



# Cardiac Bypass Surgery – A revolution through decades



**C**oronary Artery Bypass Graft Surgery (CABG) was first performed in India in 1975 which is 13 years after its advent in 1962. In the year 1990 some 10,000 CABG surgeries were done annually in India. The numbers of bypass surgeries have increased now and presently the annual number is about 60,000 according to industry source. In the absence of a central registry, the exact numbers may not be apparent. But with the increase in number of surgeries, India has also seen an average good track record of success and survival rate. Today when we look back we find that the cardiac cases treated by surgeries are much more complicated and risky but with the advancement of technology and experience of the doctors the success stories are many to share.

We happen to talk to Dr. Bhupesh D. Shah, one of the leading Cardio Vascular & Thoracic

Surgeon in Gujarat to understand the new trends and development in Cardiac Surgery.

According to Dr. Bhupesh D. Shah, “The overall health care scenario in India has changed and today we stand at par with the West in terms of expertise and technology. Some 15 years back, Cardiac Surgery was seen as a life threatening surgery and there were very few doctors who specialized into it and very few hospitals doing it in India. In all these years the volume of cardiac patients has increased in India and technology has developed proportionally to take care of it. The increasing volume has resulted in chiseling the skills of the Cardiac Surgeons and today they have experience at par with their Western counterparts.”

He further stressed on the outcome and result keeping in mind the volume. He said, “The success rate of cardiac surgery today is



Dr. Kaushik Goswami

Dr. Vihar J. Shah

Dr. Bhupesh D. Shah

Dr. Abhishek Parmar

Mr. Nira| Chasta

Dr. Hitesh Patel

95 – 97 %. The mortality rate has dropped down drastically to 2.8 % which is at par with the west. Today we can claim that our expertise, our outcome, our technology and our infrastructure is no less than others and it is evident in the number of foreign patients visiting India for treatment. Each year between 48,000 to 1,28,000 children are born in India with congenital heart diseases. There are more than one million rheumatic heart diseases in India and 50,000 new episodes are added every year. If we go by the numbers an estimated over 1,00,000 valve replacements have taken place during the last two decades. Every city and every hospital has a success story to tell. In 1994 the Organ Transplant Act was passed but its impact is minimal with only 50 heart transplants in India. With the corporatization of the Hospitals, the new technology and best infrastructure was made available to the doctors. The public hospitals need to be upgraded to walk at pace with the private hospitals.”

Talking about the technological advancements, Dr. Bhupesh D. Shah said, “ There has been a drastic improvement in the instrumentation used in the cardiac surgery. Ours is a multi disciplinary specialty involving the organs and blood vessels (Veins, Arteries & Capillaries). Our procedures range from traditional open heart surgery to minimally invasive surgeries. Today the surgeons have the choice of instruments based on their convenience. Right from shape of the handle to the metal surface and weight everything is variable. For example some surgeons specially for the micro surgery pick light instruments. Vessel clamps which are used to temporarily interrupt blood flow have fine widthwise and longitudinal serrations whereas some have non-traumatic (also referred to as atraumatic) and have two types of jaw pattern. They have angled jaws of different sizes. These variety of clamps were not available in the past. The cutting devices in the surgery are also revolutionized. Ports & Ditrech scissors are very delicate and very sharp to cut delicate soft tissues. The tips of these scissors are available in different angles. New types of punches are available to create a hole in the walls of aorta. It is an important instrument in any modern bypass surgery. The new needle holders are used for passing 5/0 to 7/0 swedged on sutures. They are spring

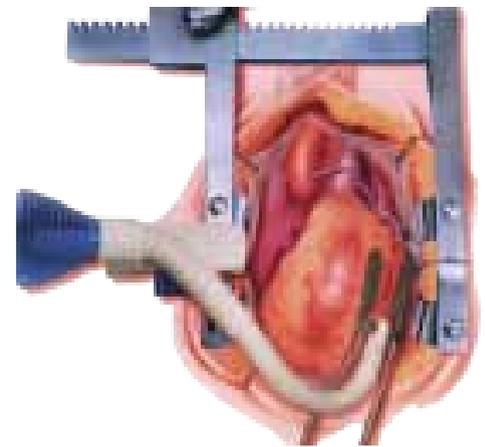
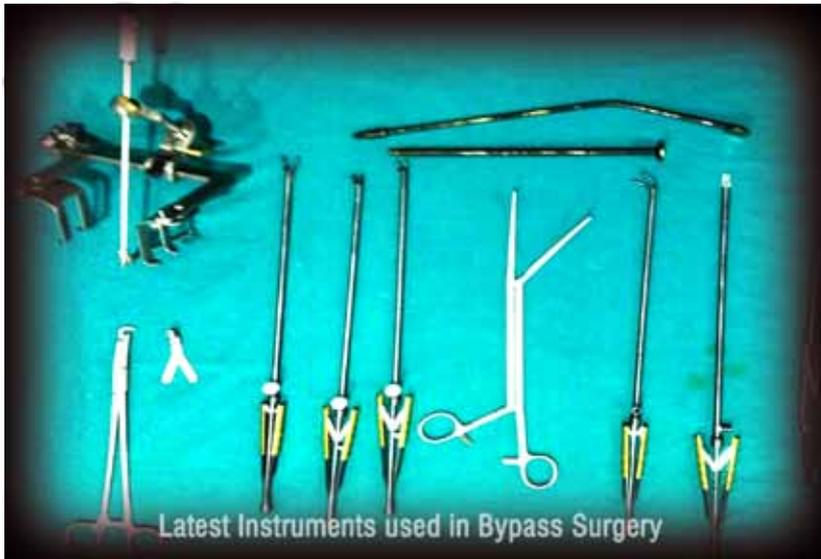


## HEART-LUNG MACHINE

loaded and the jaw patterns may be smooth or serrated with straight or curved tips. Vascular Dilators are available in different sizes ranging from 0.5 mm to 5.0 mm The traditional forceps are replaced by DeBakey patterned forceps. Over and above, all the powered instruments including sternum saw is operated by batteries, electricity or compressed air. Sternotome has reciprocating saw blades that move back and forth and is more powerful. Automated Defibrillator Paddles make the open heart surgery more safe these days.

Dr. Bhupesh D. Shah further added, “Today we have a Hybrid Operation Theaters which combines the normal operation theater with the cath lab. To make the surgery simple and give best results, surgeons and cardiologists are performing Hybrid procedures on the patients, which is the combination of surgery and cath lab procedures. The outcomes are marvelous because we avoid surgery where plasty can be used and as such the recovery of the patients is also fast.” Dr Bhupesh further added that “With the coming of hybrid operation theaters the entire infrastructure of the normal operation theater has changed. Today we have better operation tables enabling multi tasking, better lighting in the theater, better monitors and other gadgets to aid in the surgery. IAB Pumps, Intra Aorta ballon pumps, Heart Lung machine, Throng Intra-Operative Hemo Dynamic monitors and Cardiac Output monitors have helped the surgeons to monitor the health of the patients in post operative care. In complicated cases it comes as a boon in saving the lives of the patients.” Elaborating more on the





techniques in surgery, Dr. Bhupesh added “Minimally invasive heart surgery (also called keyhole surgery) is performed through small incisions, using specialized surgical instruments. The incision used for minimally invasive heart surgery is about 3 inches instead of the 7-8-inch incision required for traditional surgery. The advantages are less blood loss, less hospital stay, less painful, less chances of infection and the scar is too small to be visible. It can be cosmetically removed also. Total Arterial Bypass Surgery is also performed by leading surgeons in which all the bypass grafts are arterial giving better long time effects and effective results.”

We also had a talk with Dr. Vihar Shah who is an anesthesiologist in the team of Dr. Bhupesh D. Shah about the pre surgery anesthesia. Dr. Vihar Shah said, “The equipments used in the anesthesia in cardiac surgery is highly advanced today. The anesthesia agents are less toxic with minimum myocardial depression effect. It gives very good post operative effect. Today Anesthesia Gas Module is also used which is

very effective and safe.”

In India Cardiac surgery has evolved and advanced which has resulted in improved and durable outcomes in a higher risk population. Today patients have surgical options for cardiac diseases traditionally treated with medical therapy. One of the major advances in coronary revascularization has been the development of beating heart bypass surgery. The surgical management of heart failure is rapidly advancing with the options of passive and active constraint, ventricular restoration and biventricular pacing. The post operative care has also seen a revolution where hospitals now have dedicated CTSICU (Cardio Thoracic Surgical Intensive Care Unit) where trained nursing staff and medical registrars take round the clock care of the patients. The CTSICU is equipped with latest and state of the art ventilators and monitors. They have Invasive Pressure Monitoring & EtCo2 Monitoring. The hospitals run on the international standards to avoid any infections in the patients.

# AASHRAY CLINIC

114, Span Trade Centre,  
Opp. Kocharab Ashram,  
Nr. Paldi Cross Road. Paldi,  
Ahmedabad-7. Gujarat (INDIA).  
Ph. 079 26577914 ;  
E Mail : bdshah66@yahoo.com