



## **Ortho-One Orthopaedic Speciality Centre**

September 2019

### **3D Virtual Planning And Model For Acetabular Fracture - Our Experience**

Ortho-One Hip Specialist, Dr. Yuvarajan has a special interest in 3D printing and its applications in fracture management as well as in Joint Replacement. He shared his experience in the acetabular fracture case which he managed with 3D printing technology.

Acetabular fracture occurs primarily with young adults as a result of high-velocity trauma. The treatment of acetabular fracture remains one of the most challenging tasks that orthopaedic surgeons face even today because of its complex anatomy, limited surgical access to fracture sites, and postoperative uncertainties.

For an excellent outcome of fracture reduction, the surgeon has to know the precise anatomy and type of fracture after examination of the plain films as well as the CT Scan. Contouring plates and planning screw length during the operative procedure may not be accurate enough and could significantly prolong the operation time. Therefore, it is necessary to prepare custom-made plates and screws for each patient prior to surgery.

Ortho-One used 3D printing technology to produce actual size 3D models for surgical simulation. The technique in combination with computer-assisted virtual surgical procedures allows surgical simulation of complex acetabular fractures more economically and efficiently. The patient's pelvis was scanned by computed tomography (CT).

The CT scans were saved as DICOM files and then uploaded into 3D slicer following which it was converted into STL file. The STL file was

then uploaded in the 3D blender to form a 3D virtual model. Each fractured fragment was assigned a different colour as an independent object, followed by reconstruction of the fractured acetabulum models.



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## **Doctors helped me win “Hurdles”**

Ms. Aarthi who underwent a surgery for her tibia fracture by Dr. David V. Rajan and Dr. Santosh Sahanand on November 2016 visited Ortho-One on September 2019 to share her happiness with us.

Ms. Aarthi states “In spite of my busy schedule, I came to Ortho-One to thank the Doctors who enabled me to win my medal. I recently took part in the Senior State National Athletic Championship meet held on August 2019 in Vahini PAC Ground, Lucknow and won a Silver Medal in the 400 Meter Hurdles. On August 2019, I also took part in The Tamil Nadu Senior State Athletic Championship held at Anna Stadium, Trichy, and created a new record in the 400 Meter Hurdles and won a Gold medal. I was able to finish my run in 1.0073 seconds. I also took part in 4\*100 Meter Relay and



4\*400 Meter Relay and won the third place. I never thought that I will be able to run after my surgery. I am always thankful to David Sir and Santosh Sir. My heartfelt thanks to the Physio team too. Next month, I will be participating in the Open Senior National Athletic Championship in Ranchi”

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## Outreach Programme

### Veterans meet

The District Veterans Athletic meet was held at the Nehru Stadium Coimbatore on 29th September (Sunday), 2019 between 7:30 AM to 7:00 PM. More than 600 Athletes above 35 years of age participated in the various events.



The Chief Guest, Mr. Walter Devaram distributed the prizes for winners. Mr. Titus (Physiotherapist), Ms. Revathi (Physiotherapist), Mr. Vipin (Staff Nurse), and Mr. Jeyamurugan (PRO) were all part of the Medical Team.

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