

Executive

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Proximal femur 31-B2

ORIF

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ORIF: Sliding hip screw

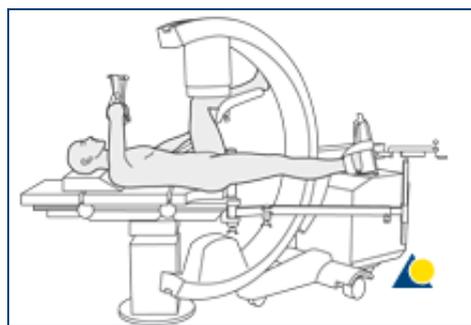
1 Principles

Choice of fixation method

31-B2 and B3 fractures are unstable, displaced subcapital fractures. Their prognosis is by and large the same and they will be discussed as one group for the purpose of manner of reduction and choice of fixation, should internal fixation be chosen as the method of treatment.

They can be stabilized with either cannulated screws or DHS. At this point we do not have sufficient evidence based information to point to one or the other method as superior. If the surgeon feels that optimal stability is required, he should choose a sliding hip screw (DHS) type of implant for fixation.

If added rotational stability is desired in addition to the DHS, a cannulated screw is inserted above and parallel in both planes to the DHS. It must be parallel in order not to block the sliding property of the DHS implant.



Positioning of the patient

The patient is positioned supine on the fracture table. The ipsilateral arm is elevated in a sling and the contralateral uninjured leg is placed on a leg holder.

C-arm image intensifier control during surgery is a must.

2 Reduction

Closed reduction

Reduction can usually be obtained with gentle traction and internal rotation of the fractured leg, carried out under

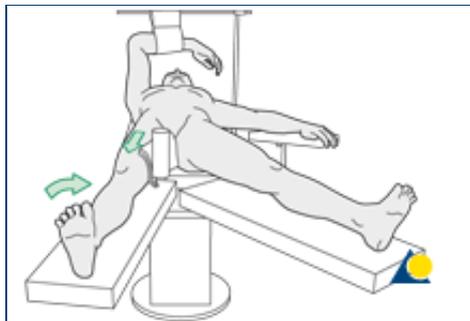


image intensifier control.

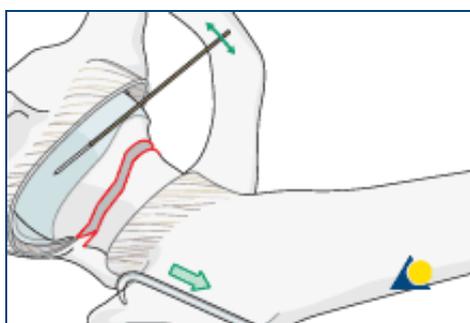
The reduction must be checked in both the AP and lateral view with an image intensifier.

Occasionally, anteroposterior pressure applied to the thigh

may help to reduce retroversion.

If gentle closed reduction is unsuccessful, proceed to open reduction.

The reduction should restore anatomical alignment.



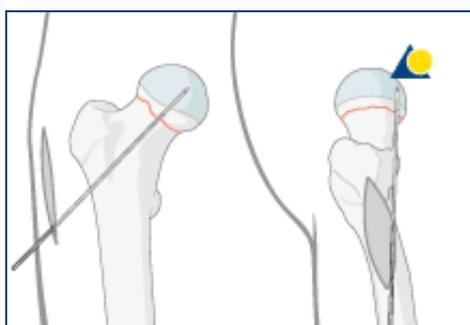
Open reduction

If closed reduction fails, an open reduction must be carried out. The reduction of the neck fracture is carried out under direct vision.

Once the capsule is opened

up while applying traction the head is manipulated with hooks or K-wires, inserted to act as joy sticks until an anatomical reduction is achieved.

3 Fixation with DHS



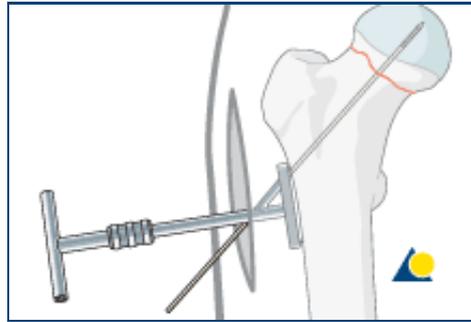
Technique of insertion

The first step is to position a guide wire on the neck and hammer it into the head.

With the C-arm positioned to show the neck axis, slide the guide wire along the neck,

parallel to its axis, and gently tap it into the head.

With the C-arm in the AP, make sure that the wire subtends the CCD (collum-center-diaphysis) angle of the neck. This will help you with the insertion of the guide wire for the DHS screw.

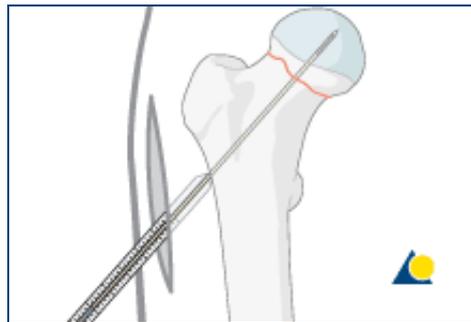


Insertion of the guide wire

Choose the correct aiming device according to the CCD angle of the neck. Check its position in the AP view with the image intensifier.

Insert the guide wire through the aiming device and advance it into the subchondral bone of the head, stopping 10 mm short of the joint.

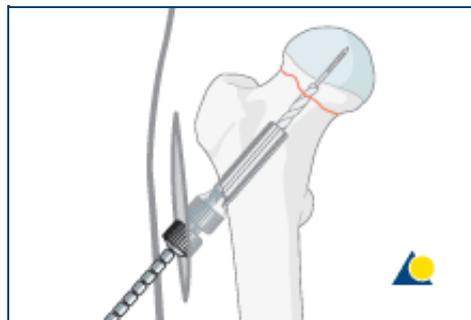
In both the AP and lateral planes, the guide wire should be positioned along the axis of the neck and through the middle of the head, and advanced to within 5 mm of the subchondral bone.



Determination of the length of the DHS screw

Determine the length of the DHS screw with the help of the measuring device. Select a screw which is 10 mm shorter than the measured

length.



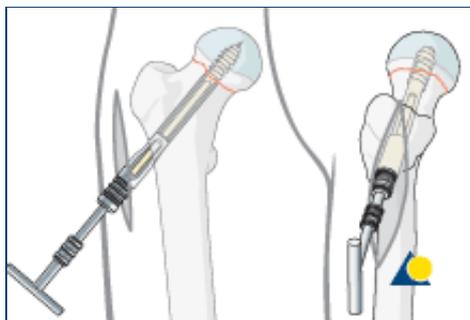
Drilling

Adjust the cannulated triple reamer to the chosen length of the screw.

Drill a hole for the screw and the plate sleeve.

Screw insertion

The correct screw is mounted on the handle and inserted over the guide wire. By turning the handle it is advanced into the bone. Do not push forcefully or you may distract

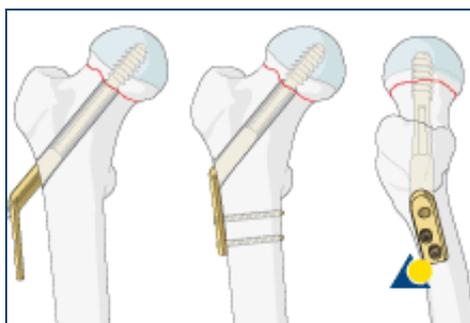


the fracture.

In young patients with hard bone it is best to use the tap to precut the thread for the screw. Otherwise the screw may not advance, and you may actually displace the

fracture by twisting the proximal fragment as you attempt to insert the screw.

When the screw has reached its final position (checked with the image intensifier: 10 mm short of the subchondral bone in the AP and lateral), the T-handle of the insertion piece should be parallel to the long axis of the bone to ensure the correct position of the plate.

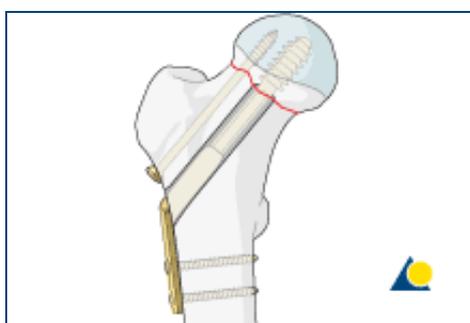


Fixation of the DHS plate

Generally, a two-hole DHS plate with the preoperatively determined CCD angle will be chosen.

Take the plate with the correct CCD angle, slide it

over the guide wire, and mate it correctly with the screw. Then push it in over the screw and seat it home with the impactor.



Additional rotational stability

As the plate is mated with the screw and seated with the impactor, some impaction of the fracture may occur.

Fix the plate to the femur with one or two screws. If additional rotational stability is required, insert a cannulated screw above the DHS. This screw must be

parallel to the DHS in both the AP and lateral planes.

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v2.0 2010-11-14