



PAO Surgery: Risks, Complications, and Recovery Process

Periacetabular Osteotomy (PAO) is a highly effective procedure for treating developmental hip dysplasia, aimed at reducing pain, improving joint function, and preserving the hip for long-term use. While the surgery has a high success rate, like all surgeries, it comes with potential risks and complications. Understanding these risks and knowing what to expect during recovery can help you make informed decisions and better prepare for your surgery.

Potential Risks of PAO Surgery

While PAO has a high success rate, there are several potential risks and complications that you should be aware of. These risks are uncommon, but it is important to discuss them with your surgeon to fully understand the benefits and risks associated with the procedure.

1. Failure of Bone Cuts to Heal (Nonunion)

In some cases, the bones cut during PAO may not heal properly. This condition is called nonunion and occurs when the bone fragments fail to fuse together. Nonunion can cause persistent pain and may require additional surgery to encourage bone healing.

2. Infection

Infections can occur at the incision site or deep within the surgical area. Although infections are rare, they are treated with antibiotics, and in more severe cases, additional surgery may be necessary to clean the affected area.



3. Bleeding and Blood Clots

Blood loss during surgery is common, but major bleeding is uncommon due to the use of advanced surgical techniques. After surgery, there is a risk of deep vein thrombosis (DVT), a type of blood clot that can form in the leg veins due to limited mobility. Your surgeon will likely prescribe blood thinners and recommend regular leg movement to reduce this risk.

4. Nerve or Muscle Damage

PAO surgery involves cutting near important nerves and muscles around the hip joint. While surgeons take great care to avoid damage, there is a small risk of nerve injury, which could cause numbness, weakness, or muscle paralysis in the leg. Nerve damage may resolve on its own, but in rare cases, it could be permanent.

5. Numbness in the Thigh

Temporary or permanent numbness around the incision site or on the outside of the thigh is common after PAO. This is usually caused by damage to small sensory nerves during surgery. While this numbness doesn't typically affect function, it can feel uncomfortable or strange.

6. Extra Bone Formation (Heterotopic Ossification)

In some patients, heterotopic ossification (the formation of extra bone) can occur around the hip joint after surgery. This extra bone may limit movement and cause discomfort. Medications like Celebrex or Naproxen are often prescribed after surgery to prevent this condition.

7. Hardware Complications

The screws used to stabilize the hip joint may loosen, break, or cause irritation over time. In rare cases, these issues can lead to pain or instability, requiring removal or replacement of the screws.



8. Joint Stiffness or Instability

Following surgery, some patients may experience stiffness in the hip joint or feelings of instability during movement. Stiffness is often resolved with physical therapy, but severe cases may require additional intervention.

9. Development of Arthritis

While PAO surgery aims to prevent or delay the onset of arthritis, it cannot completely eliminate the risk. Some patients may still develop osteoarthritis in the hip joint over time, particularly if there was significant cartilage damage before surgery.

Preparing for Surgery

Preparing for PAO surgery involves several important steps to ensure your body is ready for the procedure and to minimize risks.

Preoperative Tests

Before surgery, your surgeon will order a series of tests to evaluate the health of your hip joint and ensure that you are physically ready for surgery. These may include:

- **X-rays: To assess the alignment of the hip socket and femoral head.**
- **MRI scans: To examine the condition of the cartilage and soft tissues.**
- **Lab work: To check your overall health, including blood counts, electrolyte levels, and kidney function.**

Medications

Your doctor will advise you to stop taking certain medications before surgery to reduce the risk of complications:



- **Discontinue Birth Control:** Hormonal birth control can increase the risk of blood clots. Your doctor may ask you to stop taking birth control pills or other hormonal contraceptives at least one month before surgery and for one month after surgery.
- **Stop Anti-Inflammatory Medications (NSAIDs):** Medications like ibuprofen, Advil, Aleve, and aspirin can increase bleeding during surgery. These medications should be stopped at least 7 days before your operation.
- **Narcotics:** If you've been using narcotic pain medications before surgery, you may need to gradually stop them to improve post-surgical pain management.

Lifestyle Adjustments

Making lifestyle changes before surgery can improve your recovery and reduce complications:

- **Quit Smoking or Vaping:** Smoking and vaping can delay wound healing and increase the risk of infection. You should quit at least 1 month before surgery.
- **Limit Alcohol Consumption:** Alcohol can increase bleeding and interfere with medications, so it's best to avoid alcohol leading up to your surgery.

In the Hospital

Day of Surgery

On the day of surgery, you will check into the hospital and go through the following steps:

1. **Preoperative Preparation:** A nurse will check your vitals, and you will be given a hospital gown to change into.
2. **Meet Your Surgical Team:** You will meet your surgeon, anesthesiologist, and operating room nurse to review the surgery plan.



3. **Anesthesia:** PAO is performed under general anesthesia, meaning you will be asleep during the procedure. In some cases, an epidural may also be placed to manage post-surgical pain.
4. **Surgical Procedure:** Once under anesthesia, the surgical team will perform the PAO, taking approximately 4-6 hours depending on the complexity of the case.
5. **X-Rays:** After the procedure, X-rays will be taken to confirm that the bones are in the correct position and the screws are securely in place.

Post-Surgery

Once surgery is completed:

- You will wake up in the recovery room where nurses will monitor your vital signs and pain levels.
 - Pain management will begin immediately, usually with IV medications or epidural pain relief.
 - You will be transferred to your hospital room once stable, where your recovery begins.
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Recovery Timeline

Weeks 1-6: Rest and Gentle Movements

During the first 6 weeks of recovery, the focus is on protecting the hip joint and allowing the bones to heal:

- **Limited Weight-Bearing:** You will be restricted to 1/6 body weight on your operated leg. This means you can only put a small amount of weight on the leg while using crutches or a walker for support.
- **Pain Management:** Pain will be managed with oral medications like Norco or OxyContin, along with anti-inflammatory drugs to reduce swelling.



- **Physical Therapy:** Physical therapy will focus on gentle range-of-motion (ROM) exercises to prevent stiffness and maintain joint flexibility. You will not be allowed to actively flex the hip joint for the first 6 weeks.

Weeks 6-12: Weight-Bearing and Mobility

As your bones continue to heal, your physical therapy program will become more active:

- **Increased Weight-Bearing:** You will gradually be allowed to increase the weight you put on your leg, with guidance from your surgeon and physical therapist.
- **Strengthening Exercises:** Physical therapy will focus on strengthening the muscles around the hip joint to support your recovery. You may also begin using a stationary bike without resistance and start pool therapy if available.

3-6 Months: Return to Normal Activities

By the 3-month mark, you should see significant improvements in mobility and strength:

- **Weaning Off Crutches:** Most patients can stop using crutches by 3 months, but this will depend on your progress.
- **Gradual Return to Activities:** Light activities like walking, swimming, and yoga can be resumed. High-impact activities like running should be avoided until your surgeon clears you for more intense physical activity.

Long-Term Outlook

PAO surgery has a high success rate, with studies showing that approximately 90% of patients maintain a well-functioning hip joint 10 years after surgery. Most patients experience significant pain relief and an improvement in daily function and mobility.

However, there are a few long-term considerations:



- **Osteoarthritis Risk:** While PAO can delay or prevent the onset of arthritis, it cannot completely eliminate the risk. Some patients may still develop arthritis over time, especially if there was pre-existing cartilage damage before surgery.
 - **Additional Surgery:** In some cases, additional surgery, such as screw removal or even a total hip replacement, may be necessary in the future if arthritis or other hip problems develop.
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Conclusion: What to Expect

PAO surgery offers a highly effective solution for treating developmental hip dysplasia, but it's important to understand the potential risks and prepare yourself for the recovery process. By following your surgeon's instructions, attending regular follow-up appointments, and committing to physical therapy, you can achieve the best possible outcome from PAO surgery.

If you have any concerns or need more information about PAO, don't hesitate to contact our team at HipPreservation.org.