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Cartiva Big Toe Joint Replacement: Accelerated Rehabilitation Protocol

Operative Summary

Cartiva Synthetic Cartilage Implant is designed to replace the damaged cartilage surface. Cartiva is made from polyvinyl alcohol (PVA), a material that has been used in medical devices for more than 20 years. It is designed to mimic the properties of natural cartilage. During the surgery the joint is opened, excess bone removed, then a hole is made in the metatarsal (one side of the joint) and the implant fitted. For more information on Cartiva, go [here](#).

Day of Operation (Day 0)

Strict elevation

Rigid post-operative sandal - mobilise full weight bearing (with 2 crutches only if needed)

Home the same day

Some bleeding may to be seen through bandage, this is normal

Move toes, ankle, knee and hip

Regular (3-4 times/day) pain relief (Codeine and Diclofenac) once discomfort begins (as the ankle anaesthetic block wears off, approximately 6-12 hours after surgery)

Weeks 1 and 2 Post Operatively

Strict elevation of the foot at the level of the chest (for pain relief, swelling and wound healing)

Week 1: 23 hours a day for 7 days; **Week 2:** As much as possible, minimum 40 minutes every hour

Regular (3-4 times/day) pain relief (Codeine and Diclofenac) only if needed

Full weight bearing in post operative sandal (can be removed at night if desired, but put back on when walking)

Place 2 pillows under your mattress for elevation when sleeping

Keep bandage on and keep dry. You may use a 'cast / bandage protector for bathing', available on-line Eg. LimbO device

Ice for 10 minutes every hour, on top of bandage, even if you feel the foot is not getting cold

Move toes, ankle, knee and hip. Straight leg raises

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Day 3 Post Operatively – Bandage Removal + Showering

You should remove the bandage yourself. Underneath will be gauze, remove this too. The gauze and dressing may be blood stained – this is normal.

You can now have a light shower, but not a bath, protecting the foot from water.

Day 3 Post Operatively – Normal Shoe and Start Rehabilitation Exercises

You can now try and wear a normal shoe if you feel comfortable enough

It will need to be a generous fit ie a lace up shoe

If you cannot get into a normal shoe, continue to wear the post-operative sandal

Continue full weight bearing

Start Rehabilitation Exercises (see below, 5 times / day) – this is in order to preserve as much movement gained during the operation as possible

Week 3 Post Operatively (after 2 weeks completed)

Clinic review by Mr Gordon - Dressing removed, wound inspected, stitches removed

Continue elevation at the level of the heart when not walking, especially at the end of the day

Post-operative sandal can be removed (if not already) and normal shoe worn, or as soon as you are comfortable to do so.

Continue rehabilitation exercises

Week 6

Outpatient visit - Pain, swelling and movement assessed

Continue rehabilitation exercises

Expect some swelling

Month 3-6

Outpatient visit as required - Pain, swelling and movement assessed.

Shoe fitted reviewed

Continue rehabilitation exercises

Expect some swelling but most should have resolved

Rehabilitation Exercises – Day 3 Post Operatively (5 times / day)

Big Toe Joint Exercises : Aim – To restore big toe joint movements

1. Seated heel raises x 20: Sit with foot flat on floor, knees bent 90° keeping toes on floor, raise heel to the limit of pain and return. Bend your knee more than 90° if you feel comfortable to do so, this will bend the toe more.
2. Toe lifts x 20: Sit with foot flat on floor, raise toe as far as possible to ceiling and return
3. Toe bends x 20: Sit with toes resting over the edge of a phone book, bend toes towards the floor
4. Toe pulls x 20: Pull toe up with hand to pain and hold for 3 seconds, relax
5. Toe pushes x 20: Push toe down with hand to pain and hold for 3 seconds, relax

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Rehabilitation Exercises - After 1 week Post Operatively (or sooner if you are able) (5 times / day)

6. Standing both heel raises x 20: Stand close to a wall for balance, raise heels to the limit of toe pain and hold for 3 seconds
7. Standing single heel raises x 20: Stand close to a wall for balance, stand on one leg, raise heel to the limit of toe pain and hold for 3 seconds
8. Continue exercise 3, 4 and 5

Ankle and Calf Exercises : Aim – To maintain muscle tone, strength and mobility

Ankle and Calf: ankle plantar flexion (tip toe position) and dorsiflexion (bring foot up), strengthening of the peroneal muscles (bring foot out to the side)

Gait training: Optimise load distribution for the whole foot focusing on weight bearing of the first MTP (big toe) joint and hallux (big toe)

Returning to Work

Sedentary jobs: Return after 1 week, if able to maintain foot elevated at level of waist

Standing/walking jobs: Return after 2-4 weeks, but may be sooner depending on comfort and swelling

Manual/labouring jobs: Return after 4-6 weeks, but may be sooner depending on comfort and swelling

Driving

You need to be able to control the vehicle in an emergency. Can you stamp your foot down on the ground? For left sided surgery and no clutch is required, driving is probably safe after 3 days post operatively. For right sided surgery, driving is probably safe at 1 - 2 weeks post operatively, once in a normal shoe. If you are unsure, please ask Mr Gordon.

References

Postoperative Rehabilitation after Hallux Valgus Surgery: A literature review, Polastri, The Foot and Ankle Online Journal 4 (6): 4 2011

Rehabilitation After Hallux Valgus Surgery: Bearing of the First Ray During the Stance Phase Importance of Physical Therapy to Restore Weight, Schuh et al, PHYS THER. 2009; 89:934-945