

Operative Technique and Tips SPAIRE Technique for Hip Replacement

SPAIRE Hip Instruments

SPAIRE Hip Instruments are manufactured exclusively by Platts & Nisbett.

The SPAIRE Hip Replacement Kit (PN2932) consists of: -

- 1 x Sterilisation Container complete with Base, Lid and Inner Instrument Basket
- 1 x SPAIRE Offset Hip Retractor, Self Retaining, Odd Leg (Left)
- 1 x SPAIRE Offset Hip Retractor, Self Retaining, Odd Leg (Right)
- 1 x SPAIRE Hohmann Retractor, Angled, 18mm
- 1 x SPAIRE Iliac Wing Retractor
- 1 x SPAIRE T Handle Retractor with Ischial / Iliac Pins
- 1 x SPAIRE Reamer Detachment Forceps
- 1 x SPAIRE Anterior Retractor, Double Angled, 25mm
- 2 x SPAIRE Trethowan Bone Lever, Ring Handle, 45°, Sharp Tip
- 1 x SPAIRE Inferior Retractor, 22mm

SPAIRE Hip Instruments can be found at www.plattsnisbett.com or www.spaire.co.uk

Abbreviations used in document:

- P – Piriformis
- IG – Inferior Gemellus
- OI – Obturator Internus
- OE – Obturator Externus
- QF – Quadratus Femoris
- QC – Quadriceps Coxa
- TAL – Transverse Acetabular Ligament
- GT – Greater Trochanter

Guide assumes the surgeon is following the surgical technique for the Exeter Hip as described in Stryker Exeter Hip Surgical Technical Guides

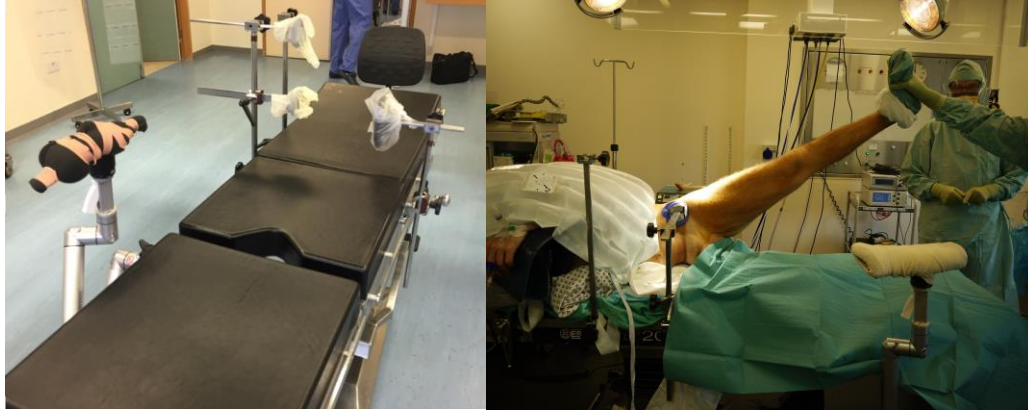
(<https://www.strykemeded.com/surgical-techniques/>).

Standard Exeter technique is assumed with only exceptions and tips and tricks noted below.

Surgeons should use their own experience to decide whether or not to use the described techniques in a particular patient given the bony and soft tissue anatomy.

Operating Room (OR) table preparation:

Attach to OR table anterior to patient:
Tall proximal post for anterior retractor chain
Leg holder. Assistant to rehearse rotation to correct position



Draping order:

Long drape over end of Table
Mayo cover over leg holder
Sideways Utility drape over Mayo cover
U-drape etc.

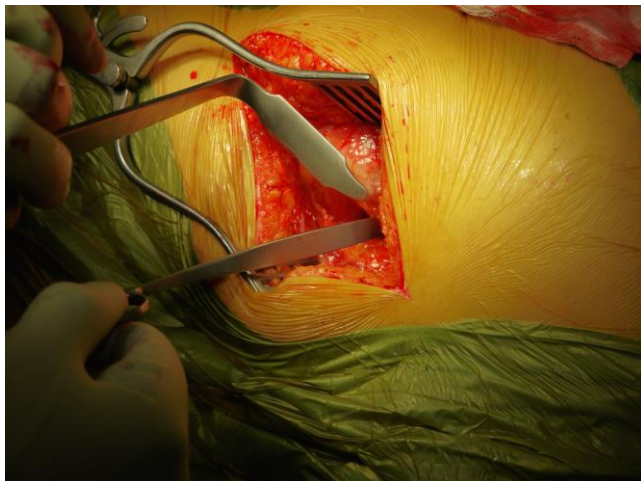


Posterior Surgical approach

Run finger up and down course of sciatic nerve to free adhesions.
Lift knee and with hip abducted form interval between IG and QF.
Pass Trethowan spike superiorly between QC and capsule.



Pass SPAIRE Bent Hohman in interval over superior capsule



Divide adhesions between QC and capsule
Use long diathermy cutting needle for division of femoral attachment of QF, OE and posterior capsule.
Proximally cut along neck of femur from inside-out until diathermy tip is felt to enter space between femoral head and acetabulum. Divided labrum will now be visible at proximal end of incision
Single 5 non-absorbable stay suture running along capsule edge and including OE.
Clip on each end.



Dislocate hip beneath QC in full flexion, adduction and internal rotation
Excise the femoral head. The lateral extent of the osteotomy should NOT enter the GT.

Tips:

1. Be aware of the position of the sciatic nerve and protect it at all times.
2. BEWARE OF running across posterior/superior acetabulum. It is easily mistaken for labrum or posterior capsule at the edge of the acetabulum and is easily damaged. Use the SPAIRE bent Trethowan Bone Lever to isolate it whilst dissecting.

Exposure of acetabulum

Slide anterior retractor up anterior wall of acetabulum at about 2 o'clock (Right hip) 10 o'clock (Left hip) and pierce interval between labrum and capsule. Assistant to apply initial traction.

Using diathermy, release inferior capsule at 6 o'clock down onto TAL
Surgeon to apply traction to anterior retractor with one hand and use the other to flex and abduct the hip. By feeling the tension in retraction, balance the position of the limb with the pull on the retractor so that the femur is retracted as anteriorly and proximally as possible with least force necessary to achieve the best access along the line of the axis of the acetabulum. The hip is normally in a position of approximately 80 degrees flexion, neutral abduction (femur horizontal) and variable rotation.

Assistant to rotate the leg holder exactly in line with the knee and tibia to maintain optimal limb position.

Attach anterior retractor via long chain to proximal post on table

Slide the long arm of sided SPAIRE self-retainer up posterior acetabular wall and retract between posterior capsule and trochanter/QF complex.

Inferior retractor may be introduced with tip under TAL



Introduce bent SPAIRE Trethowan between labrum and capsule to retract capsule and protect OI

The pins on chain may be introduced to enhance exposure:

Long pin – beneath OI into ilium (same position as aspirator-retractor)

Short pin – between labrum and capsule into ischium

Hold labrum with Kochers and excise. The rim of the acetabulum can be exposed by sharp dissection.

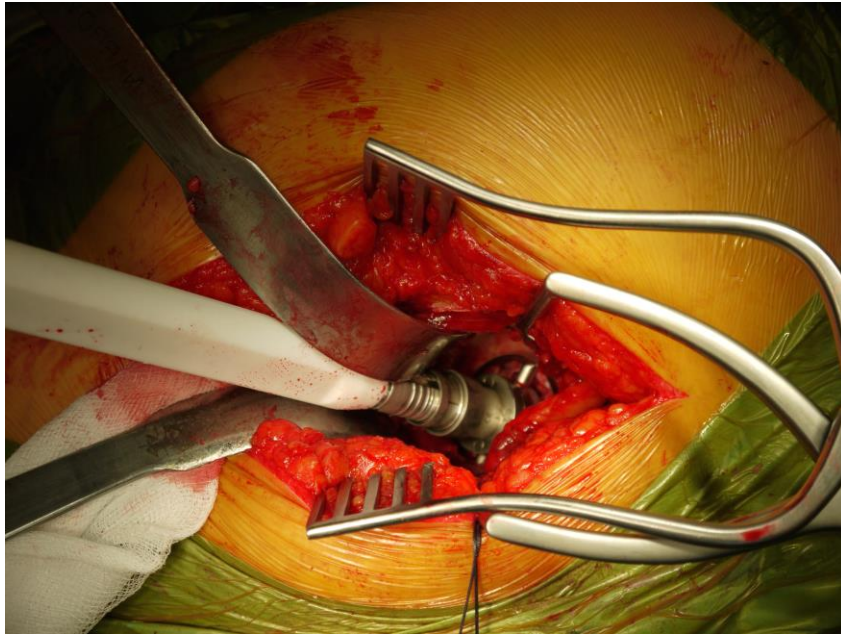
The acetabulum may now be reamed.

Tips:

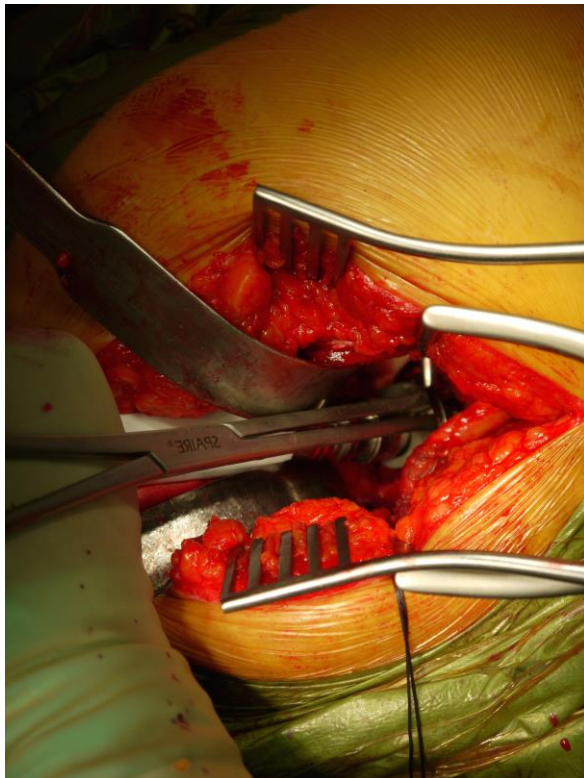
Always protect OI - if unsure of course isolate with the bent SPAIRE Trethowan Bone Levers.

If the access is tight introduce the reamer basket by hand between the retractors into the acetabulum so as not to disturb them.

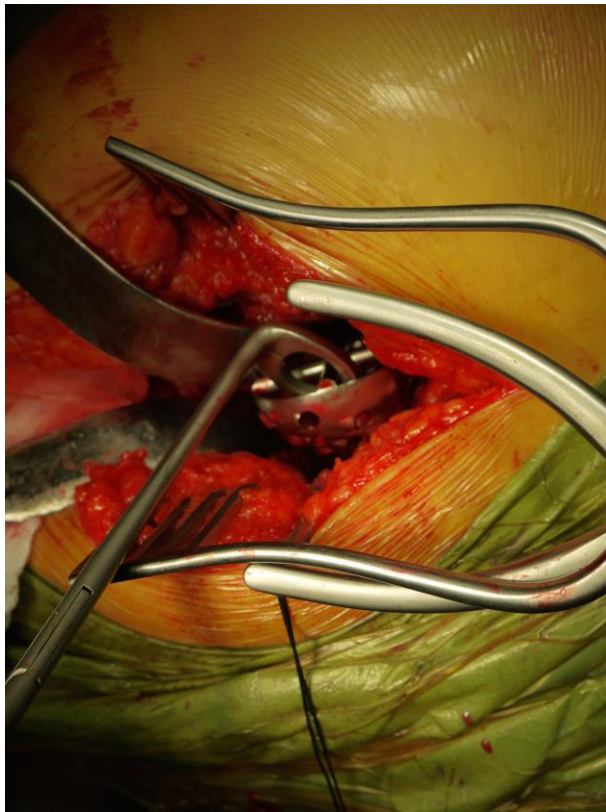
Reaming in line with axis of the acetabulum may necessitate changing the line of pull of adjacent Anterior/Inferior retractors and occasionally removing the inferior retractor completely



If tight, use the SPAIRE forceps to disengage the reamer from the shaft of the power tool



and use forceps to lift the reamer out of the wound.



Introduction of the socket

If the exposure is tight the pelvis may have been pulled into a more open and anteverted position than is normal with a conventional posterior approach. If this is the case do not close the angle of inclination of the acetabular introducer (in relation to the table) more than 45 degrees or the component may end up in a more closed anatomical position than planned. Use TAL to guide anteversion.



Tips:

If exposure is tight it may be necessary to introduce the acetabular component into the acetabulum and attach the Introducer deep to the retractors

Exposure of the proximal femur

Use the two femoral elevators in traditional fashion

With a wide pelvis tension in the abductors and QC may be reduced by positioning the leg holder beneath the knee to elevate it slightly.

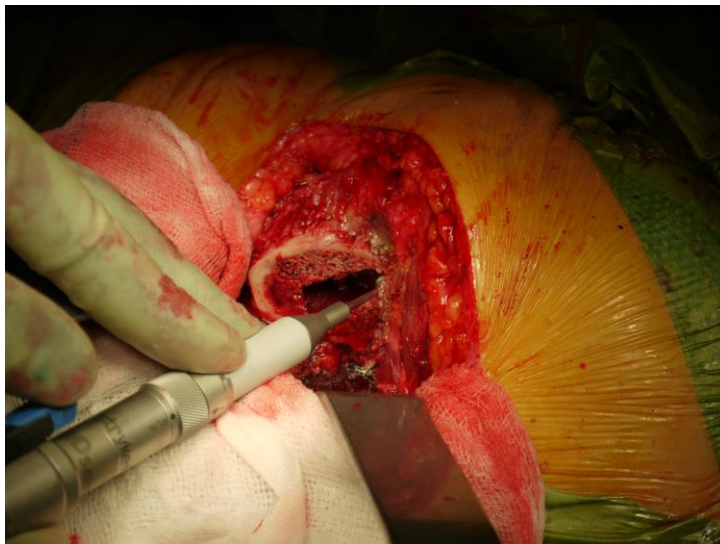
Clear soft tissue around the insertion of OE from the trochanter. Tissue behind the insertion of P and OI may be released from the inside of the GT.

Remove slot of trabecular bone from neck in line of desired anteversion

Use a burr in GT in line with slot to allow insertion of broach in neutral alignment.

Tips:

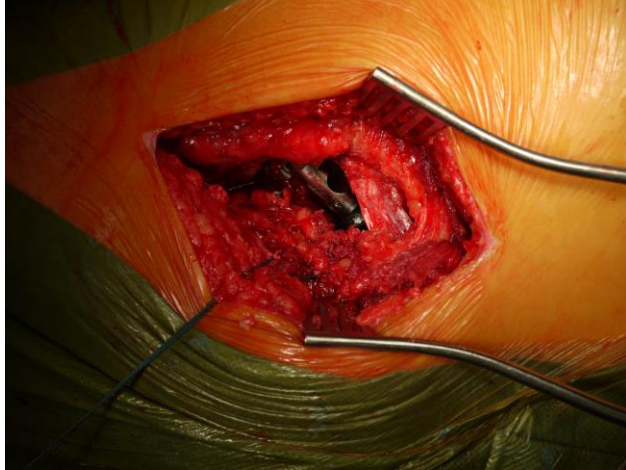
By using the burr from inside the slot laterally into the GT only necessary bone will be removed. The crucial insertion of P and OI into the GT are anterior to the GT slot and can easily be palpated.



Trial reduction of the hip

It can be difficult to dislocate a reduced hip, even with a bone hook. If the reduction feels tight start using a -4mm head for trial reduction, even if a +0mm head is planned, to facilitate dislocation.

The length of the posterior capsule, tension in the QC and the kick test are sensitive in confirming that the planned leg length and offset have been established.



Dislocation of the hip

Dislocation is achieved with a bone hook and the assistant applying consistent axial traction on the limb as the hip is fully flexed and internally rotated. Traction should be maintained until the head has been delivered beneath the QC tendons.

Trans osseous repair of the posterior capsule with OE

Two Drill holes are made in the position appropriate for repair of the Capsule and associated OE.

Mobilisation

No restrictions whatsoever are necessary and the patient should be encouraged to fully flex the hip in external rotation from Day 1.

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