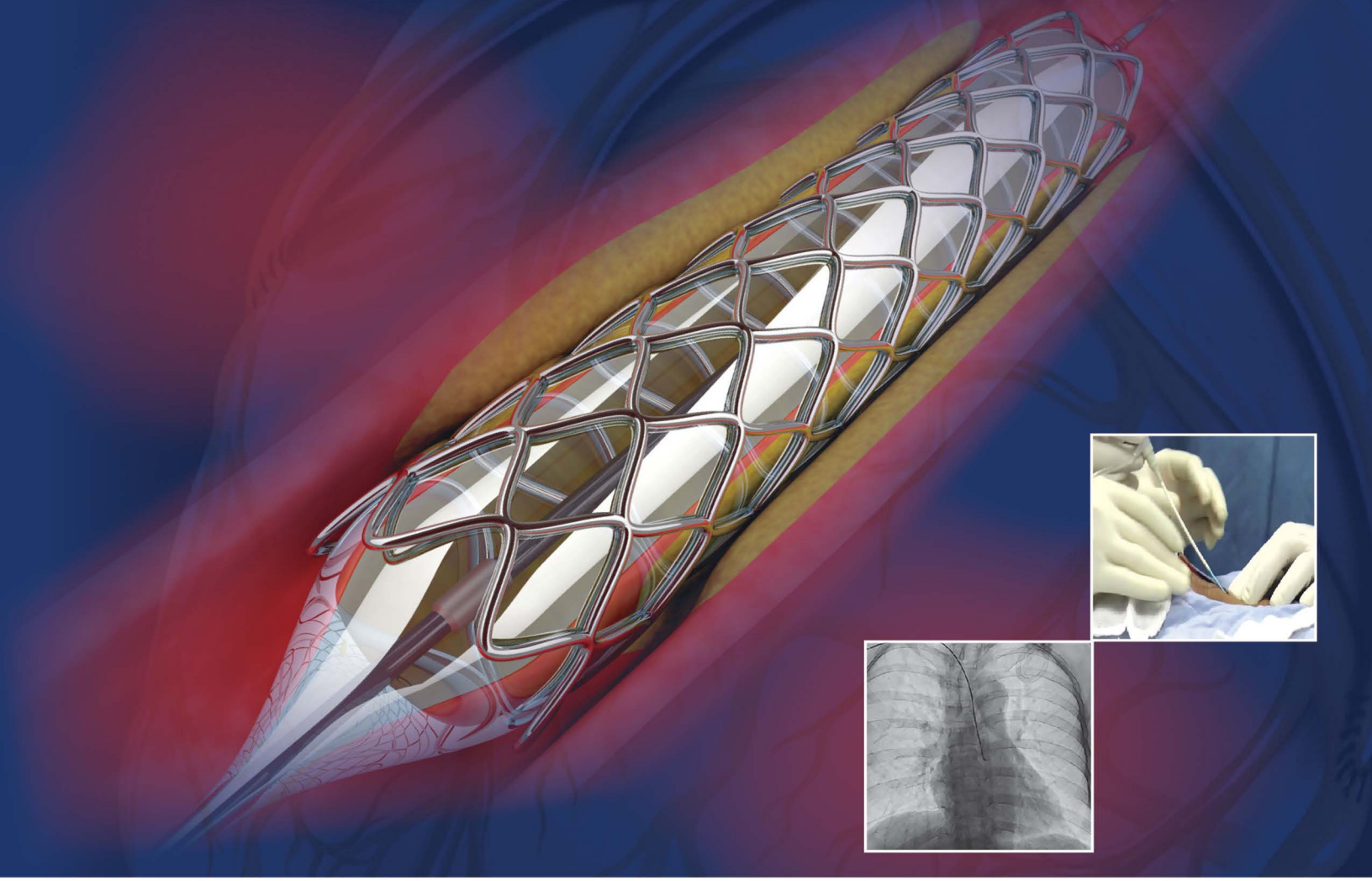
CORONARY ANGIOPLASTY

Evolved to Perfection



Jagdish S Hiremath

JAYPEE

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CHAPTER

4 Coronary Angioplasty for the Beginners

Jagdish Hiremath

INITIAL MUSINGS

Writing this chapter for beginners gives me immense pleasure because to follow the journey of a beginner to competency, is a joy of sorts. Like parents, teachers need to be alert and noninterfering; passing on the doctrine without curbing instincts and new ideas. A few pleasant parental guiding tips are all that are needed for a toddler to become a sprinter one day. The hand skills of angioplasty can be learnt and developed but the mindset of a coronary interventionist needs "special nurturing". It is the mindset that loses/wins many games for the him/her.

If you are reading this chapter, it is given that you are already on the path of the fascinating journey of coronary angioplasty. You either have recently qualified as a coronary interventionist or will do so in a few years. Let your enthusiasm, passion, hunger for knowledge and keenness to do a good job, remain unabated—even after many decades. The world's best operators do have the maturity of experience but what separates them from the rest is the "beginner" in them who is still alive within, even at the twilight of their careers.

When you begin your stint in the Cath lab as a student or as a young interventionist, think whether you would be able to do each and every job in the Cath lab, be it shifting an obese patient on and out of the table, calming an anxious patient, or doing a cardioversion. Reflect upon whether you can be a good second in command? Can you do the nurse's job of preparing hardware and setting the trolley or handle the console and do the technician's job?

SETTING THE TONE

It begins by doing simple things meticulously and flawlessly like arterial punctures, sheath removals, bedside echocardiograms and periprocedural pharmacological management. A few visits to the patient with the rehabilitation expert also help in expanding your horizon and making you into a complete coronary interventionist.

When observing a senior, junior or the world's best interventionist, observe everything, right from how prepercutaneous coronary intervention (pre-PCI) angiograms are studied, interaction with patients and relatives, hand scrub procedure, respect for radiation protection of patient and performers, economization of contrast and radiation. Observe how they treat each and every person in the Cath lab and how they use the changing room.

Be aware of how tempers get lost, how fear is hidden, how behaviors differ in simple and complex cases, how rules get trampled, how success gets celebrated and failure gets underplayed. Watch documentation and periprocedural management. It is also important to see how he looks after his own cardiac health and other personal aspects.

When you observe closely, each person can teach you something about coronary angioplasty, good or bad.

TAKE BACK AND APPLY

There is ample opportunity these days to observe live cases or recorded inbox video and visit higher centers as observer. It is very easy to get fascinated by the leading operators. On the way back from many conferences one returns dejected and disheartened seeing the enormous gap between what you see happening in the world and your own work. It is the same feeling when you see very expensive branded items in the world's best shops. But remember, world leaders have toiled hard to reach these heights. Instead of just getting plainly fascinated or dejected, jot down take home messages or points, that you can apply in your day to day practice. Finally everything matters in giving good results, including the work atmosphere and culture, finances and legal weather.

Categorize your observations into those that are relevant immediately and start using them. Retain the others which you think are important but you cannot apply today and set them aside for another day.

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DECISIONS GALORE

Every angiography needs to be viewed from various angles. The syntax score, calcium, tortuosities, ectasia, aneurysm, collaterals, area supplied by the concerned artery, viability of the myocardium, length of the lesion. These types of observations are all often discussed. These points are scientific; they are indispensable and should be on top of the discussion. But also of importance is to visualize the artery/lesion/coronary circulation before percutaneous transluminal coronary angioplasty (PTCA) is performed. Visualize/imagine your best result and your worst result (inadequate expansion/loss of side branches, failure to recross in bifurcation) for that particular anatomy.

Only if the possibility of a good result is significantly higher than failure, go ahead with angioplasty. In doing so think of the stents used, costs involved, ability to continue DAPT. Finally think of how the best acute result would look at the end of 6 months. If you are convinced in your mind that all the "negativities" are in single digit (less than 10%) your case to perform angioplasty is made. Think of the difference made to the patient by putting 6 stents with metal jacket/two stents for criticality/surgery before taking the call. Debate this in your mind and discuss with seniors. Such observations will also differentiate between the decision to do a simplistic inferior job or a complex complete job. Numbers, finances, individual pride and ego have no role to play in this decision making process. All should aim at a perfect result but sometimes attempting an anatomically perfect result can spoil your painting [Excessive post dilatation leading to rupture).

In short, visualize the coronary angiography anatomically, clinically with risk benefit ratio, cost effectiveness and then come to a conclusion and decision. Remember we are not mere cosmetic plumbers. The procedure is performed (or not performed) to give decent acute and long-term "clinical" result. If a young interventionist is not confident of performing a distal left main bifurcation with low syntax score, involving a competent senior should be preferred over surgery.

BEYOND HAND SKILLS

Coronary angioplasty, unlike many other medical procedures is performed in the brain as the "what to do" is dominates over the "how to do" in coronary angioplasty.

A person with even average hand skills complimented by a sound thinking mind is better than a person with a superb hand but an average brain. If your decision to perform PTCA is sound, your homework adequate, your hardware selection perfect, most intervention would be successful with average hand skills. A scientifically resilient thought process (of plan B and C) will win you some more games. Of course, if these are coupled with exceptional hand skills, you become a world leader.

Observing lives cases with a panel of experts gives the opportunity to know different thought processes. All the thoughts are based on science and their variation explains one the vagaries of PTCA. Many times panelists give better suggestions than what the main operator has thought of, because performer is engrossed in performing. This highlights why it is mandatory to go into a case with full mind preparations and covering all your tracks.

A beginner may be short of experience but need not be short in theory. Case by case reading or reading for a proposed case will be of immense help. One becomes a practical genius only after going through the beginning stages as a theoretical idiot. Many good operators are not good in theory but that does not mean you can be successful without studying hard. Whatever knowledge you get by reading is your weapon in every case. Knowing in depth about hardware, nuances of every aspect, makes you a better performer. Knowledge about medicolegal aspects also is available at touch of a button. The younger tech-savvy generation should be very quick with statistics, guidelines, recent updates because unlike in the earlier days, these need not be known by heart or remembered.

Coronary angioplasty is a field which tests the operators' mettle in many ways. It is not enough to be a nonemotional smoothly operating professional who goes about his job like a mathematical task. One has to be a sensitive human who will be aware of the pain, cold or the full bladder that an awake patient feels. Utmost respect to tissues must be nurtured to prevent preventable complications. Growth of the interventionist as a human being (physical, mental, social, spiritual and financial growth) helps him becoming complete.

Apparently highly technical decisions can get influenced by the "background music" (background of the person) in the mind of the operator. A little above average intelligence, good hand skills, clear eyes, empathy in heart makes a world leader in this field, not just a technocraft.

WELCOME TO A FASCINATING WORLD

Welcome to this fascinating world of coronary angioplasty. Pursue your journey with the innocence of a child and let the child remain intact always. Follow science for correctness and learn from personalities about successful incorrectness. Coronary angioplasty is a supreme field of the science and art of medicine and often is ridiculed as the commerce of medicine.

Your efforts and toil of many years long training has earned you this privilege of being a interventional cardiologist. Approach this task with utter sincerity, humility backed by a solid scientific mind and one day you will be scaling new heights!

REFERENCE

The book of experience!

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CORONARY ANGIOPLASTY
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Coronary Angioplasty: Evolved to Perfection is a versatile book. It can be a textbook for a cardiology student and a reference book for the practicing interventional cardiologist. As it has varied and rich contributions from various national and international experts, varying thought processes and writing styles, it offers multiple flavors of scientific material. Coronary angioplasty is almost at its perfect best, yet it is a work in progress, hence some of the information may get outdated with changing evidences.

Cardiologist's and cardiac surgeon's perspectives of multivessel angioplasty and approach for the young interventional cardiologist, are proud deviations from the routine. All and all, this book is likely to find place in the heart of every thinking interventional cardiologist.



Jagdish S Hiremath (known as JSH in cardiology circles), is the Director, Cath Lab; and, a Senior Interventional Cardiologist, Ruby Hall Clinic, Pune, Maharashtra, India, with pioneering work in coronary angioplasty in India. His relentless journey of coronary interventions, since 1986, is also laced with wholesome cardiology practice, including prolific preventive work. He had a brilliant academic career peaking at the gold medal of Mumbai University in DM in Cardiology. He was the Principal Investigator for RE-LY (Dabigatran), OASIS (Fondaparinux), and TIPS (Polypill) trials to name a few. He has extensively traveled all over the world and has delivered nearly 3,000 lectures so far.

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