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Intravascular Lithotripsy breaks up problematic hard blockage in coronary arteries

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Launched by Shockwave Medical, USA, its an innovative technology that generates sonic pressure waves to break up problematic calcium so that artery can be opened with ease

Dr. Ashok Seth, Chairman Fortis Escorts Heart Institute and his team performed the first case in India using Coronary Shockwave Lithotripsy to open a very difficult and hard calcified blockage in a 70 year patient with a heart attack.

Shockwave Intravascular Lithotripsy is a novel Procedure brings hope for those suffering from an advanced form of coronary artery disease (CAD) having angina or heart attack in which the blockage becomes very hard due to deposit of calcium. This happens in 20% - 25% of the patients especially those who are elderly, diabetic have chronic kidney disease, have long standing blockages or previous bypass surgery. Previously to tackle this heavily calcified blockage there were only drills called Rotablator or ultra-high pressure balloons which are difficult to use and carry risk of rupturing the artery.

Launched by Shockwave Medical, USA, its an innovative technology that generates sonic pressure waves to break up problematic calcium so that artery can be opened with ease and blood flow restored with the placement of a stent. The therapy leverages a similar minimally invasive approach that has been embraced by physicians for decades to treat kidney stones, which are also made up of calcium.

Dr. Ashok Seth, Chairman, Fortis Escorts Heart Institute, New Delhi said, “We are happy to be the first to offer this innovative technology to the benefit of the numerous patients in India undergoing angioplasties. Hardened calcified blockages are a big challenge to treat by angioplasty and stents and is getting commoner. Such blockages can now be opened with ease and safety to give patients the best results for long term. The sonic pressure waves produced when performing Intravascular Lithotripsy give us a novel, safe and proven treatment option to break up the calcified plaque, with potentially less risk of injury to the artery compared to other treatments.”

Dr. Jonathan Hill, Head of Department of Cardiology, King’s College Hospital, London, who has the highest experience with this therapy in the world, was present with Dr. Seth during the first case.

He added, “This is a path breaking therapy which is revolutionizing the treatment of hard plaque in Coronary arteries world over and I am glad that this is now available in India to patients in India. This will bring hope for many patients whose arteries could not be opened by balloon angioplasty because of calcium build up and were considered for Bypass Surgeries or left on medical management.”

Calcium slowly develops and progresses to its hardened, bone-like state over the course of several decades of cellular growth and death in diseased plaque within the heart arteries. While it is slow to develop, its impact is immediately encountered when performing procedures in calcified lesions. The calcium’s hardened structure restricts normal artery movement and makes the rigid arterial tissue resistant to traditional balloon therapies that have been designed to compress the plaque within the artery wall to restore normal blood flow. For these reasons, the presence of calcium increases the complexity of most cases and decreases the effectiveness of most treatments.

Gurmit Singh Chugh, CEO, Translumina, partners of Shockwave Medical for India said, “Indian is amongst the 10 countries where this therapy has been launched and we are happy that Indian patients now may not need to travel abroad to get IVL.”

Intravascular Lithotripsy uses a small generator to produce therapeutic sonic pressure waves from a catheter that is threaded through the arterial system to the site of the blockage. The pressure waves pass through the soft vascular tissue, preferentially disrupting the hardened calcified plaque inside the arterial wall by creating a series of micro-fractures. After the calcium has been modified, the artery can be expanded using a low-pressure balloon and a stent, thereby enabling even historically challenging CAD patients to be treated effectively with minimal injury to the vessel.