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## Complications after THR

As with any major surgery, there are potential risks involved after Total Hip Replacement surgery. Even though the incidence of complications after Total Hip Replacement are small, however, their significance is high for both Patient as well as surgeon, considering the complexity of the procedure. The decision to proceed with any surgery is made because the advantages of surgery outweigh the potential disadvantages. It is important that you are informed of these risks before the surgery takes place.

**Complications** can be medical (general) or local complications specific to the Hip.

**Medical Complications** include those of the anesthesia as well as your other illness related, almost any medical condition can occur so this list is not complete. Few of them include:

- Allergic reactions to medicines
- Blood loss requiring transfusion with its low risk of disease transmission
- Heart attacks, strokes, kidney failure, pneumonia, bladder infections
- Complications from nerve blocks such as infection or nerve damage
- Serious medical problems can lead to prolonged hospitalization or rarely even death

### Local Complications

#### Infection

Infection can occur after any operation. Infection rates after joint replacement surgery is very low (approximately 1%). Being a foreign body artificial joints are always at more risk of infections especially with any dental work or other surgical procedures where germs (Bacteria) can get into the blood stream and find their way to your implant.

Lot of precautions is taken before & during surgery to prevent this complications, which includes preoperative part preparation, blood test & urine test, Antibiotics, Sterile operation rooms with laminar airflow etc. Patients with Diabetes, Rheumatoid arthritis, Psoriasis, Renal & Hepatic Compromised patients, HIV patients, h/o past infection like TB, Chronic urinary tract infection, etc. are at a higher risk for developing postoperative infections.

Early infections, low virulence infections can be treated with antibiotics, but may require further surgery like surgical debridement (joint cleaning) if they do not respond to antibiotics. If infection persist or gets aggravated in spite of adequate

antibiotics / joint cleaning then your artificial joint may need to be removed and replaced by cement antibiotic spacer to eradicate infection.

If you have any unexplained pain, swelling, or redness in the operated knee joint, you should consult your surgeon as soon as possible.

### **Blood Clots (Deep Venous Thrombosis)**

Blood clots in the veins of the legs are one of the most common complications of hip replacement surgery. They can form in the calf veins and can travel to the lung (Pulmonary embolism). Pulmonary embolism is serious and even life threatening complication. It is treated with medicines to dissolve it. Adequate precautions are taken before & after surgery to prevent them from occurring; like LMWH (medicines), Aspirin, Calf pumps, early exercises, Stockinet's etc. Blood clots can occur despite all these precautions and are usually not dangerous if appropriately treated. If you get calf pain or shortness of breath at any stage, you should notify your surgeon immediately.

### **Leg length Inequality**

The length of the leg may be changed by the surgery and sometimes very difficult to achieve right length during Total Hip Replacement Surgery. Sometimes the leg will be deliberately lengthened in order to stabilize the hip or to improve muscle function. Sometimes leg length are equal, however pelvis is tilted because of long standing deformity, and in the first weeks after surgery, most patients complain that the operated leg feels "too long". This is an artificial sensation, which will resolve itself over a few months. Shoe lifts may be necessary if the difference is more than a quarter of an inch. When the leg is more than four cm short to begin with, it may be impossible to equalize the legs for fear of damaging the nerves to the legs (Sciatic Nerve). Revision surgery may be required if leg length inequality bothers you persistently.

### **Dislocation**

Dislocation means that the metal ball slips out of the plastic socket. Not an uncommon problem after hip replacement and every surgeon faces this problem. Large number of factors is responsible for this complication. Most important thing is to prevent dislocation after surgery. It is much less with the current use of large diameter of metal femoral head during total hip replacement. Please carefully follow the instructions given to you during your stay. The physiotherapist will also teach you what positions to avoid, and how to safely use your hip replacement during this early phase of your recovery.

If the hip does dislocate, reduction is done under anesthesia. The incidence of dislocation is higher in Revision hip replacement surgery.

### **Aseptic Loosening**

It is the most common long-term complication of total hip replacement surgery. Loosening of the prosthesis from the bone is the most important long-term problem. Current generations of implant have good survivorship. Good surgery, choice of

correct implant with proven design and good survivorship, maintaining good quality of bone & muscle, maintaining weight and avoiding high impact activities are some of the factors which delay this complication. Revision Total Hip Replacement surgery is the ultimate solution.

## **Wear**

It is another common long-term complication of total hip replacement surgery. The plastic liner is the weakest link in the implant and will eventually wear out over time. Wear of the Plastic Polyethylene Socket starts from the day of surgery. Current generations "Cross-linked" polyethylene promises a wear rate about half that of previously used non cross-linked polyethylene. Plastic wear against a Ceramic ball and Oxinium ball is much less in the lab. Ultimately surgery will be required to change the worn polyethylene cup if there is no Aseptic Loosening of the implant.

## **Damage to Nerves and Blood Vessels**

It is an exceedingly rare complication. Nerve injury is more common than blood vessel injury. Total damage to the nerve may not happen every time, rather only nerve may get stretched causing similar debilitating outcome. Stretching of the nerves, especially of the Sciatic nerve happens in total hip replacement surgery. For severe damage exploration and repair is required. For the rest observation along with modified rehabilitation protocol is followed. Nerve may take six to nine months to recover; sometimes the damage may never recover.

## **Extra Bone Formation (Heterotopic / Ectopic Bone)**

It is one of the less common complications and one of the commonest causes of hip stiffness after total hip replacement surgery. Small amounts of ectopic bone appear frequently around hip replacements but do not cause any problem and extensive bone formation causing severe stiffness is rare. Patients undergoing total hip replacement following acetabular fractures are at high risk and indomethacin is given post surgery to prevent it. Radiation treatment is also an alternative. It can also be treated by surgical removal of the bone, but only when it is "mature and extensive".

## **Fractures or Breaks in the Bone**

Incidence of fractures is low, but can occur during surgery and they can either be a crack, perforation or major fracture. Severely osteoporotic bones are at a higher risk. Minor cracks can be managed by changes in postoperative rehabilitation protocol, while major fractures are managed well with wires, cables or appropriate long implants. Sometimes fractures are noticed only on post operative x-rays, and they are managed by modifying postoperative protocol or rarely may require resurgery.

Fracture around the implant (peri-prosthetic fractures) can happen many weeks or months after the surgery. These peri-prosthetic fractures usually require surgery.

## **ALVAL or “allergy to metal ions”**

It is an uncommon complication seen after metal on metal total hip replacement surgery. People who know they have metal allergies should be tested for metal allergy, however, the tests are not very reliable, and so they are only performed if a metal allergy is suspected. Allergy to the plastic parts has never been reported. Some patients with metal implants have had temporary, mild skin rashes, while some have had severe rashes that resolved only with removal of the implant. **ALVAL** is a Delayed Type of metal Hypersensitivity (DTH) is induced due to high concentrations of Cobalt and Chromium ions that build up around the joint. This leads to painful inflammation in the joint (“Lymphocytic Vasculitis”) and is also termed as “pseudo-tumors”. Note that the term “pseudo-tumor” does not mean it is any type of cancer. Indeed, so far, after more than twenty-five years of metal-on-metal experience in Europe, there is no evidence that metal ions from a hip replacement might cause cancer.

## **Summary**

I understand surgery is not a pleasant prospect for anyone, but for some people who are crippled with arthritis, it could mean the difference between leading a near normal life and putting up with a debilitating condition.

Surgery is only offered once non-operative treatment has failed. It is an important decision to make and ultimately it is an informed decision between you, your surgeon, and your family. Surgery offers **correction** of deformity, **relief** in pain, and **restoration** of movements to bring independence in all the activities important for daily living. With recent advances in medicines and anesthesia this is done with the least amount of possible risk.

Although most people are extremely happy with their total hip implant, complications can occur and you must be aware of these prior to making a decision. You should discuss all of your concerns thoroughly with your Surgeon prior to surgery so that you can be sure that this is the procedure for you.