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Cobalt chrome rods versus titanium rods in the surgical correction of spinal deformities

Pier Paolo Mura

Sapienza University of Rome, Italy

The main objective of the surgical treatment of serious adolescent idiopathic scoliosis is to obtain a good balance correcting a vertebral scoliotic column and stabilize the correction obtained. To obtain the better correction and stabilization, it needs to employ very important strengths. The first biomaterials used in this kind of surgery were stainless steel but the major disadvantage was the impossibility to perform an MRI. Later it is used as a titanium rod which is softer and more ductile with loss of correction. From some years, we are always using more cobalt chrome rods with the same resistance of stainless steel but compatible with MRI. We operated 80 patients from 2010 till 2014 for serious idiopathic scoliosis. Using cobalt chrome rods, we make comparison with a group of 50 patients operated for similar pathology with titanium rods in the period from 2005 till 2009. We evaluated better correction in the coronal and sagittal plane with CC rods and better balance of the spine. Beyond biomechanical test we think of better balance could reduce mechanical stresses above and below the implant.

Biography

Pier Paolo Mura is an Orthopedic Specialist in scoliosis and an expert in spinal surgery. He also serves as a Professor at La Sapienza University of Rome, Polo Pontino and Chair in Orthopedics contract. He is specialized in Orthopedics and Traumatology and diagnostic radiology. He is the Director of the Department of Orthopedics and Founder and Director of the Unit Complex Spine Surgery Center and Scoliosis Surgery Section. He is the Head of Unit of Orthopedics and Regional Delegate of the Italian Society of Spine Surgery GIS (Italian Scoliosis Group) as well as an active member of SRS (Scoliosis Research Society). He is also Scientific Director of the research project on biomaterials in spine surgery at the Science and Technology Park in Pula.

pierpaolomura1@gmail.com

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