Total Hip Replacements

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It is estimated that approximately 250,000 to 400,000 primary total hip replacements are performed in the United States each year. Hip replacements can be fixed to the bone using special epoxy cement called polymethylmethacrylate or, using another technique called cementless total hip replacements. The majority of the hip replacements currently use cementless fixation or what is called biologic fixation, which allows the bone to grow into or onto the surface of the prosthetic components. This phenomenon is known as biologic fixation. Implants are press fitted into the femur and acetabulum socket in a stable fashion, allowing immediate implant stability at the time of surgery and then, subsequent development bone ingrowth will occur. The lining of the joints usually has a plastic socket (high density plastic or Teflon) that moves with a cobalt chrome head. This is the new bearing or surface, which allows painless range of motion and movement.

The modern era of total joint arthroplasty began in 1960 with the development of the total hip replacement consisting of a stemmed stainless steel replacement of the femoral head articulating with the high density of plastic implant. Both components are fixated with special polymethylmethacrylate cement. The goal of total joint replacements is simple, that is, to relieve pain, provide motion with stability and correct any deformity. Total hip replacement is indicated in individuals with painful or disabling arthritic joints that are no longer responsive to non-surgical treatment. We can correct painful hips, limb length inequality, and limited motion with the current state of the art hip replacements.

In the early 20th century biologic and inorganic materials for hip replacement became popular. Initially there were certain body tissues used to eliminate painful hips. Gold foil was tried in 1912, molded hip replacements were tried in 1923 and glass material was also tried. Next, more durable material such as pirax or bakelite, were tried, but had severe foreign body reactions. Then, vitallium was used followed by metal on metal. Unfortunately due to patient, or wife complaints of squeaking, this lead to the advancement of acrylic cement for fixation of high density plastic sockets and the metal components glued to the bone. This was very successful in the early 70's. It started initially in England and Europe and was introduced to the United States in the early 70's. With the advancement in technology we have improved the implant fixation, achieving biologic fixation as well as better wear characteristics regarding the articulating surfaces. Presently, we have high density polyethylene which improves the results by decreasing the wear. We currently have 95 percent good and excellent results performing hip replacements. We also can correct deformity, restore range of motion, add stability, and restore limb length inequality problems. There are potential complications associated with this surgery but the benefits easily outweigh the risks.